

MATHEMATICALLY SUCCESSFUL LATINA AND LATINO STUDENTS:
STRESSORS AND SUPPORTS

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Abstract

Evelyn M. Gordon: Mathematically Successful Latina and Latino Students: Stressors and Supports
(Under the direction of Carol E. Malloy)

This study explores the school experiences of six mathematically successful Latina and Latino middle school students. I examined each student's experiences in depth and identified commonalities and differences among the students using qualitative research methods and a comparative case study design. I used a critical multiculturalism perspective that related individual experiences to broader societal movements and incorporated an understanding of oppressed peoples as strong, resourceful, and resilient. Resilience theory as described by Benard (2004) provided a lens for examining the personal strengths and the family, school and community resources that support the students' success.

I identified ten stressors that were shared by at least two students: poverty, limited academic support at home, limited or strained parent-child relationships, immigration and separation from extended family, learning English, school changes, negative pressure from peers, difficulty with teachers, racism, and pressure to succeed. Students exhibited many personal characteristics of resilient people identified by Benard (2004). Caring relationships and opportunities to participate and contribute were protective factors at home and at school. High expectations were a protective factor at home and were a protective factor in mathematics class for three students; the teacher of the other three students did not hold high expectations for them. I identified three additional categories that may have contributed to

students' success but are not part of Benard's resilience model: Responsibility, Family Attitudes Toward School and Mathematics, and Modeling Resilience and Deliberate Actions.

For mi hija, Emiliana

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CHAPTER 1: INTRODUCTION

The day I met my first group of students as I started my brief public-school teaching career I suddenly realized I was involved in something that was terribly, horribly wrong. Days earlier I had submitted the final version of my project for an M.S. in mathematics and accepted a teaching position at a “school within a school” for students who had repeatedly failed an end of grade exam. The students had been retained in eighth grade on the basis of the exam results but attended classes in three rooms at a high school, mixing with the general student population only for physical education and lunch. Although nervous and acutely aware of how underprepared I was, I was also passionate about teaching mathematics and idealistic about an opportunity to help those students who most needed help. What I had not realized, and what I discovered at our open house to meet our students and their families, was that although the district was approximately 60% White (Public School Review, 2007) every single one of our students was African American. Despite a lifetime of political activism and family discussions about everything from foreign policy to U.S. race relations, I had not clearly understood the meaning of institutional racism until that day.

The second year of the program our students were more diverse: only two-thirds were African American; we now had five Latino students as well as one White student. I continued to struggle with my inadequate preparation for teaching students who were academically and culturally different from me. As before, I sought help from fellow teachers and from administrators. Although the first year I found advice from three young African American women (two other first-year teachers and an assistant principal) helpful, they were little

better equipped to serve our Latino students than I. In the midst of these difficulties I discovered an unexpected sense of fellowship with these students. They lived the disorienting sense of being “ni de aquí ni de allá” [neither from here nor from there] (Jae-P, 2003) that I had experienced at age 11 when my family returned to the USA after seven years in Australia and three months traveling in southeast Asia.

Since then I have met and married a Mexican-born man and had a child whose name will immediately signal her teachers that she is Latina. Her future, her peers' futures, and the students I taught all bring me to wonder how it is that some Latina/o¹ students manage to succeed in our schools when so many others do not and what we can do to increase the proportion of successes.

Problem Statement

Latinas/os represent a growing portion of the US population with the US Census reporting a 57.9% increase in the Hispanic or Latino population between 1990 and 2000 (US Census, 2001). Some of this growth has occurred outside areas that have historically had large Latina/o populations. States such as North Carolina, Arkansas, and Tennessee showed the highest rates of growth in their Latina/o populations between 1990 and 2000 (Calderón, 2007). This rapid growth has continued since the 2000 census. This increase is evident in the schools of the nation. For example, while only 6% of fourth grade students taking the National Assessment of Educational Progress (NAEP) mathematics exam in 1990 were Latina/o that number had increased to 19% by 2005 (Perie, Grigg, & Dion, 2005).

The overall picture of how Latina/o students fare in US schools is troubling. They

¹ In this paper I use “Latina/o” to refer to persons of unspecified gender and Latin American ancestry. Use of a masculine ending when gender is unspecified and masculine plural nouns for mixed groups is standard usage in Spanish. I have chosen this non-standard usage to emphasize my inclusion of women and girls as well as men and boys. “Latina” refers specifically to women or girls and “Latino” to men or boys. Some sources use the term “Hispanic” in referring to the same population, although they are here referred to as Latina/o.

appear to be at greater risk of dropping out of high school and of not attending college if they complete high school than students from any other racial ethnic group (Gándara, 2005).

Latina/o students are less likely to take high school mathematics classes beyond Algebra I than their peers (National Center for Education Statistics, 2007) and are under-represented in gifted and talented classes (Gándara, 2005). Eighth-grade NAEP Reading Assessment data from 2005 showed that 31% of students overall but only 15% of Latina/o students scored at or above the proficient level (Perie, Grigg, & Donahue, 2005). Similarly, eighth-grade NAEP Mathematics Assessment data from 2005 showed that while 30% of students overall scored at or above Proficient only 13% of Latina/o students did so (Perie, Grigg, & Dion, 2005).

The poor performance of Latina/o students on the NAEP mathematics assessment in comparison to the already unimpressive performance of students overall is particularly troubling because mathematics courses serve as gatekeeper courses in schools (Checkley, 2001; Malloy & Malloy, 1998). Students who are tracked into lower level mathematics courses do not have access to courses that enhance their chances of getting into college. In order to have access to the higher level courses students need to have taken algebra by the time they start high school (Checkley, 2001). Taking algebra in middle school thus serves to simultaneously mark students who have had relatively high achievement in mathematics up to that point and who are positioned to take courses in high school that will further their success.

Despite the gaps between Latina/o and total students' average achievement levels on many assessments there are, of course, high achieving Latina/o students. While some of these high achieving students come from middle-class families with well-educated parents (backgrounds that are associated with high school achievement in general), many do not. In

fact, Gándara (2005) found that the family backgrounds of the top quintile of Latina/o students were more varied than those of the top quintile of White students. Studying the success of some higher achieving Latina/o students may suggest ways in which other students can be supported so that they, too, can experience academic success.

Like the nightly news, educators have sometimes tried to claim a stance of neutrality in the classroom and in research. Banks (1995) has characterized mainstream academic knowledge as professing the ability to verify truths through objective research “uninfluenced by human interests, values, and perspectives” (p. 393). This is not my aim. As McLaren (2007) puts it,

Critical educators argue that any worthwhile theory of schooling *must be partisan*. That is, it must be fundamentally tied to a struggle for a qualitatively better life for all through the construction of a society based on nonexploitative relations and social justice. The critical educator doesn't believe that there are two sides to every question, with both sides needing equal attention. For the critical educator, there are *many* sides to a problem, and often these sides are linked to certain class, race, and gender issues [italics original]. (p. 195)

It was with this sense of partisanship that I considered the experiences of mathematically successful middle-school Latina/o students. Success, for the purposes of this study, was defined as being placed into Algebra 1 in middle school. Following the example set by Berry (2002), I administered a questionnaire to students; interviewed the students, their parents, and their teachers; observed students in their Algebra 1 classes; and reviewed documents from students' cumulative folders. The data from these sources were analyzed and compiled to present a portrait of each adolescent as a mathematics student. The data were analyzed further to identify common themes in each of the students' experiences that suggested both protective factors that contributed to their success and stressors that made that success more difficult to achieve. Together, the portraits and cross-case analysis provide a

view of the experiences of these students and the school system's response to them. The theoretical framework for the study overall is critical multiculturalism. I use resiliency theory, which emphasizes the experience of each individual, as a lens for examining protective factors and stressors for each individual.

Critical multiculturalism is an activist approach to education that is based on the pursuit of social justice and cultural pluralism. Works by Kincheloe and Steinberg (1997), Kubota (2004), Nieto (1995), and Sleeter and Grant (2007) were used as immediate sources for the definition used in this study. However, a variety of other sources contributed to my understanding of critical multiculturalism and my selection of essential features common to various authors' interpretations of this approach. Critical multiculturalism includes

- examination of collective oppression, such as racism, in terms of power relations;
- a focus on raising critical political consciousness;
- helping members of politically marginalized groups become active agents in analyzing and carrying out reforms;
- reflexivity in understanding how one's race, culture, class, gender, sexual orientation, and disability status (the list is context-dependent and evolving) affect one's life chances;
- critical examination of 'official knowledge' and also of alternative explanations; and
- a non-essentialist understanding of culture as a dynamic, complex, social construct.

Equity in school mathematics requires access to higher-level mathematics classes (Malloy, 2004; Nieto, 2002). This means the issues of who takes Algebra in middle school,

what barriers exist to taking Algebra in middle school, and how some students overcome those barriers are “profoundly multicultural questions” (Nieto, 2002).

Resilience is the ability of an individual to succeed despite difficulties. As described by Benard (2004), it includes four personal strengths: social competence, problem solving, autonomy, and a sense of purpose and bright future. Environmental protective factors in family, school, and community realms help individuals develop these strengths through innate developmental urges. Three protective factors in these realms may be present in varying degrees: caring relationships, high expectations, and opportunities to participate and contribute (Benard). Benard cautions that although it is easy to consider each of the protective factors independently they are, in fact, part of “a dynamic protective *process*, in which they must work together” (p. 44). Other resilience researchers have described the characteristics of resilient individuals and the protective mechanisms in slightly different terms but tend to focus on similar ideas and agree that it is best understood as a process and not as a collection of variables or independent factors (Rutter, 1987). Resiliency theory and its application to this study are expanded upon in a later section.

The research questions that guided this study were:

What educational and environmental stressors have Latina/o middle school students enrolled in Algebra 1 encountered?

What protective factors have contributed to the resiliency of Latina/o middle school students enrolled in Algebra 1?

Purpose

The purpose of this study was to better understand the difficulties that mathematically successful Latina/o middle school students had faced and what protective factors had helped them overcome the difficulties. This has practical utility in that it may suggest interventions that could either lessen the difficulties or provide supports for students more generally,

leading to greater mathematical success for all students. On a more theoretical level, linking the stressors to larger societal issues reveals root causes that are acting on, rather than arising from, the students. This appropriately attributes the main causes for Latina/o students' lower achievement to societal structures, including policies within schools, rather than to deficits in the students or their families. This link also helps to reveal the specific ways that societal issues such as poverty, immigration laws, and racism manifest themselves in individual's lives.

CHAPTER 2: REVIEW OF THE LITERATURE

US Schools are not as effective in teaching Latina/o students as they are students in general, as indicated by such varied measures as standardized test scores, inclusion in high-level academic courses, high school completion, and enrollment in and completion of college (Gándara, 2005; KewalRamani, Gilbertson, Fox, & Provasnik, 2007). The traditional method for assessing the causes of unequal achievement among groups of students has been based on a medical “pathology” model (Henderson & Milstein, 2003). That is, the lives of lower-achieving groups of students have been examined to try and determine what commonalities they share, “risk factors,” that are not shared by higher-achieving groups of students. This risk factor model locates the causes of failure in those who are failing, their families, and their cultures, but not the school system that is failing them. While this provides information about life events or situations that are highly correlated with failure, it does not explain the large numbers of students with those risk factors who manage reasonable success in school. Furthermore, it fails to identify systemic factors in the schools or society at large that impede students’ progress, ignoring the influences of racism, classism, sexism, and tracking. Critical multiculturalism provides a framework for analyzing the systemic causes of failure by linking micro-level school events to larger social issues (McCarthy, 1995). At the individual level an alternative to the pathology model is a resiliency model that examines those who succeed despite facing a difficult situation in an attempt to understand what makes these students resilient. Examining both the systemic factors impeding achievement and the resilience of students who succeed despite these factors may suggest ways in which schools

can reduce the stressors on Latina/o students and enhance the protective factors that support success.

In this chapter I review the literature about Latina/o school mathematics achievement including performance on standardized assessments and factors affecting Latina/o achievement including access to higher level mathematics in school, teacher expectations and caring, language and reform-based instruction, and parents' roles. I then define critical multiculturalism and discuss it as a theoretical framework for this study. This is followed by my review of several studies that focused on academically successful Latina/o students. I finish with a brief description of resiliency theory based on Benard (2004) and describe my use of resiliency theory as a lens for exploring individual protective factors within the framework of critical multiculturalism.

Latina/o Mathematics Achievement

In this section I review Latina/o achievement on standardized mathematics assessments and findings in the literature related to access to higher level mathematics, expectations and caring, language and reform-based instruction, and parents. In reviewing the literature on Latina/o student achievement in mathematics I found several themes that relate to Ladson-Billings's (1995) principles for teaching students who "have traditionally failed to perform well in mathematics" (p. 137):

- treat students as if they are competent and "cultivate and maintain strong interpersonal relationships between teachers and students" (p. 140)
- provide scaffolding to move students from existing knowledge to new knowledge,
- extend students' thinking beyond their existing knowledge, and
- make instruction the major focus of the classroom,

Other themes included access to mathematics instruction (Malloy, 2004; Nieto, 2002), language development for English language learners, and the importance of family support.

Performance on Standardized Mathematics Assessments

The long term trend National Assessment of Educational Progress (NAEP) provides information on mathematics achievement nationwide since 1973, including average scores by race/ethnicity. These trends show that from 1973 to 2004 Latina/o students have scored lower, on average, than the student population as a whole (KewalRamani, et al., 2007). This gap has not remained consistent over time, for the most part having decreased somewhat since 1973, and differs by age group. The test is scored out of 500 points with 9-year-olds' score averages ranging over time and racial/ethnic subgroup from 190 to 247, 13-year-olds' from 228 to 288, and 17-year-olds' from 270 to 315. The difference in average scale scores between Latina/o and Total students has fluctuated for all ages of students over the years; the difference in 2004 was lower than the difference in 1973 for each age group, although lower differences were achieved in intervening years for both 13-year-olds and 17-year-olds. See Table 1 for average scale scores and the difference between Latina/o students and Total students.

Table 1

Average mathematics scale scores on the long-term trend National Assessment of Educational Progress (NAEP), by age and race/ethnicity: Various years, 1973 through 2004

| Age, sex, and race/ethnicity | 1973 | 1978 | 1982 | 1986 | 1990 | 1992 | 1994 | 1996 | 1999 | 2004 |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 9-year-olds | | | | | | | | | | |
| Total | 219 | 219 | 219 | 222 | 230 | 230 | 231 | 231 | 232 | 241 |
| Hispanic | 202 | 203 | 204 | 205 | 214 | 212 | 210 | 215 | 213 | 230 |
| Difference | 17 | 16 | 15 | 17 | 16 | 18 | 21 | 16 | 19 | 11 |
| 13-year-olds | | | | | | | | | | |
| Total | 266 | 264 | 269 | 269 | 270 | 273 | 274 | 274 | 276 | 281 |
| Hispanic | 239 | 238 | 252 | 254 | 255 | 259 | 256 | 256 | 259 | 265 |
| Difference | 27 | 26 | 17 | 15 | 15 | 14 | 18 | 18 | 17 | 16 |
| 17-year-olds | | | | | | | | | | |
| Total | 304 | 300 | 298 | 302 | 305 | 307 | 306 | 307 | 308 | 307 |
| Hispanic | 277 | 276 | 277 | 283 | 284 | 292 | 291 | 292 | 293 | 289 |
| Difference | 27 | 24 | 21 | 19 | 21 | 15 | 15 | 15 | 15 | 18 |

Note: Adapted from NCES Table 17-2: Average mathematics scale scores on the long-term trend National Assessment of Educational Progress (NAEP), by age, sex, and race/ethnicity: Various years, 1973 through 2004. Difference in scores calculated by the author. Retrieved April 3, 2009 from <http://nces.ed.gov/programs/coe/2008/section2/table.asp?tableID=886>

The main NAEP assessment differs from the long term trend NAEP assessment but shows a similar pattern of lower Latina/o achievement. Students' scores are rated as Basic, denoting partial mastery of skills necessary for grade-level work; Proficient, denoting solid academic performance at grade level; Advanced, denoting superior performance; or Below Basic, indicating students have not mastered skills necessary for grade-level work (KewalRamani, et al., 2007). Fourth-grade, eighth-grade, and twelfth-grade students are assessed. The 2005 NAEP mathematics assessment results for all students and for Hispanic students are summarized in Table 2. Across the grade levels the percent of Hispanic students assessed at Below Basic is much greater than for students overall while much lower percentages of Latina/o students scored at the Proficient and Advanced levels.

Table 2

Percentage distribution of students across NAEP mathematics achievement levels, by race/ethnicity and grade: 2005

| Grade & Achievement Level | Total | Hispanic |
|--------------------------------------|--------------|-----------------|
| 4th Grade | | |
| Below Basic | 20 | 32 |
| At Basic | 44 | 49 |
| At or Above Proficient | 36 | 19 |
| Advanced | 5 | 2 |
| 8th Grade | | |
| Below Basic | 31 | 48 |
| At Basic | 39 | 38 |
| At or Above Proficient | 30 | 13 |
| Advanced | 6 | 1 |
| 12th Grade | | |
| Below Basic | 39 | 60 |
| At Basic | 38 | 32 |
| At or Above Proficient | 23 | 8 |
| Advanced | 2 | rounds to 0 |

Note. Adapted from *Status and Trends in the Education of Racial and Ethnic Minorities*, (p. 58), by A. KewalRamani, L. Gilbertson, M. Fox, and S. Provasnik, 2007, Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education

The achievement gap for Latina/o students at the national level is present locally as well. The statewide 4-year-cohort graduation rate for Latina/o students two years prior to the study was 53.6% while for students overall it was 69.5%. Latina/o students had lower average scores on the state’s End of Grade (EOG) exams administered at the ends of fifth and eighth grades: while 66.4% percent of all students scored at the level of proficient or higher, only 57.3% of Latina/o students did so. In each of the three study schools, the percent of Latina/o students in the advanced mathematics class I observed was between one-fourth and two-thirds the percent of Latina/o students in the school.

Access to Higher-level Mathematics

Latina/o students’ access to higher-level mathematics can be hindered by course offerings in the schools they attend (Lee, 2004), by the courses students actually take (Byrnes, 2003; KewalRamani et al., 2007), and by instructional practices in classrooms

(Rousseau & Tate, 2003).

In examining educational opportunities for Black and Latina/o high school students as compared to White students, Lee (2004) has documented that a higher percent of teachers in predominantly Latina/o high schools teach outside their area of certification, that per pupil expenditures in the 1990s tended to be lower in predominantly Latina/o high schools than in predominantly White schools, and that fewer courses were available to Latina/o students than to White students. The proportion of Latina/o students who attend schools with predominantly minority populations exacerbates this difference. In 2004 58% of Latina/o students attended a school that had at least 75% minority enrollment and 8% attended a school that had less than 25% minority enrollment (KewalRamani et al., 2007). The corresponding figures for students overall were 24% and 42% (KewalRamani et al.).

Latina/o high school graduates take fewer higher-level mathematics courses than high school graduates overall, and the gap did not narrow appreciably from 1998 to 2004 (KewalRamani et al., 2007). In 1998, 41.4% of all high school graduates and 26.2% of Latina/o graduates had taken a math course at the level of Trigonometry/Algebra III or higher while in 2004 the numbers had increased to 50.0% and 34.3%, respectively (KewalRamani et al.).

Ability grouping, or tracking, students into different levels of mathematics courses has challenged Latina/o students' potential for success. Latina/o students are overrepresented in low-track classes and underrepresented in high-track classes (Burriss & Welner, 2005). Compared to middle schools in which students are ungrouped, ability grouping in mathematics results in high-group students learning a little more and low-group students learning considerably less (Hoffer, 1992). Detracking can improve student outcomes, as

evidenced in Burris and Welner's examination of detracking in a New York school district. Middle schools in the district taught a condensed curriculum to heterogeneously groups classes with support classes and after-school help available for students who were struggling. As a result, the number of Latina/o and African-American students entering high school having passed the state's algebra-based Regent's exam increased from 25% to 75%; White and Asian American rates also greatly increased, from 54% to 98% (Burris & Welner).

In addition to taking different classes students may be affected by instructional decisions teachers make within classrooms. Teacher actions in the classroom can lead to different educational experiences for students, even if students are enrolled in courses that are nominally the same. Rousseau and Tate (2003) provide an example of a teacher who was "available" to help students if they requested it but took no proactive steps to ensure that students received high-quality instruction that met their needs. As a result, students in one class they observed, mostly minority-group members, received no instruction at all.

Much of the literature on access to higher-level mathematics examines who has access rather than the pathways students take to gain access and few, if any, use the student's perspective. The current study specifically considers what obstacles Latina/o students encountered in their mathematics education and how they overcame them to gain access to a track that includes Algebra I in middle school. It will focus on student strengths and on support they received from their families, the school system, and their communities. One of the important findings in Berry (2002), the research upon which this study is based, was that half the students had not been recognized as academically gifted and it had taken parental intervention to get them placed in higher-level classes. This raises questions about the access to higher-level courses for African American males, the student participants in Berry's work.

Whether mathematically successful Latina/o students faced similar barriers and, if so, how they overcame them was a primary object of this study.

Expectations and Caring

Research has shown a link between teacher expectations and student performance, including various studies of Latina/o students. Khisty (1995) found that a belief that their students are capable of advanced work in mathematics was one of two key differences between the successful teachers of Latina/o students and other teachers she studied.

Pollock (2001) acknowledges that teacher expectations are “a key factor in reproducing achievement patterns,” in particular racial achievement patterns. She continues, however, with the observation that teachers’ expectations are mirrored by both school-level and district-level administrators and by state education department personnel who expect racial achievement patterns to emerge from schools and school systems, all contributing to a normalization of racial achievement patterns. “Researchers, in turn, often wait perhaps most matter-of-factly of all for racial achievement patterns to be produced by actors other than ourselves” (p. 9) She concludes that without “communal discussion of how to *undo* racial achievement patterns, further, we risk allowing such patterns to appear both tolerable and natural” (p. 9).

Valenzuela (1999) found that teachers and Mexican-American students in the high school she studied had different conceptions of caring. Teachers were “concerned first with form and non-personal content and only secondarily, if at all, with their students’ subjective reality” (p. 22). Students, on the other hand, were primarily concerned with relationships and feeling that teachers cared about them as human beings. Latina/o students’ desire for teachers who care about them as people is a common theme in the literature about Latina/o schooling

in general (see, for example, Flores-Gonzales, 2002; Pizarro, 2005). Unfortunately, Flores-Gonzales, Pizarro, and Valenzuela all found that there were few such caring teachers in the schools they studied. Each also found that some teachers were actively abusive to students and denigrated their culture, their language, and their intelligence. The lack of support is one factor that leads to what Valenzuela calls “subtractive schooling” for many Latina/o students.

The caring theme is evident in mathematics-specific research. Teachers in a successful high school mathematics department developed caring relationships with students as mathematical learners and as people through classes, tutoring, informal lunch and hallways encounters, and school events (Gutiérrez, 1999). A culture of respect for students and student-centered instruction were identified as two of the most relevant aspects of school culture for promoting success in the mathematical education of migrant students in Texas (Reyes & Fletcher, 2003).

The current study adds to an existing body of research on the roles of teacher expectations and caring in the mathematics education of Latina/o students and offers multiple perspectives on caring and expectations in mathematics teaching and learning with Latina/o students.

Language and Reform-Based Instruction

The National Council for Teacher of Mathematics (NCTM, 2000) has developed principles and standards for teaching mathematics. The teaching envisioned in the *Principles and Standards for School Mathematics (Principles and Standards, NCTM, 2000)* is often referred to as reform-based instruction and I use that phrase here. The standards provide guidelines for what students should be learning at different grade levels in various areas of mathematics. The principles describe features of instruction and are:

- **Equity.** Excellence in mathematics education requires equity—high expectations and strong support for all students.
- **Curriculum.** A curriculum is more than a collection of activities: it must be coherent, focused on important mathematics, and well articulated across the grades.
- **Teaching.** Effective mathematics teaching requires understanding what students know and need to learn and then challenging and supporting them to learn it well.
- **Learning.** Students must learn mathematics with understanding, actively building new knowledge from experience and prior knowledge.
- **Assessment.** Assessment should support the learning of important mathematics and furnish useful information to both teachers and students.
- **Technology.** Technology is essential in teaching and learning mathematics; it influences the mathematics that is taught and enhances students' learning. (pp. 11-12)

This section is focused primarily on research findings related to the mathematical success of English language learners. However, I include reform-based instruction because many features of effective instruction described are in keeping with the *Principles and Standards*. Readers should note that this may, in part, be a reflection of the researchers' beliefs that mathematics should be taught for understanding.

There is a linguistic component to learning mathematics. The language of mathematics includes both vocabulary used exclusively in mathematics and words in common use that have particular mathematical meanings, referred to as the mathematical register (Khisty, 1995). This mathematical register exists in English and in Spanish and general fluency in either language should not be confused with mathematical fluency (Gutiérrez, 2002; Khisty, 1995). The practices suggested by the NCTM (2000) emphasize communication as a key component of successful mathematics teaching and learning. Students must not only be able to understand mathematical content but to talk and write about it. The linguistic component of mathematics learning is further complicated when students are also learning English.

Various studies suggest practices that can promote mathematical learning for students who are not yet fluent in English. Providing alternate forms of representation such as models, objects, and drawings supports students' development of mathematical concepts and language (Doty, Mercer, & Henningsen, 1999; Fuson, Smith, & Lo Cicero, 1997; Khisty, 2002). Teachers can teach unknown concepts using language that students already know and can develop language skills using known mathematical concepts (Garrison & Mora, 1999). Student stories and pictures can be used to develop mathematics problems (LoCicero, Fuson, & Allexsah-Snider, 1999). This last strategy provides students with an affective connection to the problems and ensures that the problems will be modeled on situations with which the students are familiar.

Teachers can deliberately encourage the development of students' mathematical registers. Khisty (1995) described a bilingual teacher's successful strategies for developing her Latino elementary students' mathematical register. The teacher emphasized the mathematical words when speaking through pauses and repetition, contrasted the specific mathematical use of the word with other common uses, and deliberately built students' vocabularies in both languages. Other strategies that increased students' use of the mathematical register included: working in small, linguistically heterogeneous groups (Brenner, 1998, Doty et al., 1999; Gutiérrez, 2002), demanding procedural answers (Brenner, 1998; Doty et al., 1999), speaking slowly and clearly (Doty et al., 1999), extensive questioning (Khisty & Viego, 1999), and modeling the use of mathematical vocabulary (Khisty & Viego, 1999).

Supporting bilingual students' use of Spanish as well as English in learning mathematics and solving mathematics problems was reported as helpful by virtually all of the

authors cited in this section. This was true whether teachers were bilingual themselves, monolingual English speakers, or relied on bilingual classroom aides to provide support and translation.

Many of the recommendations described are also features of reform-based instruction (e.g. using multiple forms of representation, cooperative groups, having students explain their solution strategies). In a quantitative study using data from the National Education Longitudinal Study of 1988 (NELS: 88) reform-based instruction was shown to have a small but positive effect on both achievement and students' attitudes towards mathematics among high-school students (Butty, 2001).

Parents

Parental encouragement and emotional support have been identified as key elements for successful Latina/o students (Duran, 1998; Flores-Gonzalez, 2002; Gándara, 1995; Garza, Reyes, & Trueba, 2004). Parents of successful Latina/o students frequently, though not uniformly, expressed one or more of the convictions that schooling was important, that perseverance would lead to success, and that their children had what it takes to succeed. This was true even for parents who were unable to provide academic help due to their own lack of education or language differences and were not involved in schools in traditional ways. Gándara's study of successful Latina professionals did include some cases in which the women reported no encouragement or even active discouragement from their parents, however they were a small minority. Parents' and schools' expectations for parental involvement in their children's schooling were found to be different in Guadalupe Valdés's (1996) study of Mexican American families and schools.

Ana María Lo Cicero, Karen C. Fuson, and Martha Allexaht-Snyder (1999) report

that establishing and supporting a home “math helper” was an important element in their work with Latina/o elementary school children. Helpers included parents, older siblings, other extended family members, and neighbors. The teachers provided guidelines explaining ways that the helper could assist a child, suggestions for things the child should do for herself, and strategies for solving some problems.

Civil (2006) observes that the status of Mexican-born parents in her study as low-income, recent immigrant, non-English speakers often meant their ideas about their children’s mathematics education were not valued in schools. Civil found that Mexican-born parents were concerned about the mathematics instruction their children received in US schools. Because parents found the algorithms used for basic operations with multi-digit numbers confusing they showed their children different algorithms they knew. Although their children found those methods simpler, they were unwilling to use them on homework for fear that the teacher would think they used a computer or calculator to solve the problems. Parents reported that the level of mathematics their children were taught was too easy for their age and grade, with frequent, uncomplimentary comparisons made between the topics covered in their children’s classes in the USA and those covered in niece’s and nephew’s classes in Mexico. In addition to this concern about the general level of mathematics teaching in US schools parents observed that their children were frequently taught lower-level mathematics skills because their English was not yet fluent, even when students had already learned higher-level mathematics in Mexico (Civil).

Critical Multiculturalism

The terms multiculturalism or multicultural education are used by different authors to describe a wide variety of theoretical positions and pedagogical recommendations (Banks,

1995; Kincheloe & Steinberg, 1997; Sleeter & Delgado Bernal, 2004; Sleeter & Grant, 2007). I start this section by reviewing some of these positions and distinguishing one position, critical multiculturalism, from the others. I choose the term critical multiculturalism to describe this perspective. As noted by Sleeter and Grant (2007) other terms authors use to advocate similar positions include “emancipatory pedagogy (Gordon, 1985), critical teaching (Shor, 1980), critical multiculturalism (Kincheloe & Steinberg, 1997; Obidah, 2000), antiracist teaching (Dei, 1996, Gillborn, 1995, Lee, 1995), anti-oppressive education (Kumashiro, 2002), culturally responsive teaching (Irvine, 2003), transformative pedagogy (Cummins, 2000), and social action (Banks, 1999)” (p. 186). Sleeter and Grant’s own choice is multicultural social justice education. After defining critical multiculturalism I describe my use of it as a theoretical framework for this study.

Critical Multiculturalism vs Multiculturalism

As the name suggests, critical multiculturalism is a form of multiculturalism influenced by critical theory. The goals of multiculturalism include antiracism, pluralism, and changing the culture of schooling so that a variety of cultural definitions of knowledge and learning are represented in both content and pedagogy. Critical multiculturalism adds a critical perspective that (a) strives for collaborative action to identify and reduce oppression both inside and outside the classroom; (b) analyzes collective oppression in terms of power relations; (c) recognizes and analyzes the political nature of teaching; and (d) seeks multiple interpretations of events to better understand the complex, situated, and often contradictory forces at work. To understand critical multiculturalism it is helpful to consider other types of multiculturalism with which to contrast and compare it. I offer highly abbreviated summaries of two typologies: Kincheloe and Steinberg (1997) emphasize the theoretical bases of five

types of multiculturalism while Sleeter and Grant (2007) adopt a more pedagogically-oriented description of five approaches to multiculturalism.

Kincheloe and Steinberg (1997) describe five types of multiculturalism: conservative multiculturalism/monoculturalism, liberal multiculturalism, pluralist multiculturalism, left-essentialist multiculturalism, and critical multiculturalism. They note that theirs is but one of many typologies and that in practice the varieties blur together. Conservative multiculturalism/monoculturalism holds Western culture to be superior and promotes the idea that schools should be sites for Americanizing students into our “common” culture. Proponents of this conservative perspective subscribe to deficit explanations for school failure that identify inherent or culturally transmitted inadequacy as the cause for students’ failures. Liberal multiculturalism, in contrast, holds that individuals share a common humanity and inherent equality, with differences in opportunity explaining differences in outcomes. Kincheloe and Steinberg describe this approach as depoliticized and decontextualized, emphasizing individual circumstance but shying away from examinations of collective oppression. Pluralist multiculturalism emphasizes difference and the importance of group-membership identities in a way that liberal multiculturalism does not but still depoliticizes issues. The ability of majority-group members to understand and appreciate minority-group traditions is emphasized, along with the ability of minority-group members to operate in the existing social hierarchy. However, Whiteness is maintained as the norm against which other cultures are viewed. Left-essentialist multiculturalism valorizes group identities, sometimes leading to static definitions of what constitutes an ‘authentic’ identity. It can result in an argument for a new hierarchy in which the currently dominant culture would become marginalized and a marginalized culture would assume a dominant role,

effectively changing the objects of oppression but not eliminating the oppression itself². Critical multiculturalism does not claim a neutral stance but is “dedicated to the notion of egalitarianism and the elimination of human suffering” (p. 24). It “is concerned with the contextualization of what gives rise to race, class and gender inequalities” (p. 25). With a concern for “the way power shapes consciousness” (p. 25), critical multiculturalists “illustrate how individuals produce, revamp and reproduce meanings in a context constantly shaped and reshaped by power” (p. 26).

A different categorization of multicultural approaches is described by Sleeter and Grant (2007). They also describe five approaches to multicultural education: teaching the exceptional and the culturally different, human relations, single-group studies, multicultural education, and multicultural social justice education which they explicitly link to critical multiculturalism. Teaching the exceptional and culturally different is characterized by modifying instruction to accommodate the needs of exceptional learners or culturally different students with a goal of helping them to assimilate into existing societal norms. The human relations approach concentrates on creating tolerance for difference, reducing stereotyping and prejudice, and developing skills to work with others who are different from oneself. Like Kincheloe and Steinberg’s (1997) liberal multiculturalism, this approach neither questions the existing social order nor examines power relations between groups within society. In contrast to the human relations approach, single-group studies view the existing social order as unfair and examine marginalized groups, often in a special unit or a separate course, with a goal of increasing their power within society. Sleeter and Grant identify somewhat different risks to this approach than do Kincheloe and Steinberg in

² Kincheloe and Steinberg are careful to point out that their critique of left-essentialist multiculturalism is not an argument against the utility of single-group studies.

considering left-essentialist multiculturalism, to which single group studies are related. Single group studies can be implemented in an “add-on” manner or in a separate track that leaves the mainstream unchanged. They may also result in prioritizing the concerns of one group while leaving other biases unquestioned. Multicultural education has as its goals the promotion of structural equality and cultural pluralism in society through a curriculum that includes many viewpoints and instruction that builds on students’ strengths. Sleeter and Grant offer examples of several critiques of multicultural education that are frequently encountered among proponents of the three forms already described. In addition to those critiques, they observe that little attention is given to class in multicultural education and that the approach “directs too much attention to cultural issues and not enough to social structural inequalities and the skills that students will need to challenge these” (p.179). Critical multiculturalism, or multicultural social justice education, also has the societal goals of promoting structural equality and cultural pluralism but draws attention to institutional oppression in ways that multicultural education does not and includes in its goals the preparation of students to identify and combat oppression.

Drawing from these descriptions and others I have composed a definition of critical multiculturalism for use in this study. It is comparable to the final category in each of the typologies above. Works by Kincheloe and Steinberg (1997), Kubota (2004), Nieto (1995), and Sleeter and Grant (2007) were used as immediate sources for this definition; however, a variety of other sources contributed to my understanding of critical multiculturalism and my selection of essential features common to various authors’ interpretations of critical multiculturalism.

Critical multiculturalism is distinct from other forms of multiculturalism that

describe, but do not systematically endeavor to change, the current social order (Sleeter & Delgado Bernal, 2004). It includes examination of racism and other forms of oppression as collective movements explicitly related to power (Kincheloe & Steinberg, 1997; Kubota, 2004, Sleeter & Grant, 2007). Like critical pedagogues its practitioners seek to raise the political consciousness of students and “to help students become active agents for social change” (Kubota, 2004, p. 37; see also Kincheloe & Steinberg, 1997; Sleeter & Grant, 2007). Critical multiculturalism is an approach to education that demands that teachers and administrators include students in making real, substantive decisions about curriculum, pedagogy, or governance (Nieto, 1995; Sleeter & Grant, 2007). It is a reflexive approach that helps students (and others) understand how membership in different social groups affects their life chances and society’s treatment of them (Kincheloe & Steinberg, 1997; Sleeter & Grant, 2007). It is also reflexive in the sense that it calls for “all knowledge, not only ‘official knowledge,’ be taught critically” (Nieto, 1999, p. 207; see also Kubota, 2004). It is pervasive throughout the curriculum and is for all students, including White students (Kubota, 2004). Critical multiculturalists work to understand culture in a non-essentialist sense, affirming the importance of students’ cultures and identity politics while simultaneously promoting a complex understanding of culture as a non-static, complex, social construct (Kubota, 2004; Nieto, 1999; Sleeter & Grant, 2007).

Critical multiculturalism as a Theoretical Framework

Using critical multiculturalism as a theoretical framework for research has implications for choice of topic, method of inquiry, and expected results. In choosing a topic the critical multiculturalist researcher will investigate relationships between oppression and power. It is a framework that suggests, though does not dictate, qualitative research methods

that allow the researcher to create rich descriptions of complex situations in collaboration with the research participants. The desired results of the research may include nontraditional goals such as increased consciousness of participants and social change in addition to the more traditional search for answers to research questions.

The examination of collective oppression and power relations in this study occurred through my analysis of the students' experiences. I attempted to do what McCarthy (1995) describes as "link[ing] the microdynamics of the school curriculum to larger issues of social relations outside the school" (p. 43). Similarities and differences among the cases provided an opportunity to observe patterns of difficulties that suggest larger issues. Although my classroom observations were focused on the student, the culture of the various Algebra 1 classrooms and the students' places in them provided another opportunity to understand the links between school practices and larger social issues, including attitudes towards language-minority students, content integration, knowledge construction, the creation of mathematical discourse, and patterns of inclusion in mathematical discourse.

This study contributes to existing literature that portrays some of the strengths of Latina/o students through an examination of the stressors students have faced and their resilience in the face of stressors. To assist in the task of linking events at the individual level to larger social issues (McCarthy, 1995) I use language and concepts from resiliency theory. Resiliency theory thus becomes a tool or organizational strategy to describe the stressors, responses, and supports of the student participants in the study. Once rendered visible, these factors can be analyzed in terms of collective oppression and power relations. I discuss the use of resiliency as a tool for critical multicultural analysis at the end of the section on resiliency.

Studies of Academically Successful Latina/o Students

Few studies use resiliency to study academically successful Latina/o students. Nor have researchers chosen to examine the experiences of academically successful Latina/o middle school students, focusing instead on high school students or adults. The studies presented here provide some insights into the challenges students have faced and the personal and environmental resources that have helped them face those challenges. I also include a brief description of Berry's (2002) dissertation research. Although focused on mathematically successful male African American students rather than Latinas/os, Berry's study provided both the inspiration and much of the structure for this study. Knowledge of his work therefore contributes to an understanding the current study.

Garza, Reyes, and Trueba (2004) conducted a qualitative study of three children of Latino migrant workers using invulnerability and resiliency as a framework. Barriers faced by their participants included frequent moves during part of their schooling, particularly elementary and middle school; poverty; the need to work in the fields to contribute to family income; substandard housing for some or all of the year; and limited access to learning materials, in particular books and computers. An incredible drive to succeed was identified as the most important personal characteristic contributing to each of the participant's success. All were also described as good at getting along with others and two were noted for their unselfish and caring ways. All three participants credited parental support as invaluable in their success, though one of the female participants noted that her parents did not understand her ambition and encouraged her to pursue technical school rather than college. Two of the three participants were also able to identify school personnel, two teachers in one case and a coach in the other, who had provided support and encouragement beyond what their parents

were capable of providing.

Cordeiro (1990) investigated 20 Mexican American high school students in two urban high schools who were both “at risk,” based on family SES and parental education level, and academically successful using the criterion that they were working towards an honors diploma. She found that participants were relatively isolated from the majority of Latina/o students in the schools by virtue of their placement into honors or magnet classes. Students felt they were different from the majority of Latina/o students in the school but identified themselves as Mexican American and for the most part chose friends who were also Mexican American and in the honors or magnet track. All the participants had achieved some early successes in school that led them to a positive orientation towards school and encouraged behavior leading to further success. Most were involved in one or more extra-curricular programs in school including sports, a mentorship program, and Upward Bound. All had found positive role models and supportive adults, mostly within the school system. Cheating was a common behavior; participants were particularly likely to cheat when they had little respect for the teacher and refrained from cheating in several classes in which the teachers took active steps to prevent it. The participants felt that they had better teachers than in the “regular” classes, meaning that teachers cared about them as people, were fair, were well-prepared to teach, and explained concepts well. Particular stressors that made school success difficult for some participants included monetary difficulties; lack of support from parents, especially for several of the female participants; and early difficulties with language for students who started school as monolingual Spanish speakers.

Duran (1998) studied the academic resilience of Latina/o students from a rural California community who attended elite universities. Of particular interest in the community

was the Migration and Adaptation In the Americas (MAIA) foundation, a local foundation that provided support to immigrant families with college-bound students. Participants reported early positive associations with and experiences in school, including early success. However, not being fluent in English and changing schools frequently as migrant farmworkers were noted as challenges by some participants. They described their friends as academically motivated. The student participants were described as having high self-efficacy by themselves and by others. Parents had been supportive of their children's school success, stressing the importance of school as a pathway to lifetime achievement and making sure they did their assigned homework. Although they were not generally involved at the schools or able to help with homework, they provided moral and emotional support. Two other individuals, a high school counselor and the deceased founder of MAIA, were frequently mentioned by students and parents as having been instrumental in the students' success in college. Duran used the term "education brokers" to describe these men who helped students adjust to the culture of higher education. Both identified promising students early in high school, provided experiences in high school that would help make the possibility of college seem real, helped in the college selection and application process, followed up on students while they were in college and after college graduation, and arranged for students to interact with students still in high school after they went to college to provide help and role models to the younger students. This created a "pipeline" that encouraged Latina/o students to think of college as a realistic possibility and provided them with support in getting into college and succeeding once there.

Persistence, self discipline, and being a hard worker were cited as personal characteristics that made success possible in Gándara's (1995) sample of 50 successful

Chicanos. Her study was conducted with 50 adults who had earned a Ph.D., M.D., or J.D. Participants reported that literacy had been important in their childhood homes. Nearly half had some sort of physical condition that made them feel isolated from their peers and some indicated that their academic work had received more of their attention because of this. Gándara notes that the majority of the participants were relatively light-skinned and did not have “classically Mexican” features (p. 89). Some of the participants reported that they had initially been placed into non-college-preparatory tracks and had had to fight to get into college preparatory classes. Once in such classes they were isolated from the majority of Latina/o students in the school. Many of the participants were in majority-White classes either because they attended majority-White schools or because of tracking in more heterogeneous schools. This led some participants to adopt separate school and neighborhood personas. Approximately half the participants identified a teacher, counselor, or other adult outside their family who had served as a mentor. Others identified older siblings who had attended college or adults outside the family or school, especially priests, who had served as mentors.

Flores-Gonzales (2002) studied Puerto Rican students and former students (dropouts) at an urban high school using identity formation as a framework. She compared factors that contributed to becoming a “school kid” to those that led to a “street kid” identity. The most academically successful students in the study were those who were somewhat isolated in a special “scholars” program, so that their school peer group consisted of other high-achieving students. Like the participants in Gándara’s study, some students found it necessary to maintain separate school and neighborhood identities. The successful students were involved in extra-curricular activities at school. Flores-Gonzales identifies several things schools can

do to encourage students to develop strong school-identities that encourage achievement: set clear and consistent standards and high expectations; help students develop relationships with teachers and peers that are characterized by caring, respect, and dignity; “offer diverse opportunities to engage in school that are based on interests and not on competition” (p. 156); help students develop multiple school-related identities; and give concrete and practical advice for realizing high but realistic expectations for themselves – including discussion of structural barriers they will face, such as discrimination.

Berry (2002) conducted a study with eight male African-American middle-school students, all of whom were successful in mathematics using the standard of placement into Algebra class in middle school to define success. Using phenomenological methods, he interviewed the students, their parents or guardians, and their Algebra teachers; administered a questionnaire to students; had students write a mathematical autobiography; and observed the students in Algebra class to understand their experiences. His group of participants consisted of pairs of students. Each pair was in the same Algebra class and consisted of one student who was in the NC MSEN Pre-College Program and one who was not. Berry analyzed the differences in the experiences of these two groups in addition to investigating the limitations that African American male middle school students enrolled in Algebra 1 encountered and the compensating factors they experienced. Berry found that parental support; self-empowerment; and participation in church activities, athletics, and special academic programs served as compensating factors in helping students overcome obstacles they encountered. Obstacles included “aggregated individual discrimination, cultural dissonance, and lowered expectations” (p. 140), which led teachers to overlook the students’ academic potential and interpret their behavior as problematic.

Much of the existing literature on successful Latina/o students includes participants from areas of the USA that have high Latina/o populations, such as California, Texas, other southwestern states, and cities such as Chicago and New York (e.g. Cordeiro, 1990; Duran, 1998; Flores-Gonzales, 2002; Gándara, 1995; Garza, Reyes, & Trueba, 2004). A finding common to several of the studies (Cordeiro, Flores-Gonzales, Gándara) was that high achieving Latina/o students attended classes in which a majority of the students were White due either to tracking or to attendance at a school that was majority White. This study provides information on the experiences of students in a state where, for the most part, Latina/o students are in districts with relatively low percentages of Latinas/os. Two schools in the study were majority African American and one was majority White. It focuses on a group not well-represented in the current literature—middle school students. Unlike previous studies it also has a disciplinary focus, highlighting the mathematical achievement of Latina/o students.

Resiliency

Resiliency theory is an attempt to understand positive outcomes for large numbers of people, particularly children, who experienced adverse conditions that are frequently associated with negative outcomes (Rutter, 1987). Resiliency research has attempted to identify personal characteristics, familial protective factors, and other social factors that promote positive outcomes in spite of prolonged or severe psychological stress (Werner, 1984). Resiliency is not so much a characteristic that some people have and others do not as it is a response to stressors. An individual may be resilient in the face of some types of stressors but not others (Rutter, 1987); at one stage of life but not another (Rutter, 1984;

Werner, 1984); or only up to a certain point, beyond which her³ ability to cope is overwhelmed (Werner, 1984). Some authors (e.g. Brown, D’Emidio-Caston, & Benard, 2001; Henderson & Milstein, 2003) compare resilience research to wellness models of health care, contrasting it to the search for risk-factors that they compare to pathology models of health care.

Resilience theory has grown to include various subspecialties, including academic resilience. Academic resilience focuses on the ability of some students to succeed academically despite life and school circumstances that render them “at risk” for school failure. Theorists focused on academic resilience analyze personal characteristics and environmental factors that influence a person’s resiliency, as do more general resilience researchers. While the general psychological literature focuses on personal, familial, and extra-familial levels, school-level factors are often included as another level in the research on academic resilience.

For the purposes of this study I rely largely on the language and structure used by Benard (2004). Henderson and Milstein (2003) also offer a compelling model of academic resilience, based partly on Benard’s work. My decision to emphasize Benard’s approach was largely influenced by its utility as a tool for analysis. Henderson and Milstein’s work is more prescriptive than analytical, comprising a series of strategies schools can employ to enhance the resilience of their students. Absent in Benard’s model and of particular note in Henderson and Milstein’s model is an emphasis on strategies that can mitigate risk factors in the environment in addition to strategies for increasing students’ resilience if and when risk factors are encountered.

³ When writing in generic terms I use the feminine forms of third-person, singular pronouns unless there is reason to assume the person is male (as would be the case when speaking of a father, for instance). ‘She’ and ‘her’ are inclusive and should be understood to mean “She or he” and “Her or his,” respectively.

Benard's (2004) structure is based on four domains: the individual, the family, the school, and the community. She identifies factors that are associated with resilience in each of these domains. At the individual level these factors are four personal characteristics: social competence, problem solving, autonomy, and sense of purpose. She identifies three protective factors that operate in each of the other three domains: caring relationships, high expectations, and opportunities to participate and contribute. I have portrayed this structure as three overlapping circles representing the family, the school, and the community with the individual at the center (see figure 1). Richman, Bowen and Woolley (2004) employ an ecological perspective in their description of resilience and note the importance of the interactions between the domains, or microsystems, of family, school, and community in addition to the factors within each domain. These interactions are represented by the overlap between those domains. I describe the personal characteristics and protective factors in the sections that follow.

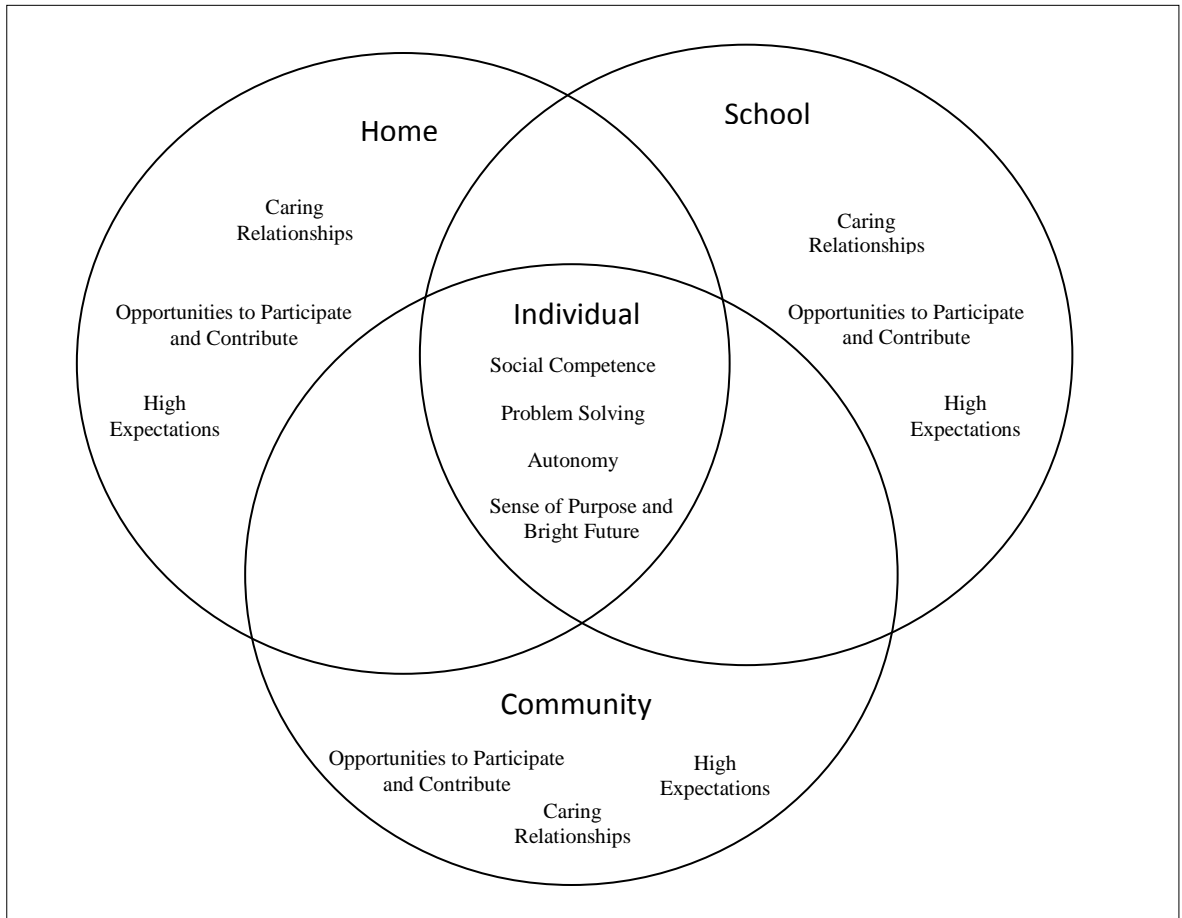


Figure 1: Personal characteristics and protective factors contributing to resiliency. Based on Benard, 2004.

Personal Characteristics of Resilience

Benard (2004) describes four categories of personal strengths that are associated with resilience: social competence, problem solving, autonomy, and sense of purpose. These are not generally agreed-upon categories in the literature, however Benard reviews other literature and provides a summary of terms used by other authors, many of which can be reasonably compared to one of her categories. Several strengths identified by other researchers did not fit into Benard’s four categories. They included: need for safety, justice, and physical well-being or health (Bernard, Appendix A). Although these are not part of Benard’s framework they may be factors that contribute to student’s success.

Social Competence

Social competence begins in infancy, when babies with easy temperaments elicit more positive reactions from caregivers (Benard, 2004; Werner, 1984). This ability to elicit positive responses can also be seen in some resilient children's parent-like relationships with other adults, including other family members, neighbors, clergy, and teachers (Benard; Werner, 1984; Wolin & Wolin, 1993). While the presence of a caring adult may, in part, be due to chance, Wolin and Wolin note that resilient children engage in "active recruiting" (p. 111) for such parent substitutes.

Communication skills are a central part of social competence and facilitate the formation of positive, caring relationships. Benard (2004) includes in her definition of communication the ability of youth from non-dominant cultures to "code-switch." This enables them to maintain their cultural identities while using the dominant culture's forms of communication when necessary. Social competence also involves empathy and caring and the related skills or characteristics of compassion, altruism, and forgiveness. These traits facilitate relationship building and maintenance. Empathy, in particular, "helps form the basis of morality, forgiving, and compassion and caring for others" (Benard, p. 15).

Other terms associated with social competence include relationships, interpersonal, need for love/belonging, empathy, trust, and social skills (Benard, 2004, Appendix A).

Problem Solving

The essential elements of problem solving Benard (2004) identifies are planning, flexibility, resourcefulness, critical thinking, and insight. Werner (1984) describes one of the central characteristics that resilient children have in common as "an active, evocative approach toward solving life's problems, enabling them to negotiate successfully an

abundance of emotionally hazardous experiences” (p. 69).

Other terms associated with problem solving include insight, need for challenge and mastery, intellectual, cognitive, logical-mathematical, linguistic, planning, common sense, and wisdom (Benard, 2004, Appendix A).

Autonomy

Positive identity is described by Benard (2004) as the basis for autonomy. Beyond a positive and strong sense of self, there are several other factors that Benard includes in her definition of autonomy. Internal locus of control, initiative, self-efficacy, and mastery are related concepts that have in common a sense of reliance on oneself to effect changes and a belief that one can do so. Adaptive distancing “involves emotionally detaching oneself from parental, school, or community dysfunction, realizing that one is not the cause of and cannot control the dysfunction of others and that one’s own future will be different (Beardslee, 1997; Beardslee & Podorefsky, 1988; Chess, 1989; Rubin, 1996)” (Benard, p. 25). Benard characterizes resistance as a form of adaptive distancing and in particular references the concept of “accommodation without assimilation” as an important form of resistance for Latina/o and African American youth. Self-awareness, or mindfulness, is another factor in autonomy and in it Benard includes the ability to reframe experiences, which Werner (1984) describes as “a tendency to perceive their experiences constructively, even if they caused pain or suffering” (p. 69). Finally, humor is a component of Benard’s definition of autonomy.

Other terms associated with autonomy include independence, need for power and respect, self-control, intrapersonal, positive identity, self-management, self-esteem, confidence, and independence (Benard, 2004, Appendix A).

Sense of Purpose and Bright Future

Benard (2004) includes in her definition of sense of purpose and bright future the following: goal direction, achievement motivation, educational aspirations, special interests, creativity, imagination, optimism, hope, faith, spirituality, and sense of meaning. Werner (1984) notes that special interests or hobbies were an important source of solace for children in her studies and that children were not necessarily especially talented but engaged in an activity that “gave them a reason to feel proud” (p. 69). Werner includes the “ability to use faith in order to maintain a positive vision of a meaningful life (O’Connell-Higgins, 1983)” (p. 69) in the four central characteristics shared by resilient children. Interestingly, although Werner states that resilient children “manage to believe that life makes sense, that they have some control over their fate, and that God helps those who help themselves (Murphy and Moriarty, 1976)” (Werner, p. 70), she credits families with having imbued children with these beliefs rather than describing them as personal characteristics.

Other terms associated with sense of purpose include morality, need for meaning, self-motivation, spiritual, existential, future orientation, and optimism (Benard, 2004, Appendix A).

Environmental Protective Factors Promoting Resilience

As with the individual characteristics of resilient individuals, authors vary in their descriptions of environmental protective factors that promote resilience, although they agree that events and environmental factors play a role in encouraging resilience. Benard (2004) identifies caring relationships, high expectations, and opportunities to participate and contribute as protective factors. Caring relationships are characterized by compassion, active interest, trust, and unconditional love. High expectations are “clear, positive, and youth-

centered” (Benard, p. 45) and are based on the strengths and aspirations of a youth rather than on desires of an adult for the youth. Benard includes in this category regulatory expectations, including rule-setting and discipline, and expectations for high achievement. Opportunities for participation and contribution include participation in cooperative activities, creative expression, and opportunities to problem solve and participate in decision making. “Giving back” to one’s family, school, or community through service can be an important part of participating and contributing. All three protective factors are at work in families, schools, and communities.

Henderson and Milstein (2003) suggest a total of six actions schools can take to build resiliency. Their first three actions mitigate risk factors in the environment and the latter three are based on Benard’s work and build resiliency: (a) increase prosocial bonding; (b) set clear, consistent boundaries; (c) teach life skills; (d) provide caring and support; (e) set and communicate high expectations, and (f) provide opportunities for meaningful participation. They emphasize factor (d) “[b]ecause it is the most critical of all the elements that promote resiliency” (Henderson & Milstein, p. 13). Note that Benard (2004) includes the setting of clear, consistent boundaries in her high expectations category.

Richman, Bowen, and Woolley (2004), like Benard, suggest three types of protective conditions: stability, load balance, and participation. Two of these, stability and participation, parallel Benard’s caring relationships and opportunities to participate and contribute, respectively. Load balance refers to the balance in the environment between care and support on one side and risk and stress on the other, modulated by the individual child’s ability to cope with a given situation. They expand upon Benard’s environments in which these factors operate, including peers as well as family, school, and community (Richman, et. al; Wang,

Haertel, & Walberg, 1999).

All the authors I read emphasized that protective factors need to be understood in relation to events and to one another. Rutter (1987), for example, draws an analogy between protective factors and vaccines, pointing out that a particular factor may only act in a protective manner in response to some event and otherwise be irrelevant, just as the protection a vaccine offers becomes necessary only if a person comes in contact with the disease vector. Benard (2004) is careful to point out that the three protective factors she outlines are components of a process and that a balance between them must be present for them to be effective:

For example, caring relationships without high expectations or opportunities for meaningful participation foster dependency and co-dependency—not positive youth development. High expectations without caring relationships and support to help youth meet them are a cruel “shape-up or ship-out” approach associated with negative outcomes. And, one more example, caring relationships with high expectation messages but no opportunities for a child’s active participation and contribution create a frustrating situation that blocks the natural process of youth development. (p. 44)

Critical Multiculturalism and Resiliency

Both critical multiculturalism and resilience theory are concerned with the relationship between oppressive circumstances and agency or movement towards a better future. Two essential features of critical multiculturalism are the analysis of oppression and helping members of oppressed groups develop the agency to change oppressive circumstances, often through cooperative action. Critical multiculturalism uses conscious and deliberate methods while resilience is a function of “innate self-righting tendencies and environmental protective factors” (Benard, 2004, p. 10). Despite the innate nature of resilience for the resilient individual, a researcher’s effort to understand resilience is conscious and deliberate. It is an analysis of personal agency. Wolin and Wolin (1993) write

specifically for and about survivors of troubled families, focusing on the personal characteristics that promote resilience. Their book is a workbook for such survivors and they lead the reader through a process of first naming and then reframing her life's events to revise her self-image from "a passive victim to one of an active resistor" (p. 21). This is reminiscent of the goals of recognizing oppression and actively working to reduce oppression in critical multiculturalism, though on a different scale.

To better understand the success of Latina/o students still in middle school, I used the following two questions to guide my study:

What educational and environmental stressors have Latina/o middle school students enrolled in Algebra 1 encountered?

What protective factors have contributed to the resiliency of Latina/o middle school students enrolled in Algebra 1?

CHAPTER 3: METHODOLOGY

As described in the preceding chapter, there is significant evidence that our schools are failing to educate Latina/o students as effectively as they do students in general. Research into why Latina/o students do not score as high as the general population, on average, has tended to approach the problem with a deficit focus. That is, researchers have identified characteristics of the students, their families, or their culture to explain the difference in achievement. This study contributes to a growing body of literature that examines the experiences of successful students to try to understand what resources they drew upon. The specific questions guiding the study were:

What educational and environmental stressors have Latina/o middle school students enrolled in Algebra 1 encountered?

What protective factors have contributed to the resiliency of Latina/o middle school students enrolled in Algebra 1?

To develop an understanding of both the protective factors and the stressors experienced by mathematically successful Latina/o middle school students, I employed a collective case study design using grounded theory. According to Creswell (2007), “*case study* research involves the study of an issue explored through one or more cases within a bounded system” (p. 73). Utilizing individual cases provides a means to analyze the voices of the study participants, to record their lived experiences, and to identify protective factors and stressors each individual experienced. Studying several cases provides different perspectives on the issue (Creswell, 2007) and may reveal patterns that help link the individual experiences to larger social issues. I used grounded theory in developing my list of stressors

and protective factors. According to Marshall and Rossman (1999), in grounded theory “the literature review provides theoretical constructs, categories, and their properties that can be used to organize the data and discover new connections between theory and real-world phenomena” (p. 52).

Merriam (1988) concludes that “the following four characteristics are essential properties of a qualitative case study: particularistic, descriptive, heuristic, and inductive” (p. 11). This study meets these criteria. Its focus is on the particular phenomenon of Latina/o students who are taking Algebra 1 in middle school. The end result is a rich description of the educational experiences of the students including protective factors and stressors they have encountered. This description is heuristic, that is, it provides new understandings of the experiences of mathematically successful Latina/o middle school students for readers. Finally, conclusions or generalizations were reached inductively through an analysis of the data.

Context

The study was conducted in three middle schools in a southeastern state in the USA. It is one of several states noted as having newly growing Latina/o populations (Calderón, 2007). This growth is evident in the school population: in the 2002-2003 school year 6% of the students in the state’s public schools were Latina/o; in 2006-2007 that proportion had increased to 9% (Education First, 2007). The proportion of Latina/o students varies from district to district. Two schools were in one district and the third in another; the districts were 16% and 7% Latina/o, respectively.

Participants

The participants in this study included students, teachers, and parents or guardians.

Although the students were the primary participants and their stories are those explored, analyzed, and presented, the selection of participants began with teachers.

I contacted middle school mathematics teachers with whom I was acquainted and some with whom I was unacquainted but who were recommended by faculty or other graduate students. My initial communication, an e-mail, gave a brief description of the proposed study and requested that any teachers who were themselves willing to participate and had Latina/o students in their Algebra 1 or more advanced mathematics classes contact me. Of the 20 teachers contacted, 5 responded that they had no Latina/o students in their classes, 4 were no longer teaching Algebra, 3 had one or more students in their classes and were willing to participate, and the remainder did not respond to my initial contact or a follow-up. A communication was also made on my behalf from an administrator for a Mathematics and Science pre-college program to teachers of students in that program. There was no response to that communication. During the initial contact phase I also sought, and was granted, approval from school districts and principals to conduct research in their schools.

I contacted the three teachers who responded positively, met with each of them, obtained their consent to participate, and gave them assent and permission forms to distribute to their students. Potential participants were identified by their teachers through criterion-based measures, i.e. potential participants must be Latina/o middle school students who are taking or have completed Algebra 1. Participant and parent consent were sought for students who meet the criteria based on teachers' assessments of students in their classes. All six students identified by the teachers returned the permission forms with parent signatures and themselves assented to participate in the study. One teacher with two students in his classes

subsequently withdrew his permission to observe in his classroom. No data were collected with one of the students. Student interviews had begun with the other student when permission to observe was withdrawn and student and parent interviews were completed with this participant and his mother. The incomplete data for this student were not included in data analysis.

A second wave of recruitment was conducted in one district through a contact person identified by the chief academic officer in the district office. The contact person, who coordinated both the English as a Second Language and the Academically and Intellectually Gifted programs, identified students who met the inclusion criteria and gave me contact information for their teachers. Two additional student and teacher pairs were identified. I met with both teachers, obtained their consent, and gave them assent and permission forms to give to the students. One of the teachers identified an additional student in her class whom the contact person had not identified. Assent and permission materials for that student were provided at a later date. No consent was received from one student but two students in the same classroom returned their forms and were included in the study.

A total of six students, three teachers, and seven parents participated in the study. The students included two girls and four boys. Five of the students were in eighth grade, the sixth was in seventh grade. One student was the only Latina/o student in the class, three were in a class together and were the only Latina/o students in the class, and two were in a class that included one other Latina student.

The initial use of teachers with whom I was already acquainted and my decision to recruit in a limited geographic area make this a form of convenience sampling. Miles and Huberman (as cited in Marshall & Rossman, 1999) note that convenience sampling “[s]aves

time, money, and effort but at the expense of information and credibility” (p. 78).

Unfortunately the scope of this project necessitated some degree of convenience sampling.

Data Collection

Data sources included interviews, observations, a questionnaire, students’ mathematical autobiographies, and a review of documents. In this section I briefly describe each of the data sources. Following descriptions of the sources, I provide a summary of procedures I used during data collection.

Sources

Using Berry’s (2002) interview protocols as a starting point, I developed protocols for a student questionnaire, three student interviews, a parent/guardian interview, a teacher interview, and a mathematical autobiography for students (see Appendices A-E). In addition to data gathered based on these protocols, I observed the Algebra class of each student four times over the course of at least four weeks. These interview and observational data were supplemented by a review of students’ cumulative folders.

Questionnaire

The questionnaire included two sections: one asking about the student’s perceptions of herself⁴ as a mathematics student and as a Latina/o at her school and the other asking for general information about student and her family (e.g. number of adults and other children in household, language used in the home, her scholastic achievement compared to other children in household, parents’ highest grade completed and occupations). The questionnaire was completed by all students from whom consent was received. Questionnaire responses were used as a data.

⁴ See earlier note about pronoun usage.

Student Interviews

Two open-ended, semi-structured interviews were conducted with each student based on pre-defined interview protocols. The third interview was based on questions raised by earlier interviews and observations. The interviews were an attempt to get each student's perspective on her mathematical achievement, reasons she has succeeded, things that have been difficult, and how she feels about mathematics. The student interview included specific questions about teacher caring and whether teachers encouraged the student to go beyond the minimum necessary. Parent's roles and availability to help with homework, assignments and work-styles that the student preferred, and peer reactions to the student's high mathematics achievement were addressed. For students whose first language was Spanish, the interview also included questions about learning English and how they felt the process of learning English had affected their mathematics achievement.

Interviews were conducted in the student's home or in an empty classroom or conference room during the student's lunch period at school. When possible, interviews were staged in three sessions. Due to student activities, this was not always possible.

Mathematical Autobiography

The autobiography was conducted as an interview and included recollections of significant memories related to mathematics, being "good at math" or identified as good at math, and the best and worst mathematics teachers the student had had. It provided information about each student's perceptions of her mathematics experiences and prompted students to think about their experiences with mathematics. I sat with each student as she read and responded verbally to the autobiography prompts, often asking follow-up questions.

Parent Interviews

One open-ended, semi-structured interview was conducted with the mother or, in one case, both parents of each student based on a pre-defined interview protocol. I solicited the parent's views of her student's mathematical history in school. This included whether or not the student has performed up to her potential; whether she has had good teachers; and parental expectations, history of helping the student, and reactions to the student's performance. Four parent interviews were conducted in Spanish, one partially in Spanish and partially in English, and one entirely in English. Interviews conducted in Spanish were first indexed in Spanish. I translated the answer paraphrases in each index prior to coding.

Teacher Interviews

One open-ended, semi-structured interview was conducted with each student's Algebra 1 teacher based on a pre-defined interview protocol. These interviews included three main sections. These sections focused on the teacher's account of features of the overall school culture, her own classroom, and each of the participating students. Teachers were asked to explain the procedure for placing students in Algebra 1 at the school, describe trainings and resources available to teachers in the school to help them meet the needs of Latina/o students, and discuss opportunities for collaboration with other teachers in the school. Classroom-level questions addressed the teacher's views on the role of the teacher and student in mathematics classes, opportunities for students to participate in her classroom, her usual means and frequency of communicating with students' families, her general expectations for students in her classes, and how her algebra class compared to other mathematics classes in terms of the race and gender of students in it. Student-related elements of this interview included having the teacher describe strengths and weaknesses she

perceives in the student, identify any variations from the usual placement procedure that led to the student's inclusion in Algebra 1, reflect on teaching strategies that seemed particularly effective or ineffective for the student, and describe the student's interactions with peers and the teacher herself.

Observations

Four one-period observations of the student in mathematics class were conducted at approximately one-week intervals. The observations concentrated on the student's participation in the classroom culture and her work and socializing habits in the classroom. Questions guiding the observations included: What is student like in class? How does she interact with the teacher and with other students? How does she participate in mathematical discourse in the classroom? Is she prepared with necessary materials and homework completed?

Review of Documents

A review of students' cumulative folders was conducted to provide information about grades, course placements, end of grade assessment results, referrals to special services including ESL services, attendance history, discipline history, number of schools attended, and teacher comments.

Procedures

Each interview with a student, parent, or teacher was audio-recorded in cases where I had the participant's permission, and I took notes during all interviews. One teacher preferred not to be audio-recorded. Observations were not tape-recorded, and I relied on extensive note-taking for a record of the observation. Notes included details such as the setting, the participant's affect and body language, and my own reactions or thoughts during the

interview (Marshall & Rossman, 1999). For the interviews that were recorded, the notes also provided a back-up in case of any technical problems with the recording. Interviews were indexed shortly after the interview to provide “a chronological description of the questions [I] asked and a paraphrase of the consultant’s responses and spontaneously mentioned topics” (Holland, 2005, p. 4). Selected portions of interviews were transcribed for careful analysis or use in writing up the research.

Data Analysis

Analysis was on-going with collection of data as I use the information gleaned from one phase to inform my questions and observations in the next (Marshall & Rossman, 1999; Merriam, 1988). The process of analysis began as early as the note-taking during interviews and observations, as I noted interesting comments or actions and my own reactions to the events. As I generated tentative theories I went back to the data to search for alternative explanations (Marshall & Rossman).

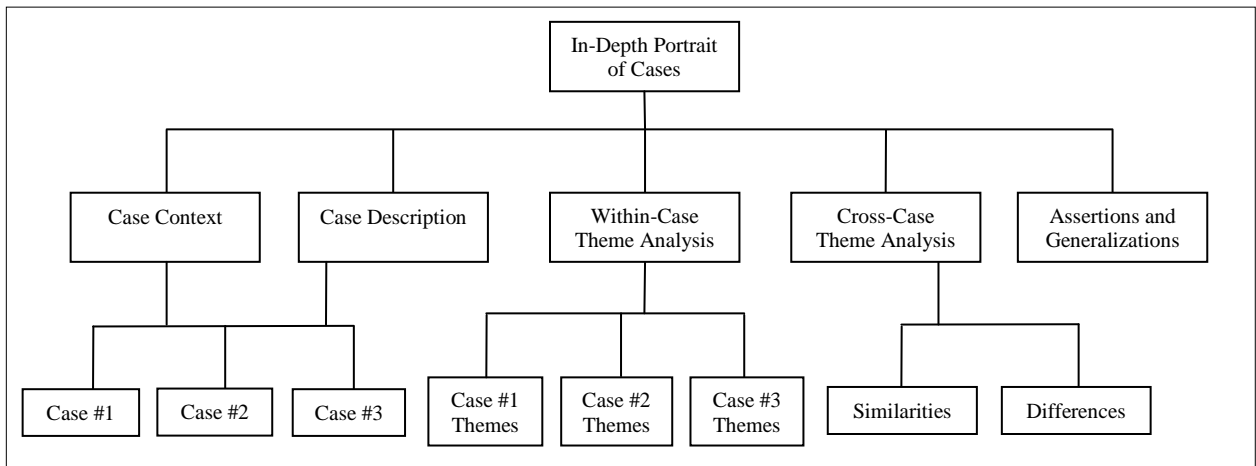


Figure 2: Template for Coding a Case Study (Cresswell, 2007, p.172)

As I gathered data I indexed and sorted the data. Data sorting, storage, and analysis were electronic. Data were stored in folders for each student participant. I used Atlas.ti version 5.5 to facilitate the coding of the data.

The main data analysis phase began as I finished or nearly finished data collection with each participant. I started by reading and rereading each data document to develop categories and themes (Marshall & Rossman, 1999). These categories were generated by ideas that arose from the data and by constructs in my theoretical framework (Patton, cited in Marshall & Rossman); initial categories and themes were identified and named based on the data, not according to pre-existing theory. Based on these categories I drafted a student portrait for each student, including the student, parent, and teacher perspectives.

The initial portrait drafts began simply as an attempt to capture elements in the students' stories that portrayed the students' important statements regarding self, family, friends, teachers, school in general, and mathematics. After writing two "student voice" sections I concluded that an outline would help me organize the pieces so that there was some coherence among the portraits. Accordingly, I rearranged the two pieces I had already written and wrote an outline describing the topics of each paragraph. The outlines developed as I wrote additional portraits; prominent features in each new student's data dictated new elements for the outline. As new elements were added to the outline, I returned to earlier students' portraits; reread the students' interview transcripts; and incorporated their comments, if any, on the topic that was newly added into their portraits. My strategy for the parent, teacher, and researcher sections was similar except that I anticipated the utility of an outline earlier in the process. The early portraits unintentionally focused on positive features, leading me to go back to the data with the specific intent to note possible stressors. These stressors were added to the student portraits.

As the portraits neared completion, I began to look across cases and identify themes that were common to two or more students. This took the form of a matrix of stressors and

protective factors by student. The process of completing the matrices included rereading both the portraits and portions of the raw data to determine whether or not there was evidence that a student had experienced each stressor and protective factor. Any such evidence that had not been included in the portrait was added. Thus, the portraits developed throughout the data analysis process.

Using resiliency theory helped me identify personal strengths that students had brought to bear on their mathematics achievement. It provided a structure for examining how other individuals had helped the student. In some cases, those instances of helping pointed to stressors.

Table 3: Summary of Methodology

| Question | Data Source | Analytical Procedures |
|--|--|--|
| What educational and environmental stressors have Latina/o middle school students enrolled in Algebra 1 encountered? | Student interviews Parent interviews Teacher interviews Observations Student autobiographies Student cumulative folders | Coding of observations and interviews; grouping stressors into appropriate categories; cross-case analysis |
| What protective factors have contributed to the resiliency of Latina/o middle school students enrolled in Algebra 1? | Student interviews Parent interviews Teacher interviews Observations Student autobiographies | Coding of observations and interviews; grouping protective factors into appropriate categories; cross-case analysis; comparing grounded categories with resilience theory categories |

Trustworthiness

Several features in the research design increase the trustworthiness of the results. There were multiple methods of data collection that provided methodological triangulation (Glesne, 1998; Stake, 1995): observations, interviews, and document review. The inclusion of students, teachers, and parents provided a form of source triangulation (Glesne, 1998). Prolonged engagement was achieved through multiple observations and multiple student interviews (Glesne; Merriam, 1988). My analysis included a search for negative cases, “unconfirming evidence” (Glesne, p. 32), and alternative explanations. The search for alternative explanations led to my conclusion that the identification of stressors and protective factors must be culturally relevant.

Role of the Researcher

In qualitative research the primary research instrument is the researcher herself (Marshall & Rossman, 1999). Cresswell (2007) includes in his list of what makes a “good” qualitative study a focus

on how individuals’ culture, gender, history, and experiences shape all aspects of the qualitative project, from their choice of a question to address, to how they collect data, to how they make an interpretation of the situation. In some way—such as discussing their role, interweaving themselves into the text, or reflecting on the questions they have about the study—individuals position themselves in the qualitative study. (pp 46-47)

This section includes autobiographical information to help readers understand how I have come to this research and who this qualitative research instrument is.

Mathematics, teaching, and social activism have been significant interests for most of my adult life. My teaching experience described in the introduction and coursework in graduate school brought the three together. Personal contacts including coworkers and former students and the incredible growth in North Carolina’s Latina/o population led me to focus my attention on the experiences of Latina/o students.

Since beginning graduate school, two major life events have increased my interest in and commitment to understanding and, hopefully, improving the school experiences of Latina/o students. First, I have married a Mexican-born man and, through him, become aunt to many Mexican American students and pre-schoolers whose future in the US school system is precarious. Second, we have a daughter whose future is somewhat less precarious than that of her cousins but whose name will immediately signal teachers that she is Latina, generating assumptions before she even enters the classroom. My family ties to Mexican Americans and my concern for my daughter’s school experience have deepened my commitment to working toward just and equitable education for all students, including Latina/o students.

Through friends, coworkers, former students, and family connections I have first and second hand knowledge of life in the USA for a number of immigrants. They are mostly, but not exclusively, Mexican Americans. I have been a guest in various friends' and family members' homes, hosted them in my home, had more extended visits with in-laws in the USA and in Mexico, worked side-by-side in a commercial kitchen with Latina/o coworkers, and had conferences with students and their parents. I believe this knowledge was useful to me in my role as researcher but had to guard against making assumptions based on my existing knowledge.

My training throughout high school, college, and my masters work in mathematics emphasized abstraction and the importance of objectivity in scientific work. Coursework, readings, and conversations outside class during my doctoral work in the School of Education have led me to conclude that there is value in the particular as well as the abstract, that people are more than the sum of their traits even in a research setting, and that all knowledge is situated and partial – allowing for no objectivity. Concluding this is easier than putting it into practice; I have found myself fighting, not always successfully, to consider things from a human perspective rather than trying to be a detached observer and the urge to assign value to abstraction. The fight is further complicated by the lack of devoutness in my conversion to qualitative research; I am now skeptical of everything.

A friend of mine once tried to explain non-observant, Jewish Israelis' attitudes toward religion by telling me that, "The synagogue that everybody doesn't go to is orthodox, not reform." In the same way, for me, and for many other White people I know, the lifestyle to which mine is an "alternative" is an idealized, and demonized, version of a WASPish, middle-class lifestyle. Though I make deliberate choices not to follow it, I have internalized a

definition of that WASPish, middle-class lifestyle as the norm in the USA. This definition is reinforced by the mainstream media and many of my friends and, as a result, I find myself unconsciously using my understanding of WASPish, middle-class standards when viewing the world, even when I disagree with those standards.

CHAPTER 4: STUDENT PORTRAITS AND ANALYSIS OF DATA

This chapter includes the descriptive portraits of the student participants and findings. The first section is devoted to the descriptive portraits, presented in the order in which students joined the study by returning their permission forms. I first summarize important points raised in the student, parent, and teacher interviews. Although the interview summaries are written in the first person from the perspective of the interviewee, these sections include both direct quotes and paraphrases. The material has been substantially edited and rearranged for readability and to achieve similar organization across students. They are intended to give a sense of important points discussed in the interviews, not a full account. For each student a section with my own observations follows the student, parent, and teacher perspectives.

Following the descriptive portraits are brief descriptions of each of the three classrooms I observed. The chapter concludes with sections on stressors the students experienced and protective factors that supported them.

Student Portraits

S1 Diana

Diana's Perspective

“This is my strongest subject; it’s perfect for me. It’s like me and math are awesome.”
[S1-Bio-08-11-14]

The most important thing you should know about me is that I can’t live without music. Or math, really. I love math – numbers and equations. I know some people are like, “Oh, school, math, algebra – ugh!” but I love it. At home my dad and I will challenge each

other to solve problems. Even when I was little, he taught me to count and so I knew how to count before I started school, so I was always a little ahead. Some people might say “nerd” but it’s my favorite thing; I always look forward to math class at school. I feel great to be one of the only Latinas on this team who’s in advanced math. It’s like, Wow, all this learning and studying is worth it because I’m in advanced classes. Everything around me has helped me, like my parents and everything, because they push me to do good and my parents who tell me that if you do good you’re going to get rewarded. I feel very proud to be asked to be in this study. I like that! A lot of people are prejudiced; I’ve run across that before. People are like, I had no idea you were Hispanic or Latina.

I came to school speaking English, so I was never in ESL. I was born in Guatemala and I’m adopted. My parents first taught me a little bit of Spanish but they talk to me in both languages. My mom mostly tries to speak to me in Spanish and my dad speaks to me mostly in Spanish and sometimes in English. A lot of the parents around here, they haven’t had a chance to learn English so they can’t teach their children and their kids end up in ESL. I’m very thankful that both of my parents could learn English and everything that they know.

My expectations for myself as far as math class goes are that I should complete all my work, enjoy it, and do my best because it’s really going to help me in high school and later. If there’s something I don’t understand at school then I ask the teacher or, if we’re working in a group, I’ll ask a friend. If there’s something I don’t understand on the homework I might ask my mom but usually I’ll finish the rest of my homework and then leave it out so I can ask my dad when he gets home. If we’re having a test and the teacher didn’t give us a review sheet then I’ll make up some flashcards for myself and make sure I know how to do the problems.

I’ve had lots of good teachers; I’ve learned from all of them. My fourth grade teacher

was really good; he gave me a special workbook to do during math and it was harder but I finished it. One thing I like is that, ever since elementary school, they've realized I'm on a higher level in math and have given me advanced work to do. I'm not as sure what my current teacher thinks about my ability. I like that she is good at explaining things so they make sense. When you don't understand something, she doesn't just tell you, she makes you make sense out of it. She makes it fun.

I can't really think of a time that I had any problems in school. Maybe in second grade; I was in a dual-immersion class, Spanish and English, and it was first and second grade together. They really focused on the first graders, so I didn't get a lot of attention. And they told me I did my work too quickly and I should slow down, even though I was doing it right. My mom came to the school and some of the other teachers told her that another teacher was really good, so they moved me to that class.

The people I hang out with are people I've known for a long time. We go to the mall or movies and stuff. They're mostly good students, too. My god brother was in my class one year and we would sometimes have sleepovers. That was a problem for a little while because we would forget to do our homework, but eventually we figured it out and got our homework done first. He's in a different school now, but I still see him all the time. He's really good in reading and math, so sometimes when I don't understand something in my homework I'll call him, too.

I do activities at school and also outside school. I'm in the jazz band at school and I just got onto the girls' soccer team. I also took piano lessons but now I've graduated from that. I'm in a summer program that also has tutoring once a week. It's fun, and even though it's mostly for students who need a boost they do some other activities for those of us who

are doing well. We've been doing a lot of poetry. I had some friends tell me I should join "Battle of the Books" but I like to do my reading on my own. Time management is a little bit of a problem for me, so I know that if I had to read so many books in so much time I might not do it.

The advice I would give to a student who is struggling is first, focus. You can't be all over the place, that's not helpful. If you don't understand something then you need to ask for help. You can't be embarrassed. Even if everyone else understands and gets the material there comes a point where you have to be willing to ask for help and you have to be willing to accept help. You have to put your best into it; you have to give it your all. You can't just sit in class and get an A, you have to work for it.

*Parent Perspective*⁵

Diana is very talkative. She's also very independent and has been since she was little. She is funny and likes to entertain people. That sometimes causes problems in school. Sometimes her teachers say that even though she talks too much they don't ask her to be quiet because what she says is interesting. I (Dad) worry a little because I think she needs help learning more self-control. Middle school has been harder because she's started to get interested in electronics like an I-pod and chatting on the computer, so we've had to make a rule about no electronics until your homework is done. Lately we've even taken her I-pod away during the week until we get a progress report that doesn't mention too much talking.

She's doing well in school, although she could do better if she really pushed herself. She's always done well. She has the ability to get all As but as it is she has a B here and

⁵ Both of Diana's parents participated in the parent interview. Their comments have been combined and many comments were echoed or repeated by both parents at different points during the interview. In instances when one parent is describing something she or he did I have identified which parent is "I" in that sentence.

there. In math she's really advanced, but she doesn't make a big deal out of it. We didn't try and get her to jump a grade or anything; she was selected by her teachers and we knew she could handle the advanced class. She's more advanced than some of her friends and sometimes she'll say she's not taking the same class if they're talking about what they're doing in math, but she doesn't bring it up. We want her to go with the flow, not show off. Sometimes she doesn't understand something on her homework, but she'll ask her father and they'll figure it out. She never goes back to school with any doubts.

She hasn't really had many problems in school but we are always paying attention and talk to her if it seems like something is wrong. I (Mom) don't talk with her teachers every week like in elementary school, but if there's a bad grade or progress report I'm on the phone to the teacher right away. At the beginning of sixth grade she had some problems with a girl bullying her because she's so small; we told her to try not to respond and stay away from her and it got better – we didn't have to go to the school or anything. But we were monitoring the situation. In elementary school she had a long-term substitute because her teacher went on maternity leave. Diana complained that the teacher was mean and had kept her in at recess. I (Mom) went to the school and talked to her, and it turned out she was very old-school and strict but I didn't think there had been any unfairness. So we sat down and explained to her that the rules were different now and that she needs to learn how to obey the rules because sometimes that's how it is in life – like if you have a different boss then you have to adapt to that person's rules. We want her to be ready for life and to be independent. Time management and organization can be a problem for her, so I (Dad) sat with her and we came up with a system for her.

My mom (Mom) was 45 when I was born and she couldn't always do all the things

she wanted to because of her health. My mom solved things for me all the time - now you have to go through channels, but then if someone was bothering me at school my mom would have just gone up to the student and told them to leave me alone. Now you'd talk to the teacher about it. My mom was overprotective and I think it made me insecure. Things changed when my parents got sick and I had to cook and manage a little money. My mother told me: go to college; they can take anything away from you except your education. There were five of us, I'm the youngest, and all of us went to college even though my parents just had a third- or fourth-grade education. My father was a taxi driver and my mom sold baked goods and crafts to make enough money so they could send us to private school. The tuition was hard but she said it was worth it. With Diana I'm older too and I want her to be ready for life, not insecure. Diana's been very independent since she was a kid (Dad). I (Mom) know parents who sit with their kids to do homework and get on the internet to figure things out for them. I don't do that. She's very independent and her work is all her work. She's always been very independent, more so than her sister is.

I don't think Diana has had any particular problems because she's Latina, except maybe because she's so small and in middle school that matters a little more. Other students may have trouble because of the language or an accent, but Diana has spoken English from the beginning and doesn't have an accent. Just in general, stereotypes – for any non-White student you have people who won't see misbehavior in the same way. Like if it's a White kid they say “He's having a bad day” but for a Black or Latino kid they'll say “They're like that.” I (Mom) have experienced some of that on my job – not much because I'm good at getting along with people. But you just have to speak nicely to them and be proud inside. We talk to her about being proud and emphasize that we have friends who are very petite and are

successful. I (Mom) tell her not to feel superior but to be proud inside - she knows two languages and three cultures and what could be more important than that? And it makes her more open minded.

The main thing is just to be there. Keep an eye on things. If you see a problem act on it right away, don't wait. You can learn a lot about what went on during the day on the ride home, so just listen and if there's something wrong go to the school and work it out.

Teacher Perspective

She makes me laugh! She's obviously bright and catches on to concepts quickly. She's actively involved in her own learning: does her homework; when she doesn't understand, she asks; she won't leave until she knows what's going on. But she's easily distracted by other things that are going on. And she doesn't have a big filter – thoughts come flying out of her mouth. But all she needs is a little reminder to focus. She does all she is asked to do. She's inquisitive but doesn't really want to think about things for ten years. A solid, good kid to have around. She's bubbly and fun and so people want to be around her, like her, want to work with her. She works well in groups and talking and understanding. That all works to her advantage.

The other teachers on the team, they laugh, too. I can't help it, she's so cute! They think Diana talks too much but they also think that she brings up good and insightful points. She often brings a different perspective. She thinks critically. She participates in class. She's a great scientist because she asks good questions.

In class she likes to work in groups, to talk. When we have whole class discussions she always has her hand up. Her interactions are almost always positive. I'm trying to think if I've ever seen her in a tiff. I think there may have been one time when they were saying

something and she got a little bit upset. This is one thing I love about this group of students - they don't put each other down. It's not a big deal if someone makes a mistake. They're encouraging to one another. In my lower level classes the kids feel like they have to push each other down in order to be up. And that's why, if you take a lower-level kid and put them in an advanced class they do OK. I think it's the culture, not necessarily the content. But her interactions are positive and encouraging, she has a lot to say, trying to make sure she understands. She'll call out without raising her hand, but it's often something that's toward the problem. Her interactions with me are positive and respectful. She does what I ask her to do. She treats me the way I treat her. It's nice. Overall I think other students view Diana very positively. They like her. Some of the negatives – sometimes she's a little too overbearing for some other students: too loud, too talkative. Some people need a break from that. On the whole, kids like her and want to be around her.

My expectation for Diana, as for every student, is that she should learn and master the content and so far she has. As far as a particular expectation or goal for her, I'd like to see her be more thoughtful about connections. There's only one time I can remember her saying "Hey, this is like that other thing."

Diana's family is a huge factor in her success. She has college-educated parents who show up to everything. They've been to the conferences and open house and they respond to the big e-mails and ask questions. If Diana doesn't get something during class she can get help at home. And there's the expectation that she'll go to college: it's not "If you go to college," it's "When you go to college."

Diana gets frustrated if she doesn't get something. It really bothers her if she can't get it. So I'll sit with her and ask questions and if she doesn't get it during class there's always

Dad to probe one-on-one. I've never seen her come back the next day still frustrated. Or she'll say, "I didn't get this one" on the homework and ask to go over it. So she's able to verbalize her needs and get them met either at home or in class. But she does have a need to resolve that dissonance in her head. And there are students, even in the Algebra class, who don't have that need. There are students who are bothered by the bad grade but not by not knowing the content. That's not Diana.

Researcher Perspective

The most frequently occurring item in my observation notes for Diana is "One of the first to raise her hand." She volunteered to share her answers to problems, she answered the teacher's questions, and she asked questions. The class had two formal assessments that I observed: a scheduled quiz and a single-item, less formal "exit slip" at the end of one class. On both occasions Diana asked clarifying questions about the assessment. She was also funny, making witty comments related to class activities during each class and on two of the four observation days attracting a small group of students whom she amused at the end of class. One of Diana's funniest moments in class involved small dry-erase boards the class was using to practice some problems in pairs. The teacher went to get the erasers she shares with the teacher next door and returned to tell the class that the erasers were already in use. As she told the class that she would have to relax her rules and let them use their fingers to erase, Diana said, "... you eat chicken with them, you dig up your noses ..." apparently quoting the teacher's earlier comments on the topic.

Diana was routinely on-task during class, on several occasions one of the first to get to work on a problem the teacher had assigned. She demanded a higher degree of teacher attention than many others in the class as she asked questions during individual or

cooperative work time. She was unembarrassed by making mistakes, at least in part due to a classroom culture that made it acceptable to make mistakes, as evidenced by other students' reactions to Diana's and their own errors. Although she was perhaps the most participatory of the students in class, Diana was otherwise not unusual in a class that was consistently focused on the material they were learning. Like the other students in class, she was respectful towards the teacher and other students, attentive to directions, and eager to do well. Like many others she seemed interested in the material and wanted to understand why things worked, not simply how to do the problems.

The interview with Diana's parents was conducted at their single-family detached home in a suburban development. The yard was landscaped and the house decorated in an unremarkable, middle-class style with no particular ethnic theme. The living room contained a largish TV that was not on when I was there and a jigsaw puzzle was spread out on the coffee table, partially done. In addition to Diana, her younger sister, and her parents, Diana's paternal grandfather, who is partially disabled by Parkinson's, lives with the family. Diana's mother apologized for her appearance, explaining she had recently gotten up because she works nights, but was not disheveled at all and had already cooked the girls an afternoon snack. I chatted with the three female members of the household briefly while getting some paperwork organized. Conversation between mother and daughters that didn't involve me was conducted in Spanish although we conversed in English except for a brief exchange in Spanish when I confirmed that I can speak Spanish. The girls went upstairs without being asked when Diana's mother and I started the interview and Diana's father joined us shortly afterwards. Both parents seemed happy to share their experiences and talk about their daughter, of whom they were obviously proud.

According to Diana's cumulative folder her adoption was finalized when she was 3 year and 4 months old. She brought the fact of being adopted up voluntarily and matter-of-factly in one of her interviews. English is a second language for both her parents, who speak with light accents and are fully fluent in English.

During her interviews, Diana repeatedly mentioned that her advanced math class would help her in high school and beyond. She was friendly and polite and answered questions eagerly. She tended to give very complete answers to questions without getting side-tracked by other ideas.

S4 Rafael

Rafael's Perspective

“An equation, to me it's kind of a mystery and I want to find out what the answer is.”
[S4-Bio-09-02-26]

I started liking math in third or fourth grade, and in fourth grade I realized I was good at it because people were asking me for help. I was in advanced math classes in fourth and fifth grades and in sixth grade I was in pre-algebra but then we moved. I was put in a regular math class when we moved, and when we moved back here my seventh grade math teacher encouraged me to try and get into more advanced classes. So one day I asked her if I could take algebra this year and that's how I got in the algebra class.

In math, my expectation for myself is that I'll get at least a B, that I won't get in any trouble for behavior, and that I'll learn how to do every kind of problem. In class I participate by doing my work, although I could do better if I talked to other people in the class less. I do my homework and I study for tests by looking in the book and doing some problems. I study by myself in my room and I keep the TV turned off while I work. My mom encourages me to do well and get a good education and she used to help when I had some problems.

A good teacher is someone who really understands the subject and that can explain it very well. Somebody that's nice: usually smiling and not in a bad mood; someone who talks to you in a more understanding tone and takes longer to explain things. What was good about my best teacher was that she would sit with you and explain things if you didn't understand something. It can be hard if you can't understand the teacher well or if they don't explain things in detail. Also, sometimes a teacher can make things harder if they don't understand your question and they give you a long explanation that doesn't really answer the question you asked.

There hasn't really been a time when I had problems in school, other than talking to people in class. If I have difficulty with a problem then I'll ask the teacher or someone in the class. I'm on the soccer team and when it was soccer season I'd come home so tired after practice that I didn't do my homework, but now soccer season has ended so that's not a problem.

I hang out with funny people, people who make lots of jokes and stuff. My friends are mostly not such good students, though some are. Mostly they're not really good in math or good in reading, I don't really know why. I would say overall I like school and I think that's true for them as well. They think I'm really smart and good at math. Once in a while they'll try to make fun of me and say "nerd" and stuff but it's just for fun and doesn't bother me. Friends can be a distraction when I talk to them too much in class.

I'm on the soccer team and I plan to continue that in high school. And I like to draw. I'm taking advanced art.

The advice I would have for other students is do your homework, don't talk a lot in class, and listen when the teacher is explaining something.

Parent Perspective

Rafael has always done very well in school. I've never put a lot of pressure on him but he's always liked learning. And he's obedient. He always says he wants an education. He talks about it. And his family is important to him. I want him to get a degree in something. At this point I don't know what kind of career he'll want. But whatever he decides, I want him to make it. I just want him to do his best.

His mind is very quick, I think that's why he's good at math. He's been in AIG a long time and so he's just advanced and advanced; I think that's why he's in the Algebra class instead of eighth grade math. Sometimes for people it's hard because I have a niece and then I also have a step daughter. She didn't want to take Algebra 1. They asked her but she said that she's not ready.

When we moved here, he didn't have friends nearby. But after a while he made friends at school and then he liked it. We moved here from Atlanta when he was about seven years old. When it comes to problems in school, sometimes when, say, I receive the report card and sometimes I know he's good in a class and then I find out he's kind of low, then I try to find out what happened. If there's anything I can do to help the teachers I will be happy to do it.

I think a good teacher is somebody who really cares about what she's doing. You have to really love what you're doing. And really care about kids, too, if you're teaching kids. If you're teaching adults you have to have a passion for what you're doing.

I think some students do better than others in math because, if from the beginning the kids don't know what they're talking about at the end of the day they're going to be lost and then they get off track. But if you understand from the beginning it's easier for you to keep

going. So I think it's very important for kids that if they don't understand they should ask the teacher to explain again until they get it. Another thing is that a lot of kids, a lot of Latino kids, they get a little bit behind because a lot of times they don't speak English well. So we need to keep working hard on the ESL programs so that they can understand the teachers.

Rafael gets very little help from me with his schoolwork because I don't really understand the math he's doing. But I pay close attention when the teacher calls if he has a problem or something. I think the parents have a lot of responsibility because we watch the children, how they act, and we know when something is going wrong. And we should support them and if we see something is wrong we have to try to talk to them about it. About the school: I think they have the responsibility to teach them the best they can do. But I believe it is more responsibility for the parents. I try to be there if there's a meeting or something they want to discuss with me. I show up and do what I have to do. Most of the time the school sends letters and stuff like that. I think the school treats parents pretty good. You know, especially with this teacher she takes the time to call me and let me know what's going on with my son. So I really appreciate what she's doing.

Teacher Perspective

Rafael is very capable; he's officially AIG in math. But he's frequently not on task. When I contact his mother that improves – I called her Friday and she came in for a conference and you saw that today he was much better in class. He's very talkative but he's respectful, he doesn't talk back. He'll ask questions when he doesn't know something but he catches on very quickly. He works better when he isn't in a group; when he's on his own he isn't spending all his time being social.

All the other teachers on the team say similar things about Rafael. He doesn't bring

his homework, does his classwork but loses track of it, and he's lacking in organizational skills.

I've never asked Rafael how he prefers to work. But I can see that he doesn't like being put by himself, he prefers to be with other students. I put him by himself in the back of the room to try and get him to stay on task but he's always going and joining Marcos with his group. Or like today, he was sitting next to some girls even though he was working by himself. So he wants at least the proximity to other students. I've tried him in a group and that doesn't work so well; tried individual but he likes to be with others. He's not bored to the point that I need to modify assignments, so I haven't tried anything like that. I need creativity to keep him on task. We did a quiz show last week and even then he wasn't that involved. It was computer-based and two of the other students loved it, but not Rafael. As far as friends, he's tracked with the high achievers, so during classes that's who he's with. But at lunch he sits with Marcos and a bunch of other Latino boys. All the others are in regular math and their skills are much lower than his. He mostly stays with the other Hispanic students, so I don't know what the other students really think of him. I think they think he's smart and friendly; I think they respect him.

My expectation is that Rafael will pass Algebra 1, get high school credit, and be respectful. I discuss that with Mom. He should go to geometry next year. I think he'll make it.

I can't really think of a time when he had problems getting a concept. He understands very quickly, especially with a little bit of one to one instruction/explanation. Rafael's really capable regardless of the situation as long as he's getting pressure from Mom and she is interested and responsive. I've talked to his mother three times on the phone. She speaks

English, so that helps.

Researcher Perspective

Rafael spent a great deal of class time talking to others, primarily Marcos, the other Latino boy in the class. During my early observations he was seated in a group with Marcos but his teacher later assigned him a seat by himself in the back of the room. He rarely stayed in that seat more than four or five minutes, although he returned to his assigned seat each time he was asked. When there was a vacant seat in his former group with Marcos he moved there. When that seat was unavailable he moved to a seat next to some girls who generally stayed in their seats doing the assigned work. He had little difficulty doing his classwork and could explain when asked how to do a problem but tried to find shortcuts to avoid actually doing the problems. For instance, he looked at the possible answers in a matching activity and chose based on the form of the answer. He did show interest in making sense of the mathematics content such as when he asked how to find the inverse of a matrix and multiply matrices without using the calculator. Rafael was one of the more talkative and distracting students in the class, although at least two students were much more disruptive and on two of the six observation days I noted that the group he was in was one of the most productive. Rafael was in the hallway during class time on three days that I observed, each time talking and playing with other Latino students and once with a group that included both Latino and African American boys.

Rafael attended Kindergarten through part of second grade in another state. He moved to his current district and attended one elementary school from late October through late February and another from early March through the end of the year for second grade. In third grade he attended a third school in the district for the entire year and into the spring

semester of fourth grade, again moving in early March. He finished fourth grade and completed fifth grade at a fourth school in the district. He was listed as a no-show for his original middle school assignment at a different school than the one he attended during the study; he enrolled at his current school for the beginning of seventh grade. Absences seem to have been a problem for Rafael in the past: he was absent a total of 24 days during the portion of second grade spent in his current district and 14 days during third grade. In more recent years his absences had decreased to 2 or 3 days per school year, although sixth-grade data was missing. No elementary school report cards were in his file or those of others in the study at the same school.

According to his cumulative folder Rafael was LEP (Limited English Proficient) and exited ESL services in spring of third grade. When asked during his interview, he stated that he had never been in ESL classes because he knew English when he started school.

Rafael lived in a single-family detached ranch home in a subdivision in a rural area. The houses were not new, a few showed signs of disrepair, and landscaping was generally limited to foundation shrubs near houses and a few mature trees. Rafael's house had a tall, wooden fence around the back yard, which contained a trampoline and a small in-ground pool with decorative tiles. A car and truck in the driveway had advertisements for a house-painting service on them. Data about who lives in the house are unclear. He listed his mom and a younger sister on the questionnaire. Both times I was at the house he came home from school on the bus with a girl who looked about his age and who appears to be part Black and to live in the house. His cumulative folder listed two siblings: the younger sister with the same surname as Rafael and another sister with the same surname as his mother. No father was listed and the emergency contact/pickup person listed was an aunt, according to the

form. His mother made reference to her step-daughter during the interview but not of the step-daughter's father.

Rafael's mother was friendly but tended to give brief answers to my questions and did not elaborate, even when I asked further questions. She indicated a preference for Spanish but began answering in English about ten minutes into the interview. After we finished the interview, she asked whether I knew which were the best high schools in the district. She explained that she was not sure the high school he was districted for was the best and wanted to know what other options they had. I told her of a magnet school and an accelerated program that I knew of and that I thought the deadline for applying to alternative schools had passed. Rafael confirmed that the deadline was about a month earlier. When I asked him, he said that no one had come to the school to talk about the accelerated program, that he would have gone if someone had, and that someone came to talk about another alternative program but he was ineligible for the program because he was not districted for the high school that housed it. My own investigation on the school's website revealed that it was possible for students to apply to that high school in order to attend the alternative program, although it was not prominently stated and it is possible that it wasn't made entirely clear at the presentation, either.

Rafael's mother was present when I interviewed him. She made faces to indicate that he was bothered by his friends' teasing, but when I pointed out to him that his mother disagreed with him he shrugged and said nothing. When I asked what he thought about being in the study he replied that it didn't really make much difference, but his mother said that he was proud of being in it.

S5 Esperanza

Esperanza's Perspective

My friends say that I'm good at math. And they think that's a good thing.
[S5-Int2-09-03-12]

I like math when I understand it. I liked it all through up to maybe seventh grade. Because this year I feel like I'm starting to not like math - it's so hard. Maybe just right now because I'm doing really bad in math. I used to be really good at math in 4th grade and 3rd grade. I knew all the multiplication tables. It felt really good to be good at math. In sixth grade I liked math and I was good at it. But seventh grade: pre-algebra, you have those teachers, and middle school. Maybe you're not always having your mind on school: friends, maybe boys, TV, and computers, all that. What I like about math is that it's important, so you actually learn a lot from it. I have a sense that I'm actually going to use it in the future. There are some things I dislike about math - maybe certain rules that don't make sense. What do I like about school? I like learning new things. I just like it, the writing, the – I just like school. I don't like homework - too much homework and maybe too much tests and everything gets bunched up. But I like to use math when I go shopping and it's a sale and it's some percent off. I used to not understand and now I can. Or tax. I like that.

I want so many things. I want to help people. I want to own my own business. I want to actually do something that's going to matter. Maybe, I don't know, help people. Like people might say, "She helped a lot of people" or "She donated." I think school maybe is preparing me in some ways. I picture doing something with music, maybe writing my own song. My parents want me to go to college. They want me to have a good job - a good career that I enjoy. It might not have to be the highest paid. School is important to me because I'm trying to go to college since my parents didn't get a chance to. I want to keep doing a good

job in math and keep being in advanced classes for math.

My sisters help me with my homework when I have questions. My mom really can't and my dad is always kind of busy. I do my homework while I'm eating a snack or something in the kitchen. If it's something that I understand that's easy then I might do it while I'm watching TV during the commercials. But if it's hard then I have to focus and figure it out. My older sisters are helpful when I have questions. I sometimes study with friends at school during study hall and AVID⁶ and I get to work with a friend. Even though she's not in algebra I can help her and sometimes we can help each other.

My best math teacher was in fourth grade. It was so easy to understand what she was saying because she would write it down on the board and explain it, give her own examples. Maybe because of the way she taught it to us; it was so clear. She was funny; there was a sense of humor to it. I'm not very good at math and not that bad, and I'm trying to get better at it. With a bad teacher it's annoying. Math gets harder and harder. I don't like it if the teacher isn't that organized or when we don't take notes and learn vocabulary. A teacher plays a big role. If you and your teacher are not getting along, like if you don't like him or her or you feel like they don't like you, you're not going to try as hard in the class and that's going to affect your grade. If you come to class and you don't look like you're OK and the teacher asks if you're OK and if they can do anything then I know the teacher cares about me. Or if my grade is going down in that class they'll ask, "Is everything OK? Are you not getting it?"

⁶ AVID (Advancement Via Individual Determination) is a college-readiness system aimed at students in the academic middle to increase their participation and success in advanced classes (AVID Center, 2009). The AVID Center, a non-profit established in 1992, works with school districts and trains teachers to teach AVID classes that students take as an academic elective. Students receive tutoring, learn note-taking skills, develop short- and long-range plans, and motivational activities (AVID Center, 2009). According to the AVID website, AVID "levels the playing field for minority, rural, low-income, and other students" (AVID Center, 2009, "Quick Facts").

In an earlier year in school I was having a problem just with a really hard lesson. I told my mom if she could take me to the store and I remember that I got this math workbook. It explained the lesson a little bit better. That really helped me because I practiced. It was my own idea. Now, I always go online. When we were doing something in algebra I didn't understand something so I went online and found a video where someone was actually working out that kind of problem. It helped me and I could go back if I needed to. I've done that a bunch of times.

When I started school I knew some basic English like, "Can I go to the bathroom?" that sort of thing. I was in ESL in Kindergarten and first grade, second grade. I felt like it wasn't that useful. We would read books. I remember just hating to go to ESL because I would miss out on so much fun things that the class would do, like one time they made this really cool project. So I didn't want to go to ESL no more because I was missing the more fun things. It was kind of annoying because I actually wanted to be in class because I felt like I wasn't learning anything. I tested out of ESL after that.

I mostly hang out with the same people at school and outside. Mostly the friends I hang out with are kind of smart and they actually don't think that Fs are cool. There are people at school who think that Fs are cool. They're not necessarily Hispanic. One friend who's Hispanic is like, "You're smart because you and Rafael and Marcos are the only ones in there." Adults tell me, "Oh, you should keep it up. It's good you're in that class."

I'm in AVID and if my AVID teacher sees that I'm struggling with something she'll say, "Maybe you should work harder on that. Maybe you should bring your work to AVID class." And she can help me if I ask. I'm also in the MSEN (Math Science Education Network), I have to go tomorrow – we meet some Saturdays. You do a lot of math and

science things: little projects. They're helpful because it includes a lot of math. We do hands on stuff, with science. It's good because we had - it was really good review - we were learning about the cell and all the parts in science at school and in MSEN and I didn't need to study as much when the test came.

The advice I would give to another student is that they should try their best. Not to be really, really smart but. Because you don't have to be really smart to be successful. Just try your hardest. Because later on in life you're going to look back on it and say, "Oh, I should've been good to [trails off]..."

Parent Perspective

School is very important to Esperanza. Right now she's happy because she's on the soccer team and really likes that. She also likes to play the drums, she has a drum kit in the garage.

Esperanza has always done well in school. She gets almost all As with an occasional B. She really likes math. All my daughters are good students. Her oldest sister is in college, the next is in high school and goes to college as part of that, and the youngest learns very well too – she could read within four months after starting kindergarten! Espe is the best at math, she really likes it. She's better at math than any of the other students I know. I think many children in other families don't like math either, maybe because their parents don't like it. I like math, especially fractions. When I was young we owned a store in Mexico and I had to use math all the time – it's very useful.

Esperanza hasn't really had any problems in school. The only time I've had to go to the school that was like a problem was one day I had to go looking for her. She stayed late to work on math with her teacher but no one told me. So the bus came but she didn't come

home and I went to the school and there she was in class. But she's never had a problem with a teacher or anything like that.

I think that for some Latino students it's hard in school because they go out too much and their parents don't help them. Their parents don't help them study. I think that sometimes the parents, or maybe the students, don't like school and so there's not the help.

To me, a good math teacher is someone who knows the mathematics very well. Someone who can do problems mentally and doesn't need a calculator. Also someone who treats the students well and can explain for a student who doesn't understand.

Teacher Perspective

Esperanza is polite and tries hard. She needs some help getting concepts in math and asks when she needs help. She does what she can. She's probably really pretty average in math. She's one of the students in my algebra class whose score was below the cutoff but we included in the class so that we'd have enough students. She always does her homework and all she's asked to do.

The other teachers on the team all love her so much. They all say good things about her. She's a terrific student.

In class Esperanza likes to work in a group and she works well in a group. I encourage the use of technology in general and I think for her it's really helpful. She has some difficulty with the symbolic manipulation and the calculator really helps her. She's very social, polite. She's helpful, wants to do any job that you give her. I believe she's popular. She's very friendly; pretty and successful. She sits with the top students at lunch.

My expectations for Esperanza are no different than for any student in the class: that she'll pass the course and take advantage of the high-school credit.

I haven't had a lot of contact with her family. One time I talked to her mom in a meeting. Esperanza is so good that it's never urgent to get in touch with her parents and I just don't have time to do any but the most urgent.

Esperanza is the most frequently absent student in my algebra class. She was out for 3 or 4 days at the beginning of the quarter, I kind of wondered whether she'd gone to Mexico. When she loses several days in a row of material it really affects how she does. She failed one of the standard tests they take. She handled it well and on the second one she raised her score. Maybe just through studying and coming to school more. I want to start encouraging her to seek help on the internet, it's another resource that could help her. One time I had them work the exams in the book and hand that in, I think that may have helped her, I'm not sure.

Researcher Perspective

In class Esperanza sat with the most consistently productive group and was routinely taking notes, working on classwork, or discussing the work with other members of her group. She participated in class discussions and requested homework problems for review but did not volunteer to put her work on the board. She and the other members of her group consulted among themselves frequently when working and occasionally requested teacher assistance. The only day they appeared to do little work on their class assignment was the day that Rafael sat with the group for much of the period. Rafael and Marcos were the students outside her group with whom Esperanza most frequently interacted, however she seldom spoke to anyone other than her group members.

Esperanza lived in a single-family detached ranch home in a subdivision in a rural area. The houses were not new, a few showed signs of disrepair, and landscaping was generally limited to foundation shrubs near houses and a few mature trees. Esperanza's house

had a cactus and one or two other plants in the yard. The family's dog appeared to wander freely in the yard, mostly staying very close to the house. Inside, the walls were virtually covered with family portrait photographs, other art, and artificial plants. Horizontal surfaces, including the television, all had decorative figurines in many styles and sizes. A guitar decorated in the colors and seal of the Mexican flag was on a guitar stand in the living room. The second time I visited a Mexican-themed, pottery tequila set was on the coffee table. The table in the eat-in kitchen had stacked containers that appeared to contain food, including many boxes of Ferrero Rocher chocolates at one end. The household included Esperanza, her parents, two older sisters, and a younger brother and sister. Her mother was friendly and welcoming when I interviewed her, although her answers tended to be quite short. She described her weekly driving routine, which included dropping off and picking up her children from daily activities and taking them to volunteer, to work, and to the library on the weekends. Esperanza's mother expressed pride in all her children and their accomplishments and appeared to value their academic achievement highly.

At the end of my interviews with Esperanza she asked whether I would be returning to her classroom in the future. I told her I would, having offered to come back and volunteer when the class was preparing for testing at the end of the year. She appeared to be pleased with my answer.

S6 Marcos

Marcos' Perspective

I miss Mexico, a lot.
[Marcos-Int3-09-03-24]

What's important to me is my family, of course. I play soccer and wrestling and a little bit of baseball. School, kind of [mumbled]. I think I'm good at math. If I can be in

advanced math class I'm pretty good to be there. When it's hard I pay attention and do it. When it's easy I kind of do it. I could do better if I paid attention more of the time. In the past, this teacher she explained what she did and then she did samples so people could get it. If people didn't get it she showed again. Then after that she gave us a worksheet and if you wanted help you just asked the teacher. I haven't really worked in groups in math. In class now you kind of do because you can ask someone, but I mostly work alone. Math is different. For me it's more interesting. I heard math is like another language. That's interesting to me. I feel it's true. There's no other subjects I like much. I'm in honors English but I don't really like it. The reading makes other classes less enjoyable.

I was ten when I came to the USA. I miss Mexico, a lot. I was four when my mom went to the USA. I stayed with my grandmom. When my mom came for us, I thought she was a stranger. The first thing I thought was, who is that there? Someone in my room and touching my stuff. I did talk to her on the phone when she was away. My sister was two when my mom left. I still miss my grandma a lot and talk to her on the phone. I have a lot of aunts and uncles and cousins I saw a lot when we lived there that still live there, too. I have five cousins and three aunts and uncles that live here. I met them when I was really little in Mexico but I didn't remember them when we got here. It was hard. I talk to my dad a lot on the phone. He's in Mexico. When I lived there he lived in Mexico too – not right there but I would spend time with him on vacations. The stuff I was learning at the end of fifth grade I had already learned in Mexico. But it was kind of different because I had to learn to spell everything. In Mexico I had already learned things in fourth grade that they weren't up to in fifth grade here. It was easier to understand math because I kind of know how the numbers go and stuff. When I was little my grandfather had me do division problems. He made me

learn my multiplication tables. I still remember that the sixes table was the first one I learned.

To study for math I go back to what I've done and look how to do the problem, remember. I just do the work in class. Sometimes I do the homework. My cousin, who's a senior in high school, sometimes helps me with my homework. She's pretty helpful when she's around. My expectation for myself in math class is to pass and go to geometry next year; I wouldn't be happy with a D or a C, I want a high B or an A. I've never been in danger of not getting that high a grade in math but in other classes I do some extra credit to get my grade up if I need to. My mom said it would be cool if I did forensics. I'm into video games and technology so I'd like to be a video-game designer. And I like to draw and stuff, too, and I like to play sports. So I was thinking either video game designer or soccer player. I think my mom is cool with that idea.

A good math teacher is somebody that listens to you, helps you, if you don't understand something then she or he can explain it to you. A bad teacher? I don't know, a teacher that doesn't care, doesn't care how students are doing. I'm not sure what my teachers have thought of me as a math student. I guess they think I was good, I guess. They said something but I forgot what they said. Teachers can help motivate me by making the problem interesting. For instance, I was used to working with just numbers and signs and then when we started algebra they started using letters and that was interesting to me. When teachers check the answers and see if you've done things that helps. I can tell a teacher cares by when they know that I'm doing something wrong they help me and tell me what's wrong with it and why shouldn't I do it. Like something I shouldn't be doing.

Mostly I ask the teacher if I don't get something in math. If I still don't get it I'll get a friend to explain it. Things that can get in the way for me in math are students distracting me,

doing something funny or talking. In sixth grade I usually had help because I didn't understand it because I didn't know the language. Some other students in the class that speak my language helped me during class and I got it. One thing that can cause problems at school is kids from school messing with you and stuff. Some kids might like to fight, want to fight you.

My last year of ESL was seventh grade. It was useful. The Academy of Reading was the best thing in ESL. You got little trophies on the computer each time you do another level. English is still what makes some things harder. I didn't usually read books but when I started doing WORD⁷ I kind of got interested. Right now I'm reading *Tears of a Tiger*.

In school, some of my friends are good students, some aren't, some are in between. Outside school I hang out with my cousins, my sister, my friends; friends in the neighborhood and friends that live further away. At school I hang out more with Latino students than not but I hang out with both. We speak both Spanish and English – like Spanglish. They sometimes make fun, like “nerd.” It doesn't affect how I do in school or the friendships. I don't usually talk about school outside. Emily is my girl. She's in seventh grade. I know her from breakfast, I guess. I talk with a lot of seventh-graders. Most eighth-graders are too cool to talk to seventh graders but I hang around mostly with seventh-graders. I talk to them at breakfast because there's mostly not eighth-graders, just seventh-graders at breakfast.

I play alto saxophone in the school band. This is my first year. I like it. We barely have flutes, just one seventh-grader. We have four saxophones, a lot of clarinets - like ten. A trombone – you know those big things? I don't do any more activities now; I was on the

⁷ Working On Reading Daily, a school-wide program that had been recently implemented to address low literacy scores at the school.

baseball team but some stuff came up at home and now I'm not. I'll play soccer again next year when I go to high school.

My responsibilities at home are to do my room, cleaning. Do homework. Sometimes I do dishes and sweep. I help my sister with her homework, everything but especially math, maybe once every four days she needs some help. I like helping her sometimes, when I'm not busy.

The advice I would give to other students is just pay attention. Do your work.

Parent Perspective

Marcos is very responsible. He likes studying and sports. Sometimes he's a little irritable, but he's a good boy. I've always liked math and I use it in my work. But my daughter doesn't like it, although my niece does. I don't talk much with Marcos about math. He does his homework and never asks for help or anything. I ask him how things are and he says fine. He's always done it independently. I want him to do something, something special that he likes. I always tell him that I will help him get to where he wants. I have great expectations for Marcos. For myself, I'd like to see him do – What was it I said the other day? – do forensics, I'd like that, but that's just me.

He's always done very well in school. He hasn't had many problems. I want to see all As; I get angry when he doesn't have all As. When he does, I tell him, "You see? You can! you can do it." Once he brought home a C, though not in this subject. And I said, "Uh-uh, I'm not signing." Marcos has had different experiences with math than other youngsters I know. Most of them don't like math. I think it's because he enjoys it and for the others it's a little difficult and they don't give it enough attention.

When he arrived here he really battled with English. On a few occasions he cried

because it was difficult. But I would always tell him, you can do it, you can do it. And he learned more and he did it.

At times I think we Latinos are a little ignored by the school. Perhaps because of the language or lack of preparation, but, yes, they ignore us a bit. It hasn't exactly happened with Marcos, but I had problems with my daughter. Another girl did something to her and she went to the teacher, who gave her a pass to go to the office. When I went to pick her up she was crying and I had to go and tell the principal what had happened. So then we went and saw which girl had caused the problem. But before that my daughter had told the secretary which girl it was and she ignored her, ignored my daughter. I imagine things are different for Latino students because of the language. Sometimes the children don't know it. They have to really struggle with it and when they learn more they have more success. When my children came here I got them an English course to study at home. And they watched TV in English - the news, movies. They wanted to watch the movies in Spanish but I told them, "No, here it's in English."

I have very little time to spend with my children. When Marcos tells me needs something for school I try to get it for him. Because of time I can almost never go to the school. But I go to the most important things. For instance there was a program about the high school and that prepared me to understand Marcos's options for high school. So I am a little involved with the school; not directly but I communicate with the teacher and everything. I think we parents have the responsibility to be involved to make sure that our children don't miss school, that things are going well in school, ask to be sure there aren't problems, and check to make sure they do their homework. We also have to communicate with the teachers. The schools just do what they can because they have many students and

not a lot of time for each one.

Teacher Perspective

Marcos tries hard, likes to please the teacher. He's very sweet. But only when he's not with Rafael - they're good friends and Rafael distracts him. Marcos does his homework and is responsible and keeps track of things. Asks for help when he needs it. He will be really successful in high school. He's not as strong in English as the other two in algebra class. I think he's probably more of a newcomer. I'm not sure whether he's in regular English or ESL.

The other teachers on the team respect him. They say he has very excellent ideas.

Marcos works well in groups – but that's partly my style. But he's not like Tyrone who chooses to sit alone. He participates in class, works well with his group, and he likes to answer questions; makes jokes. The other students respect him. He sits with the same group of students at lunch as Rafael – all Hispanic boys. They seem to have fun, there's lots of laughing and joking. Socially I think he's doing well. The others in that group are not high achievers. He doesn't sit with the AIG kids. I know he's in sports – on the soccer team. I don't know about any other activities. There aren't a lot of activities for boys other than sports.

I'm not sure if he is in any special programs I think he'd benefit from something like AVID or pre-college. But he didn't apply for **pre-college**.

I haven't needed to contact his family at all.

The first benchmark he didn't pass and I think that's because there were a lot of word problems, maybe too much reading. He was still close. I think the technology and using a

website for extra help would probably help him. I hope he goes to the Saturday Academy⁸ - he'd benefit a lot. Both he and Esperanza didn't pass the one test and they both pulled up their scores for the next assessment.

Researcher Perspective

Marcos was often engaged in learning mathematics while in class. He participated in class discussions of the daily warmup, requested homework questions for review, and volunteered to put answers on the board. On one occasion he found another student's mistake at the board and was obviously pleased to be the one to correct it. He was, however, also frequently distracted by Rafael and spent substantial portions of two of the six classes I observed talking to Rafael. Compared to other students in the class he spent slightly more than average time working during class time. During one observation when Rafael was not there Marcos worked steadily and frequently consulted with two other students. He expressed school spirit related to his sports teams; one day he wore dress clothes in school colors for a wrestling match. On "tacky day" he had painted streaks in his hair, as did one other boy. It was not clear whether the streaks were part of tacky day or in honor of a sporting event as they were also in the school colors.

Although his teacher indicated that Marcos had not applied to early college, he had both applied and been accepted. He admitted to being somewhat nervous about it but also appeared proud of having gotten in.

Marcos lived in a single-wide mobile home with an added porch in a moderately large mobile home community in a suburban area. In addition to his mother and younger sister a female cousin lived with them. Both his mother and cousin worked in restaurants; his mother

⁸ A free, voluntary school program to help students prepare for standardized tests. Half-day intensive instruction is provided by some of the school's mathematics teachers on selected Saturdays.

was still wearing her fast-food restaurant's uniform when I interviewed her. The home was decorated with family portrait photographs, other art, and many well-cared-for plants. The television was on when I arrived and Marcos's mother gestured for him to turn it off when I came in. His mother was friendly and seemed comfortable talking. When I left she gave me two cuttings from plants I had admired.

The most striking thing about Marcos during our interviews was his extreme discomfort during the two interviews conducted at school. His answers to many questions were very short, particularly questions about academics and teachers. At school he avoided eye contact, squirmed in the chair, and sometimes turned away while answering questions. He was more comfortable and more voluble when talking about Mexico, band, the book he was reading, and to some extent his girlfriend. At the first two interviews he was also comfortable talking about sports, however at the third interview when I asked how baseball was going he said he was no longer on the team. When I inquired further he said that there were problems at home and he couldn't play any more, though he was planning to resume his sports activities the next year when soccer began.

S7 Miguel

Miguel's Perspective

"I'm mostly focused on Language Arts now. ... Last time I almost failed it. I got barely a B."

[S7-Int1-09-02-23]

I started liking math in third grade. There was a little toy that did multiplication and I didn't understand it so my mom explained multiplication for me and made me practice. Ever since then I've been good at it. So it was really my mom who made me good at it; and my grandfather, too, he quizzes me whenever we go there to visit. What drew me to math was that I'm good at it. Right now it's getting harder. Usually I have to give 50% of my mind and

I get it and now I'm putting 100% and I still don't get it. Most of the time I'm doing as well as I could but sometimes I could do better if I had a better explanation. I realized I was good at math in third grade, I'm not sure how, I just realized it. I really sucked at Language Arts then because I was still going to ESL. But in class I don't like to give the answers; I know them, I just like to keep them to myself unless the teacher calls on me. I'll talk if we're working in a group, but I don't volunteer when it's the whole class. Sometimes we'll have like a worksheet that we work on together. I like that. Sometimes we can help each other.

My expectations for myself are that I'll get it and that I'll get good grades. But definitely that I actually get it because I feel awkward if I get good grades but I don't really get it, like in science. You can tell that someone's good at math if you can get it and do it without having to study a lot. A good math student is someone who actually wants to learn it, puts their own time in to figure it out. Not necessarily quick, but puts in a lot of effort. I'm good at math, so I don't really have to put my whole effort into it. In Language Arts this year I really have to work hard because I almost failed; I barely got a B. I need to make sure I get at least a B so I can be on the honor roll. And now I'm in AIG language arts but it's too hard. If it's too hard I'm going to ask to go back to the regular language arts. And the teacher there, she gives too much homework. For the future, I expect myself to take honors classes in high school. AP classes and maybe IB classes. Maybe take the two-year middle college and then I can take two years off my college for free. Then I can do four years in college to get my masters in engineering. I want to do sports in college and I wanted to do four years, so I thought I wouldn't do it but they said I can do it and then get a master's at the end of four years.

The best teacher I ever had was Ms Parker in sixth grade. She was strict, mean, evil.

But the thing was that she really pushed me and made me push myself. She's the reason I got good grades. I couldn't stand her and she made kids cry. She would say, there won't always be someone like me around to push you. And that's when I started to realize that you're supposed to push yourself. In the real world if you don't take care of stuff people will just let you because it's not on them if you don't do it. My teacher now is kind of the same way but more enjoyable. I think what she was trying to say was that if you push yourself you may learn that you can do something that you couldn't do before. Like maybe an average class was OK before but you learn you can do an advanced class. I think a good teacher has to listen and to take the time to explain things step by step – not be lazy. The worst teacher I ever had was Ms Cartwright in fifth grade. She was strict and mean, too, but Ms Parker made me want to work and Ms Cartwright just made me too scared and I didn't think anything I did would be good enough for her so I didn't even try. Making kids fear you is kind of a good way of getting them to do their work. But if it's too much then they might not even do their work. Or kids might stop caring - like I can work my butt off but it's still not good enough for her. Ms Parker made me fear what would happen in the future if I didn't do the work and Ms Cartwright just cared about right now and did you do your work. My teachers have cared about me. You can tell, like if they actually ask you if something's wrong or you need help if they see your grades going down.

The only problem I have at school is homework. Not that I can't do it, just that it's there. I think all the work at school should be done in school and then we can just leave until tomorrow. And I think they should let us talk more. The only problem I have in math is actually remembering the names of the things we learned but then if I see an example then I know it. Oh, and I suck at word problems. I'm better than before, but that and the names are

a problem. I like problems that I can solve. I like when I know what to do. At first algebra class was really hard but this dude in the class helped me and after a few weeks I started getting it. In 6th grade I had a really hard time getting something, I don't remember what it was. I was too scared to ask the teacher but I asked and I asked until I finally found another student who could understand. Now I usually ask my AVID teacher. She'll help me at lunch if I need it.

I've been in ESL classes since I started school. I don't really remember learning English, I thought I already knew it because I spoke it with my older sister before I started school. So I was never wondering what a word meant or anything like that. But now I'm in advanced English and last time I took the test to get out of ESL they said it wasn't good enough. I still go but now it's just once a week. It's OK and the teacher sometimes shows us things that I didn't know, so I guess it's useful. It's not annoying being in it but sometimes it's annoying leaving class.

The people I hang out with are some good students and some not so good students. I have a few people I hang out with at school during homeroom and lunch and then after school it's people on the team. When I come home I sometimes see other kids that live in the neighborhood. Mostly I don't go out and I don't like going to other people's houses. Like the kid who just came here to drop off that paper, his name's Juan; he's really smart and he says he's smarter than me but he's not in algebra. I scored one or two points higher on the EOGs and he scored one point higher on the Iowa⁹ test and my AVID teacher said that AVID gives me more points. So I said why didn't he join and he said because it's boring. And then next year he'll be in advanced algebra and I'll be in advanced geometry. Like geometry in ninth

⁹ The Iowa Algebra Aptitude Test is a commonly used as one factor in deciding whether middle-school students should be placed into an Algebra 1 class.

grade isn't bad enough. Next year is scary. I'm fearing next year. It's going to be a change for me. It's going to be different. Longer classes.

My friends are used to me and Eduardo doing well, it's not awkward. But sometimes if one of the other people gets an A on a test or something they'll make a big deal out of it. Sometimes, Eduardo keeps competing with the grades and sometimes that pushes me. But we're not fighting about it right now. We just don't go at it like we used to. I don't really like to talk to people except my friends. I know a lot of kids who talk just to talk, but that's not how I am. I don't get mad at hardly anything. You have to go really deep to make me angry. If someone punched me, that would make me mad.

Sports are really important to me. I'm on the lacrosse and soccer teams. I'm going to try out for football, although I don't quite understand all the rules. But it seems like an interesting game. I think sports also help me academically because it helps relieve stress.

I don't really have responsibilities around the house. Stay out of the way of my mom and my sister when they're cleaning, that's pretty much it. I sometimes help. My dad wants me to go outside but he wants me to just be out there without him asking me, just be out there every day. He'll tell me that you always see your cousin out there hanging out with his dad. And I said to him, "That's because when he was young his dad always took him everywhere, you never paid any attention so I stayed with my mom and I grew up like that." Now because I grew up and I'm stronger now he needs me outside and it's hard to get adjusted to what he does every day.

Sometimes I help my little sister with her homework but I don't like to. She wants me to, my mom wants me to. I don't want to because she doesn't understand the simplest things. But I actually do help my little sister, that's the difference between me and my older sister.

My sister doesn't want to help me; I used to ask but she always said "no." She said that she's not as smart but that it's because she didn't get help because she's the oldest. I said that it's really the same for me because even though she's there she doesn't help. I think I'm doing a better job than my older sister did with helping me. Also my little sister asks at the worst times. Like when I'm really mad or frustrated or something. But if she asks me at the right time I do help. At home, my mom plays like the strict one. My dad is strict when he's mad but mostly he's just there. My cousins are there to talk to.

The advice I would give to another student is if you're not good at it ask a teacher. Find a way that works for you to study. Work on the stuff you don't know. If you can't find anything find out from your friends who are good at it. My advice would be the same for a Latino student. If it's better, get a Latino friend to help, that might make it easier.

Parent Perspective

It's a surprise to us, you know, Miguel's very good at mathematics and I don't know how he does so well. In second and third grade he didn't do as well in other subjects. Right now, he's doing well in everything. He almost always spoke English, he has difficulty with Spanish. It's difficult because we don't speak much English; the children speak English among themselves. His studies are the most important thing for Miguel. He's very responsible about his homework and works until ten or eleven at night. He really wants to do well and hopes to get a scholarship to study engineering. Sports are also important to him – lacrosse and soccer. We're very proud because he spoke about Hispanos to officials from the school. I went and I cried because I was so proud. We don't help him with schoolwork. If he needs to, he searches in the dictionary or on the internet. He knows we can't help him much – I should really say not at all. I only went to elementary school and my husband through third

grade. His older sister has hardly helped him at all, either. He's done it on his own. I don't go to the school very much. When they send me something in Spanish I go. My son and I went to a meeting. We went once last year and there was a translator. And we go when my son tells me he's going to get a certificate or something.

My expectations for him are what he wants. How can I pay for university? He needs to strive, he needs scholarships. We don't demand a lot – nothing more than that he finish high school, like my daughter. I feel like Miguel does so much. I tell my husband that I feel like I'm rich. I feel, mmm, complete. I feel like I've realized my dreams because in Mexico, when I was single we didn't even have a place to sleep. I'm happy when Miguel does well in math; him too. He likes it. He asks me, "Are you happy, Mamí?" He likes us to tell him. If he doesn't do well he tells me that he will try harder. I tell him that he needs to improve his grade. His only responsibility is to study, everything else is our worry. He doesn't need to worry about money or anything. Here, you have all you need to live.

My husband has two brothers that live here and I have some cousins and nieces and nephews. Miguel's cousin is 14 too and he's always saying, "Why do you have so much homework?" to my son. His friends, too, they have less work. It's not equal – they give less work to the others. I don't know why. I think it also depends on the teacher.

When we lived in town Miguel got lots of help at school. When we moved he didn't get as much help and fell a little behind. Then when he went to a new elementary school the teachers really cared about him and helped him a lot. In fifth grade he didn't like to go to school because he was scared of the teacher. He told us that he didn't like the teacher. My husband went to the school to talk to her. He said she wasn't bad, just strict. My husband explained to my son that she wasn't angry with anyone and she wasn't bad and wanted the

children to do well. Since then he has been very concerned about being responsible. Thanks to that teacher he is very responsible. It's good that a teacher is strict so the children do their work. Before this teacher he sat like this [she indicated slumped in the chair] and afterwards like this [she sat up straight]. He's still like that. He still puts all his papers in order. If he needs something for his schoolwork he'll tell me that we need to go right now so that he can have what he needs. I say, "OK, let's go." His ESL teacher was especially good. She was very friendly and attentive. The others saw and helped but that was all. The ESL teacher had lots of patience and took care of each child. Each child is different and does things differently. One has to do everything for the children during school hours so that they feel comfortable. A mother has to trust the teachers - they are like the parent while the children are at school.

I don't think that Latina/o students have to confront anything special to succeed in school. It's like everyone; it depends on each child's desires.

As parents we try to teach them to be well behaved above all; also respect and if they don't know something then ask. I'm very inquisitive. If I don't know something I have to ask. I don't speak English, but if I could I would ask a lot. We teach them to know how to ask forgiveness when you offend someone and how to forgive as well, to finish your work. The school? I don't know what the school's responsibilities are. To teach the children well. To look at all students as equals. To pay attention. When students aren't doing well you need to look for problems at home. Maybe they can't concentrate because they're thinking about problems. Or perhaps difficulty with money because in this country money is always first - how to pay for something. Sometimes there are children who worry about all that. Another thing when a child doesn't advance in his classes: the teachers should investigate the parents.

Sometimes parents fight a lot and the child worries about the mother or father or both.

Because it's ugly when there is violence in the house. I have experience because when I was a girl there was violence in the house. If someone is to be a good teacher she has to investigate what happens in the house. That's another responsibility of the teacher.

Teacher Perspective

Miguel is always paying attention. He's very conscious of his work - checking to make sure he's with us and doing what he's supposed to be doing. I think AVID has been really good for him. It's pushed his understanding of who he is and what he has to do and given him the courage to do things, like speaking at that minority summit, that I think he wouldn't have done otherwise because he is very shy and very quiet. He's not real big on discovery learning. I wouldn't necessarily say he wants or needs direct teaching, but he likes to know that he's doing the right thing. He wants that reassurance and structure.

All the teachers on the team love him. Everybody talks about how conscientious he is and the things he's doing. He works well with other kids and does other things in the classroom and comes up with neat ideas about how to do different things.

Miguel would probably rather work by himself. He's even one of those kids that hangs out with a group but if they start doing things that he knows he shouldn't be involved in, he will visibly pull himself away. So if it comes down to getting the work done, he will do that by himself. But if you ask him to be in a group he will definitely do that and he'll be a really good contributor and usually is just as confident as they are in whatever they're doing. So I think he feels secure now in what he's doing and how he's working. I know the kids know he's an AVID kid but I don't think they realize that's one of the primary reasons he ended up in the class. I think they see him as just as capable as they are. With me he's gotten

a lot more comfortable. At the beginning he was very timid and, as always, very quiet. I think he's got a mixed group of friends academically. He definitely hangs out with the same ethnic group. But like I said, I think he knows when he needs to separate himself from that and when he can pull that back together. Like at lunch he definitely hangs out with non-Algebra kids but at the same time I think the kids know that he's very intelligent, that he's very capable of doing higher things.

With all the AVID kids I want to see them pushed to do more than just OK. They're not the only ones who have some struggling issues or weren't in 7-8 math last year. But the ones I have this year really do push themselves to do the best they can: to come and ask questions or to make sure that they're getting that extra help. For Miguel to feel successful is the most important thing to me because I don't like them having that feeling that they're floundering. If it weren't for AVID he probably would have been in the accelerated class, he may not have had the three out of four criteria we usually use for Algebra placement. I think Miguel knows how much AVID had to do with it. I think the AVID teacher shares that with them and encourages them and tells them she knows they can do this; it's going to be a struggle sometimes but it's well worth it. I think he has his mind wrapped around that whole idea that if he's pushed then he can reach that goal and do better for himself later on, whereas some are like "It's too hard, I don't want to do it any more."

I think he has really strong family support. I've met them a couple of times, but you know Miguel doesn't share much. I met his parents at the beginning of the year. Parents are supposed to come in and pick up the first nine weeks' report card. They came in and we reassured them that he was doing well and that we didn't have any major concerns. They shared the same with us: that they felt like he was having a good year. But we haven't had to

call them in or anything like that for a separate meeting. I think they're aware of what's going on here and I think the AVID teacher talks to all the parents quite frequently.

At the beginning of the year there were some times when his background wasn't as good as some of the other kids and I think there were some things he didn't understand. He definitely came to me and said, "Can you help me with this?" or, "I need help with this problem." And I know that he also went to his AVID teacher and said, "Can you help me with this?" One really cool thing is that one of the AVID teacher's other students has a parent that has gone back to school and is taking algebra and Miguel and another student are helping to tutor her [the mother] now. She comes in one or two days a week. He came over one day and said, "This is what I showed her to do. Did I do it right?" And I said, "Yes, you did it really right." and he was very excited. He really likes to see that he can help somebody else with something that at one time he was struggling with. I think that helped his confidence. And I think his confidence was not quite there; like he knew he could do the work and things, but there was that little bit of being scared of being put in class with the "smart kids."

Researcher Perspective

Miguel was, as he and his teacher indicated, very quiet and attentive during class. He rarely talked during class, although he talked and laughed with an African American girl who sat to his left before class three of the four days I observed and with the Latina girl in the class one day. All four days that I observed he was one of the first students in his seat with his materials out at the beginning of class. During class he took notes, worked on classwork, or sat quietly. I did not see him volunteer an answer or ask a question during class discussion, although he did seek the teacher's help individually once. I observed and he mentioned that the White girl who sat on his right and he did not speak at all although she talked to all the

other students sitting adjacent to her.

Although both Miguel and his teacher stated that AVID was a major factor in his placement into Algebra 1, the review of his cumulative folder revealed that his score on the Iowa test was a point higher than Eduardo's, that he had a 4 on the EOG, and that his seventh-grade math grade was above a 90, apparently giving him the necessary three out of four criteria for placement into Algebra 1. Miguel discussed his placement into Algebra at much greater length than any other student. He explained that he had taken the Iowa test in sixth grade and scored ten points below the cutoff for taking Algebra in seventh grade but that the cutoff score had been raised from the previous year. His knowledge of the process was also evident in his narrative about the student, Juan, who was not in AVID or Algebra 1 but whose EOG and Iowa scores were similar to Miguel's. Cumulative folders at Miguel's school included elementary grade reports and I noted that his mother had written in the parent comment space to thank his teachers for helping her son each year.

Although Miguel was very quiet in class, he answered questions in interviews readily, almost eagerly. He frequently offered examples or clarifying details without prompting. For example, his explanation about not being used to going and helping his father outside was in response to a single question about whether he had any chores outside. My question about bus routes led to almost ten minutes of explanation about various schools' sports teams, the players on them, and the gruesome accidents some of the players had suffered. He also elaborated on his current need to put in a lot of effort in math class, saying that his homework for that night was confusing. After trying to talk through it I suggested he get it and show me; he told his younger sister to get it from his room, which she did. Several minutes later he sent her to get his older sister's graphing calculator. I showed him how to graph a system of

inequalities on his calculator; as the graph appeared on the screen he said “Woah!” His class had exactly the same reaction when I observed a few days later and the teacher showed them all how to use the calculator to solve the problems. His teacher told me after class that Miguel had told her of me helping him and showing him how to use the calculator.

Miguel’s family lives in a single-family detached ranch home in a subdivision situated in a rural area. Houses in the neighborhood varied in their upkeep and landscaping with most in good repair and having some plantings surrounding the house. There were several cars in the driveway, at least four of which were in regular use based on their movement between and during interviews. Miguel asked his mother about a cousin’s education while filling out the questionnaire but she told him to list only herself and his father as adults living in the house. Because of this, I am unsure about who lives in the home, although Miguel referred to his cousins (plural) at one point when asked about adults’ roles in his schooling, suggesting that at least two adult cousins are part of the household. The people listed on his form included his parents, an older and a younger sister, and one adult cousin. His mother was a housecleaner. According to Miguel’s mother, his father had recently been laid off from the glass installation company he worked for and was looking for work, while Miguel listed gardener as his father’s job. His mother and I talked about the troubles in the economy and the sky-rocketing unemployment rate and she asked whether my husband’s construction crew had any jobs available.

Despite Miguel’s mother’s caution about revealing the residents in the house to me, she was friendly, inquisitive, and answered questions readily with explanations when I appeared not to understand. When she expressed some concern over the amount of homework Miguel had in comparison to other boys his age, I suggested that it might be due,

in part, to him taking an advanced class. She asked questions to clarify what I meant and although she knew that he was taking algebra she did not appear to fully understand that it was an accelerated class or that Miguel had gone from a regular seventh-grade math class one year to Algebra 1 the next without taking eighth-grade math. She was the most inquisitive parent I interviewed in terms of me and my family, commending me for trying to teach my daughter Spanish as well as English, asking about my in-laws and visiting Mexico, and wanting to know where my daughter was while I came to their house in the evening to conduct interviews.

S9 Eduardo

Eduardo's Perspective

I don't want people to think that I'm always playing around. I can be serious when it's really needed. But I don't want them to think that I'm all boring and stuff, either; I can have fun.

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I think I'm good at math but not exactly the best. Sometimes I look at what the teacher is doing and I get really confused. And then when she explains it more and the book has visuals and everything then I finally get it like after a minute or so. I think there are kids in the class that get it faster than me. I'm not the worst, either. But I had to work to get it and some people just get it. I don't want people to think that I'm irresponsible. I want them to know that I am responsible. I think if people don't know me, sometimes they, I mean, if they know me they know I am responsible. In second grade I got in AIG math. I didn't know what it was for. We used to do worksheets with problems and we got stuff like prizes out of a catalog. Most of the time I didn't try that many 'cause they were kind of hard. I got a medal for that; I still have it somewhere. I realized in fifth grade that I was good at math. There was a day near the end of the year, at least the second half, they split the classrooms into three

groups for math and I was in the highest group. Being put in that group made me realize I was good. Well, and I did pretty well in that group so I realized I wasn't clueless. Before 7th grade I didn't pay as much attention. Then last year we did more stuff, more projects so I found out more about math. The projects were different - one of them was interesting because you had to draw a scale figure of your room and I like to draw.

I don't really study for math when there is a test. Most of the time that's because I don't really want to and I don't think I need it. I do my homework every day and I have a desk and most of the time there's nobody here while I'm working - it's quiet. Once in a while my little brother comes in here. I can do good, so I always try to do good. If I get something bad like a C or a D then I know that I slipped up somewhere. And I have to get over it because the grade is there but then I know I have to be more careful about not making those kinds of careless mistakes. My parents always tell me to do well and when I get good grades, I'm pretty sure they're proud because they show it. And they tell me to do well because it will help me in the future and they push me to do my best. My parents, mostly my mom, used to ask me stuff during the summer so I wouldn't forget. When I was younger she made me do flash cards and stuff and when I was learning times tables she worked with me. In the past she had to do more stuff but now I just do it myself.

With a good math teacher it's fun. If you don't get it she makes you understand it. She explains, goes out of her way. The other math teachers I had, they were strict but not so strict. They didn't let you have as much fun. My teacher now lets you do more partner work; she's not as uptight making you do a lot of worksheets and not letting you talk at all. With a good teacher you know they want to help you, they don't sound impatient when you ask a question. My worst ever teacher was mean. If you didn't have your homework she got really,

really mad at you. Sometimes I felt scared telling her I didn't understand something because I was afraid she'd get mad. She was really strict. My teachers know I'm good and everything. But I'm pretty sure they also know that I'm kind of talkative in some classes. And teachers will comment on my grades from other classes: that I'm doing well. In the beginning of the year I really, really talked a lot in math. The teachers have meetings and everything and I guess one time the subject came up and my social studies teacher was like, "You shouldn't talk so much in math class."

I've never really had a big problem getting something in math. Most of the time if I have any difficulty I just ask the teacher and she helps me understand it. Or I ask somebody else that I know can answer it.

I stopped going to ESL in fourth grade. I was supposed to continue - well they asked me if I wanted to but I didn't want to. In Kindergarten I didn't know any English and then in first and second grade sometimes it was still hard. You got stuck if you wanted to say something and you couldn't say it; it was frustrating. Or you heard people talk and you didn't know a word they used - and that still sometimes happens. It only affects me now in language arts because you're dealing with words, but mostly it's not a problem. When I was first learning English they taught me regular words, everyday words, and how to write. In 3rd grade it was a little bit helpful but then I thought it was boring and I didn't want to take it any more because I already knew that stuff. I thought math was easier back then because numbers are the same in English and Spanish. So I didn't have as hard a time getting what the teacher was saying. She didn't have to talk that much, we just did the problems. I was six when we came here from Mexico and I was already in school but I couldn't read and it was hard keeping up. And I also wasn't really good at reading in second and first grade. But in third

grade they also put me in the AIG reading. Now I don't mind reading but it's not my favorite hobby. During the summer I do read books that I really want to but during school there's not as much time and they make you read. I don't like fantasy books, I like more reality books. Learning to read was hard because even though I knew how to speak English I would read really slowly and other people would read faster. I didn't understand. And when they made you read out loud I wouldn't know how to pronounce some of the words.

Mostly I hang out with the same people here and at school, people who live here. And they're mostly Latinos, Hispanics. At school I also hang out with some other people. My friends are good students in some classes but in some classes they struggle - like the same classes I struggle in because they're really hard. I think they are good students, just some of them don't do very well. And sometimes they ask me for help, like they say, "I don't get it." They know I'm smart, they make people know that I'm not stupid. I'm not sure what my friends think of me as a math student. We don't really talk about it. They just know I'm smart. None of my friends that live here are in my math class but two or three of my friends that I really get along with are in it. Sometimes my friends want to go out or something and mostly I do go out. But sometimes I had homework that day and I went out and then I have to make it up. But it's not that big a problem. I don't think friendships and math have ever interfered with each other. Well, most of my friends back then, I would be in a higher class than them because they were in the regular class and that's probably the only thing - my friends were like, "Oh you're such a nerd" and everything. But you got over it and you made other friends in that class and either way you wouldn't really talk about it.

My family is the most important thing to me. Also school, I guess, because without it I wouldn't be as successful in life. School and sports are the same because without school

you wouldn't have sports. I was in soccer during soccer season. Oh, and band. There's a jazz band and I'm in that and there's a regular concert band. I like concert band better because it's easier. That's the class I talk the least in because he doesn't let us talk. But there are more people in that class, you don't feel as isolated. Sports help me be motivated because if you have bad grades you can't do sports.

The advice I would give to another student is that you have to pay attention, put effort into it. When you get home you have to think about it and remember what you've learned - like in your homework and stuff. And you have to pay attention not just in that class but in every class. That also helps them, their - this isn't the right word but - their mind capacity or remembering stuff, it will help them get better. That's what happened to me. I didn't know that would happen but my parents told me that I needed to get better because of the future. They gave me lots of examples. I don't really like getting in trouble for bad grades and everything so I don't want to get in trouble for a bad grade. My parents didn't tell me I'd get in trouble for getting a bad grade but that you wouldn't get a good job and like that.

Parent Perspective

Well, I think Eduardo is a pretty quiet kid but he likes to have fun, he likes having lots of friend. He likes reading, soccer, and music. Eduardo has always done so well in school! I feel very lucky because I haven't had any problems with him. I feel he learned a lot from me because when he was born I was studying and I think that has helped him. I was studying to be a social worker in Mexico but I don't do that now because, first, I didn't finish my certification, also I still don't speak English perfectly, and the third thing is that I had the two babies so now things are more complicated. When Eduardo was very little, well, I have a habit of counting, so he caught the habit from me. When we go on long trips we start to add

and multiply and play with numbers. That was always my idea because I'm scared of numbers and I don't want that to happen to him. And so it went from one thing to another with cards and music. I remember at times he was very stressed by homework when we first got here. When he was in second or third grade he would start to cry because he didn't understand and I would comfort him. I tried to help him but I think wasn't really much help. I don't think I explained the work perfectly but I told him to relax and that's what I did for him.

Since elementary school he's had good grades in every subject. The teachers have almost always put him in higher groups, we've hardly decided anything for him. If he thought he couldn't do it I didn't press him. I've always said that if the teacher says he should be in an advanced class it's because he can do it. If he has the capacity to do it then he should do it. I haven't interfered with what he takes, they just send us notices that he's going to participate in something. Sometimes when he gets something like this study or a special class I ask him, "Do you want to do this?" And he might say that it's going to interfere with his classes but he's quick to realize that he can do it. But in the end it's up to him: if he says no, then no. I tell him, "If you don't want me to sign, then I won't."

I think that to teach math one has to be very capable, not only in mathematics but also pedagogically. Because the material is complicated and if you don't have patience for the kids you'll do a terrible job. The teacher is so important: how they run the class, the personality. If the teacher is very serious, very sharp, well, that's how it is. But if the teacher is cheerful, the numbers here and there like games, then it's easier to learn. Of all the classes pedagogy is most important in math. In the others it's important too, but, honestly, not as much. To like both kids and mathematics is best because they have to teach. Perhaps it's

good luck, but Eduardo has had good teachers and his teachers have said, “how great that Eduardo is in my class. How nice that he’s here. I like having him in my class because he’s attentive.”

I clearly remember an experience we had. He went to a magnet school because he wanted to study violin and this school had violin classes. But I didn’t like it. I saw that the students there were too advanced in terms of their personal lives because they already had boyfriends and girlfriends in the third grade! So I decided I was wrong and we changed his school the next year. I looked at two schools in the district and they both seemed good but one of them didn’t offer art classes so we enrolled him in the other. When he was at that other school he changed how he talked and how he acted. Of course he was sad to leave his friends and felt bad at first. But when we moved here he loved it. Here it’s not like the city because in the apartments the kids are always closed in and here they can go out; it’s safer, he can play with his friends – there are kids his age here. And ever since we moved here all the boys are friends and although some have moved they stay in touch. I really like that my children have friendships that endure. Sometimes I feel like, I wish Eduardo would do more in school. He brought home a low grade one time and I said, “Why isn’t this almost 100?” or he’ll bring home an A and I say, “Why don’t you get an A more often? Because you could do it but you don’t.” My husband will say, “Calm down, it’s OK.” He’ll distract me. But, really, it requires so much. I took away his videos. The first thing is that he can’t use his videos or go out. And he tells me, “But I’m going to do the same thing as if I was here.” I tell him, “I don’t care, you’re not going out.” But haven’t done that more than once. I haven’t needed to. Punish him? No, on the contrary.

His friends come to play, nothing to do with school. But I’ve always told him, since

he was little, “If you don’t go to school one day or for some reason you don’t do your homework you have to talk with someone and tell them you will bring it the next day.” The others often don’t do their homework. I remember an occasion when I went to see another señora precisely because Eduardo was sick. I asked her if she could give me the homework because Eduardo hadn’t been in class. The señora wasn’t sure which was the right paper, so I asked her to bring the backpack and he had all the homework in there, not done! I thought, “What a pity.” I told her I’d make a copy of the homework so I could bring it back but she said, “No, no,” that I should just take it. Look, in this situation the child isn’t to blame nor the school, it’s the parents. I think, what can you do, what are you going to do with your life? Where do you want to go? I think many parents I’ve talked to say that now they can’t help their children because now they’re in middle school and now they don’t know what to say. I say that it isn’t important if you don’t understand. They’ll say that it’s hard, that they don’t search for help because there aren’t tutors or other options. I give them this advice: ask for help from the school. Maybe there are older students who can help. They’ll tell me they talked to a teacher. One has to get more involved: OK, one teacher couldn’t help but, yes, there is someone who can help. They feel limited because, “How can I go to the school if they’re not going to understand me?” These kinds of things. I always say to my husband, “It’s your obligation, right?” You’re here; you have to do it.

When Eduardo does well I usually tell him it’s what I hoped. Sometimes if he was worried about it I tell him, “Good, son. You did really well.” I want him to go to college. Now that he’s in middle school I told him that he has to think about what he wants. “Just think about what you study, look on the internet, ask people what they recommend, because now that you’re in middle school you have to choose classes that you’ll need for what you

want to do. You have to plan your studies,” things like that. He can’t quit algebra, for example, because if he wants to be an architect or engineer he’ll need it. He still tells me, “I don’t know.” The school can help, for example, when he went to the interview at the high school my husband went with him because his English is better than mine, and they began to discuss what he wanted. I think that’s good, that it’s good for us to talk about it. We try to understand and he doesn’t understand. I believe that it takes a lot of patience on both sides. That we do this, explain why yes and why no, that’s good too.

I would like to be more involved in my son’s school but I don’t do much because of the language barrier. But when he was in elementary school, you know the kids are more relaxed about that. I could tell him, you come with me because I need you to help me understand. In middle school it’s different. I’ve met the majority of his teachers and I like to go to the open house and things like that. I don’t talk much but at least I meet them. When I went to sign his first report card at least I knew where I was going in the school. One thing that I like very much is that I feel there’s good security, like when you sign in. Another thing is the question of situations like snow days, they call on the phone to inform me what’s happening. I like having that communication. I get information about events through the computer, in English. If I don’t understand then I call.

There was a time when Eduardo’s father had to talk to him because Eduardo didn’t want to learn mathematics if he wasn’t going to use it. For example, square roots: he said he didn’t understand how he would ever use them and they just complicated life. His father told him, “Maybe right now they’re not useful to you but you’re going to use them in the future. Especially if you want to study something that uses math.” So that made Eduardo say, “Oh, that’s why.” It’s like I do: always explaining why we do things. His father, for instance, tells

him, “I don’t want you to stay like I am. I had an opportunity to go to school and when I could do it, I didn’t. And now that I want to do it it’s much more work. I don’t want that to happen to you.” It’s not so much whether it’s a complete family with a dad and mom, but the fact that one of the two cares for the child. That they pay attention, that’s all. OK, I’m working all day but you know that I’m working for you and what you need. I’m working for you and you have to do well in school just like I’m working well. These are the things I feel would be better. Before I had the little ones I worked, too. In the evenings I would go to work and Eduardo was here with his father. I said, “Tell him to do his homework. When he’s doing his homework check to make sure he’s really doing it.” And now, for example, it’s not necessary to do that. But I tell him, make sure you have everything in order because you never know which day I’m going to look at what you write. So he knows he has to be a little more careful. On the weekend I check his homework, his calendar, his organization. I don’t like him to take the attitude, “I’ll do it another day.”

One time we were doing something together and chatting and I asked, “Why don’t you get better grades?” – my favorite topic. And Eduardo told me, “You know, the people who get good grades aren’t looked upon favorably at school.” And I said, “Since when is getting good grades antisocial? You can’t worry about that. What’s important to me isn’t what they say to you. You have to do what you have to do because you are the one who is going to live with it and who is going to get the final accounting of what you do or don’t do. Be careful with these opinions. If everyone was jumping over a cliff, are you, Eduardo, going to go too?” He told me no. I told him he needs to be responsible. “When you have the opportunity to do something for yourself, do it! Don’t make excuses, just do it. It’s not worth worrying about what people say about having good grades or going out in the week, because

they're bad critics. If you have opportunities, take them." When we sit down to eat or at night when we talk I'll ask what happened with one of his friends that I know. Then he'll tell me something that happened or what the friend said. I try to do that because I like to know. I tell him I won't stop him from seeing his friends in case they do something bad, just be careful and think about what *you* need to do. Because that's how the world is: how you do it is how you enter the world.

And with all these questions there's my family and my husband's: they're in Mexico. Well, my husband's mother and brothers are here but his father and sisters are in Mexico. And all my family is there. But we talk on the phone and they're always telling him be careful and study well. Eduardo was 6 when we moved here so he remembers them and now he talks to them. I was studying when he was little so he stayed with my mother and she loves him so much and misses him, and he does too. He was really with her most of the time. My father was almost always working in the cane and his work was a long way away, so Eduardo didn't spend as much time with him. Eduardo will ask me why I called Mexico and didn't tell him, or how are things going there. For example, he likes soccer and my father and brother adore soccer so they talk about that. That's a big support for him: the family. Not just his father and I. And his grandmother, for instance when he gets good grades she says, oh, I'm going to buy you a toy or a shirt, what do you want? His father is like that, but I don't think we should pay him for things that he is supposed to do – no presents. His dad says, "OK, I won't give him a gift now, but at the end of the year ..." Where I studied it was very different. To get a 100 there was very difficult and you would be very tired from working to get it. Here it's not that hard. And also the resources here are so much better, like the library. Life is much easier here, though some may not have as good luck here as we have. But I tell

my son, school is all you need to do here, school and play. So do the school first and then you can play. He's come and asked if he can go do something and I'll ask, "Have you done your homework?" He's a good boy, though, and he always asks if he can do things. He eats with us every night – to me, that's very important. We can talk about his father's work and what's happening with Eduardo and his friends, maintain communication.

Teacher Perspective

Eduardo can put things together pretty quickly compared to some of the other kids who are still sitting there figuring it out. He needs to be kept busy and engaged or else he is here, he is there, he is bing, bing, bing, bing. Then when you start something new he'll be like, "What did you say? What's going on?" And he wants you to be up and moving while teaching. Not that he can't learn from the book: he's able to keep up and carry on no matter what, but he likes stimulation. He definitely needs to be with people. If I make him sit beside someone who won't talk he'll be miserable. He likes to be in contact with people. There are some that work harder than he does. Some days he does just enough but he has that strength of knowledge so that things come a little easier to him. Sometimes that's a little frustrating to the other kids because he can not pay attention and be here and there and then suddenly be like, "Oh yeah, I got that!" That's very hard for some of them to stomach. His interactions in class are energetic. There are times when you have to tell him, "Cool it down," and sometimes that's hard. And hard for him to face that he's been talking because he's usually pointing at someone else and saying it's them, not me. I can tell him "you understand this, can you go help somebody with it?" and he's usually really good about that.

All the teachers on the team love Eduardo – he's that really outgoing type. In social studies he's always debating and bringing up controversial or interesting things. He's always

impressing people with his talk and the way he understands things.

Eduardo is funny, he's outgoing, he talks. I think a lot of the Hispanic kids have the same group of friends. Like Ms Drew said, they're mostly a very decent group of kids (now, I'm not going to say there's not some who get in trouble). Eduardo is in that group and I would say he's a follower, he's not a leader, whereas when he's in the smart group he can be a bit of a leader. But he won't necessarily pull himself away from something they shouldn't be doing. He's going to be right in the middle of it, trying to defend whatever's going on. I think he also finds a lot of the people here in algebra class as friends, too. They might not be who he'd sit with at lunch, but he feels there's a connection with them. In class he's not always willing to go back and find his own mistakes, so I think sometimes other kids are like, "Why did you ask her that when you could have just looked at it and figured it out?"

I don't have any special expectations for Eduardo. I would love for him, and probably half the other students in the class, to take responsibility for his own learning. It's fun to him, it's good to him, it's there. But I don't think he knows yet why algebra is so important.

I think his parents probably came in for the conferences but I don't recall the conversation. We haven't had to call them to come in for anything in particular because he's been doing well enough that there haven't been any major waves. He has Ms Mayer for accelerated English first period and some parents just picked up report cards from her and the rest of us didn't even see them.

Eduardo gets things quickly; I can't really think of a time when he had real difficulty getting a concept so I don't know how he'd react to that.

Researcher Perspective

Eduardo was one of the three or four most talkative students in his algebra class, both

on-topic and off-topic. He was actively engaged in class discussions, answering both procedural questions and solutions. On one occasion he repeatedly asked the teacher to be allowed to put the answer to the warmup on the board. Eduardo talked to students around him, making jokes and sometimes playing with paper or pens. He was one of the first to start talking after each time the teacher asked the class to do something quietly, although on two occasions he loudly said “Shh” to the students with whom he was talking when he noticed the teacher’s attention on them. He was also restless, for example getting out of his seat four times within ten minutes after he finished his test: he asked the teacher about his bus assignment, asked for permission to go and then went to the restroom, threw something away, and asked the teacher another question. On three of the four days I observed Eduardo was one of the last two or three students to get into his seat, ready to start class. The first day I observed, Eduardo asked permission to go to the bathroom and returned with his permission forms and money for a field trip. His teacher commented to me about it being late and in cash.

Observations confirmed the teacher’s statement that Eduardo was quick to understand mathematical ideas. For instance, fewer than one third of the students who had finished part one of a test they took in one day, of whom he was one, and he was one of the first to finish part two, despite the appearance of feeling unwell. He was one of the first to recall the process for multiplying two binomials and, later in the lesson, one of the first to come up with a strategy for factoring a trinomial into two binomials.

In his interviews Eduardo seemed thoughtful in his responses. He elaborated on his ideas in response to questions and requests to tell me more but did not tell tangential stories or volunteer new ideas.

Eduardo's family lived in a single-wide mobile home with an added room, possibly a converted porch, in a rural mobile-home community. Many of the homes appeared to be old but well-maintained and there were clear addresses posted at each lot. Some streets within the community were unpaved although those closest to the entrance, where Eduardo lived, were paved and had speed bumps. There was a small store near the entrance to the community but it was closed and locked when I checked on my first visit. The household included Eduardo, his parents, his pre-school age brother, and his one-year-old sister. I conducted the interviews in the added room, which appeared to be a sort of work room that contained several unmatched chairs, a table with a floral arrangement, a nonworking television set, Eduardo's desk, and a weight bench. Several framed family photographs were on one wall. The room was cold but Eduardo explained that there was normally a space heater during colder weather but it had been put away during a recent warm spell. I did briefly see the living room and adjoining kitchen and dining area when meeting Eduardo's younger siblings. A space heater was in use there and it appeared comfortable and better furnished than the outside room.

Both of Eduardo's parents were home when I arrived for the parent interview and both greeted me. After confirming that one parent was sufficient for my needs Eduardo's father excused himself, explaining that he needed to prepare for his English class later that afternoon. Eduardo was present for part of the interview with his mother but when his younger siblings awoke from their naps he went to watch them inside while we continued the interview. Eduardo's mother was friendly and answered questions readily, elaborating on her responses and rephrasing things when I didn't understand. She volunteered additional information that seemed pertinent to her but about which I had not specifically asked. Her

vocabulary was noticeably broader than any of the other parents whom I interviewed in Spanish.

Classroom Descriptions

Ms Holmes's Classroom

Ms Holmes is a White woman with over a decade of teaching experience. I observed her seventh-grade Algebra classroom four times over the course of three months during which there were school breaks and district-mandated testing that prevented observation during several weeks. There were 28 students in the class. Diana was the only Latina in the class and the only research participant. In addition to Diana, the class included 19 White students, 5 African American students, and 1 Asian student. Ms Holmes's classroom was highly structured and interactive. Instruction was usually initiated through a whole-class discussion during which students posed and answered questions and responded to one another's comments, all guided by Ms Holmes. Students also worked in small groups, pairs, or individually during each of the classes I observed.

Ms Holmes was friendly with her students and maintained strict discipline. She shook each student's hand as they entered class each, telling them whether or not they needed to get a calculator and frequently asking about something in a student's life or telling a student to correct some sort of behavior as they entered. She also administered praise and affection freely, giving students a pat on the back or telling them how much she appreciated their participation. Students responded by talking with her in a friendly manner and making occasional jokes in class. Ms Holmes used a bell to indicate that she needed students' attention when they were working with each other; silence was almost immediate each time I saw her ring it, about twice per class period.

Ms Hayek's Classroom

Ms Hayek is a woman of Middle-eastern origin with 10 years of teaching experience. I observed her Algebra classroom six times over the course of eight weeks. There were 17 eighth grade students in the class when I began observing and one student was moved up from an eighth grade math class two weeks before my observations ended. Both Latino students and the only Latina student in the class, Rafael, Marcos, and Esperanza, were participants in the study. The other students at the end of the observation period included seven African American girls, four African American boys, three White girls, and one White boy. Ms Hayek's teaching style was loosely structured and students spent the majority of class interacting with one another in small groups and consulting with Ms Hayek either one-on-one or collectively with their groups. Each day's instruction began with a brief whole-class discussion of a warm-up problem and review of students' questions from the homework. This was sometimes followed by a brief presentation of new material before students started working on either a worksheet or problems from the textbook and accompanying workbook. On two occasions I noted that I could not figure out how students knew what they should be working on midway through class, although some students had their workbooks open and appeared to be working on that day's assignment based on questions they asked. Ms Hayek expressed a belief in having students discuss problems with one another to develop understanding (T4-IntA-09-02-09), however, the problems she assigned were not rich problems that encouraged discussion. The focus of both the students and Ms Hayek, when students consulted her, seemed to be procedural rather than on building an understanding of the mathematics.

Ms Hayek often expressed frustration at her students' behavior during class as they

moved about the room and talked during whole-class discussions. On one observation day she greeted students with a handshake at the door as they entered but was sometimes busy talking with students from the previous class as the Algebra students entered. There was no set moment when class began: one student began working out the answer to the warmup problem, incorrectly, before all students were seated on three of the six observation days and there were students still standing, walking, eating, or entering the room when discussion of the warmup began on five of the observation days. Students frequently asked questions during whole class discussions that were not related to the topic at hand; the location of materials, objections to grades, information about the homework or classwork assignment, and requests for teacher recommendation forms were among the questions asked. In addition to distractions within the classroom there were almost-daily interruptions from outside the classroom that disrupted students' work, including multiple flower deliveries for Valentine's day. One day six students were called to the media center for orientation for a school-wide activity approximately ten minutes after the class began and returned ten minutes before dismissal.

A noticeable feature in Ms Hayek's room was the degree of segregation within the classroom. The four White students generally sat together and rarely interacted with any of the other students in class. My first two observations were exceptions to this pattern: the first day the only White boy in the class was absent and an African American boy who usually preferred to work alone sat with the three White girls; the second day the White boy had returned but sat with Esperanza's group and the three White girls sat by themselves. It was not clear whether they had been allowed to select their own seats or had been told to sit together, but it appeared that students were permitted to choose their own seats as long as

they worked and were not disruptive. Students in the White group rarely participated in class discussions but completed class work, often working together and occasionally requesting help from the teacher. There was somewhat more interaction among the African American students and among the Latina/o students than between African American and Latina/o students, but it was not as marked and Esperanza did not interact very much with Marcos and Rafael in general. Marcos and Rafael sat together with an African American girl with whom they sometimes consulted and talked to during class until Rafael was assigned a seat by himself. Esperanza sat in a group with one African American boy and one African American girl; this group frequently increased to four members, the fourth varying between the White boy, Rafael, an African American girl, and one of two African American boys. The group, including the temporary members when there, worked and talked together and participated in class discussions.

Ms Anderson's Classroom

Ms Anderson is a White woman with 13 years of teaching experience. I observed her Algebra classroom once a week for four weeks. There were 37 students in the class; 34 were in eighth grade and 3 in seventh grade. In addition to the two Latino boys, Miguel and Eduardo, who participated in the study there was a Latina girl in the class who was not asked to participate because Ms Anderson indicated that her grades in the class were borderline. There were three African American students in the class and the remaining thirty-one students were White. Ms Anderson's style is moderately structured and moderately to highly participatory. Three classes I observed included whole-class instruction with some students asking questions or giving directions for the next step the teacher should take. In two cases this was followed by practice problems that the students did alone, in pairs or small groups,

or sitting near the teacher to get further help, depending on student preferences. In the other case the teacher demonstrated the use of technology to solve a type of problem and the whole class practiced together, checking their work on the previous night's homework using a graphing calculator. During the fourth class I observed the students were taking a teacher-created test for most of the class period. In general, students seemed very comfortable asking questions, making observations, or speculating on possible next steps.

Ms Anderson was friendly with her students and maintained a moderate to high degree of discipline. She did not greet students individually but many students chose to come to her desk or wherever she was standing in the room and say hello to her as they entered. She frequently used endearments such as "dear" or "darling" when speaking to students one-on-one. Ms Anderson was sometimes sarcastic, particularly as a disciplinary tool when a student was misbehaving. Her sarcastic comments frequently provoked student laughter and were routinely followed within a few minutes by a positive and affectionate comment to the student at whom the sarcasm had been directed. Among the personal items displayed around her desk were several affectionate notes from students. Students were obviously used to such routines as the homework check, coming up to show her their completed homework in role-book order without prompting. Ms Anderson permitted general conversation during such routines but was able to quickly bring the room to order and quiet when she stood and began talking in a public voice. Students occasionally moved about the room without first asking permission for such things as putting an item in the trash or sharpening a pencil. The movement did not appear to disrupt class at all and, in fact, those students most inclined to talk or play when seated were observed to be discrete, though not surreptitious, when moving about the room.

Stressors

My search for stressors might more accurately have been called a search for risk factors. By this, I mean that when analyzing the data for stressors I looked for circumstances in students' lives that matched my pre-conceived notion of a stressor based on my perspective and risk factors identified in literature. I also coded some other parts of the data as stressors based on evidence that they were or had been troubling to the student. I discuss my identification of stressors or risk factors and the relationship between my positionality and identification of stressors and risk factors at greater length in Chapter 5.

Analysis indicated numerous stressors, many of which were evident in more than one case. Some stressors were identified as such by the participants themselves, including teachers or parents. Others were either mentioned without being identified as negative or were inferred based on my observations. Poverty, limited academic support at home, limited or strained parent-child relationships, immigration and separation from extended family, learning English, school changes, negative pressure from peers, difficulty with teachers, racism, and pressure to succeed were stressors that affected more than one student. In addition to these stressors, one student was adopted. Marcos indicated that he had to quit the baseball team due to unspecified problems at home. His discomfort during the interviews at the school indicated some other stressor but I was unable to determine its nature. Miguel had moved directly from a regular seventh-grade mathematics class to algebra, and had not been exposed to pre-algebra concepts that students in advanced seventh-grade mathematics or pre-algebra would have seen. Both he and his teacher identified this lack of preparation as a stressor for him.

Figure 3 is a matrix of students and stressors. An X in a cell indicates that I found

evidence that the student named at the top of the column experienced that stressor. An interrogation mark (?) indicates that there was less clear evidence but that I found a high likelihood that the student was affected by that stressor. The word “No” indicates that there is evidence that the student did not experience that stressor. An empty cell indicates that I did not find evidence of that stressor in the data. It is possible that some cases a student was affected by a stressor but I did not find evidence for it in the data; thus, an empty cell does not mean that the student was unaffected by the stressor. It is also possible that I misread the data in some cases and a student did not experience a stressor despite an X in the cell.

Figure 3: Matrix of stressors and students

| | Diana | Rafael | Esperanza | Marcos | Miguel | Eduardo |
|---|-------|--------|-----------|--------|--------|---------|
| Poverty | No | | ? | X | X | X |
| Limited academic support at home | No | X | X | ? | X | X |
| Limited or strained parent-child relationship | No | X | ? | X | X | |
| Immigration and separation from extended family | | | | X | | X |
| Learning English | No | ? | X | X | X | X |
| School Changes | No | X | No | | X | X |
| Difficulty with Teachers | X | | ? | | X | X |
| Negative Pressure from Peers | X | X | X | X | X | X |
| Racism | X | | | X | | |
| Pressure to Succeed | X | | X | X | | X |

Poverty

Lack of money was mentioned explicitly as a problem by Miguel’s mother, who brought up money, inability to pay for college, and worrying about money more than once in

her interview. Poverty appeared to be an issue for Marcos and Eduardo, as well. Marcos's mother was the sole adult in the household and worked at a fast-food restaurant. His cousin worked as well and attended high school. Eduardo's family also had only one working adult, although his mother had also worked prior to the birth of Eduardo's two younger siblings. The family's use of space heaters and Eduardo's late payment of the field trip money in cash suggested that money can be a problem for the family. Although it was less clear, Esperanza's family may also have been struggling financially; one older sister worked two jobs, in part to pay for college, and her mother talked of needing to find work because her husband did not have much work at present. The only participant for whom it appeared certain that poverty was not an issue was Diana.

Limited Academic Support at Home

Diana was the only student who had a family member who was routinely available and could help her make sense of algebra when she had questions. Esperanza and Marcos both had older, high school- or college-aged relatives at home who were sometimes available and could answer some questions about homework. Despite her sisters' help, Esperanza reported seeking web videos to help her figure out her math homework on multiple occasions, suggesting that they were either unavailable or unable to help. Marcos qualified his cousin's helpfulness, stating that she was helpful when she was around. The other three students had no one available at home who could help them with algebra-level mathematics. Several parents did provide other kinds of academic support or had helped their children with mathematics in earlier grades; these are discussed with other protective factors.

Limited or Strained Parent Child Relationships

Both Rafael and Marcos lived in single-parent, female-headed households. Marcos

reported talking to his father, who lives in Mexico, on the telephone. Earlier, Marcos lived apart from both of his parents, spending six years living with his maternal grandmother. During that period he talked to his mother on the phone and saw his father during school vacations. Neither Rafael nor his mother mentioned Rafael's father during our interviews.

Marcos lived with his mother but in her interview she said she had very little time to spend with her children. Esperanza lives with both parents; she did not specify whether or not her father had the mathematical knowledge to help her with her homework but did say that he was not available to help with homework. Although father-daughter drum lessons had been planned to teach her to play drums she said she had not had a lesson in a while because it was difficult to coordinate their schedules. Miguel said that his dad wanted Miguel to spend time with him outside and did not understand why Miguel was not more like his cousin. Miguel explained that unlike the cousin's dad, his father didn't spend a lot of time with him when he was younger and so Miguel was more used to his mother's ways than his father's. Miguel's mother reported that he is more fluent in English than Spanish and that it sometimes leads to difficulty communicating.

There was some evidence to suggest communication difficulties between Rafael and his mother. His mother asked me about high school alternatives in his district. She was unaware of the choices available to Rafael and unaware that the deadline for applying to special programs had passed, although Rafael knew of at least one alternative program and the date of the deadline. Marcos attended the same school as Rafael and his mother spoke of attending a program for parents to inform them of their children's high school options. This evidence may also indicate a communication breakdown between the school and the Rafael's mother.

Immigration and Separation from Extended Family

Self-report and examination of the students' cumulative folders showed that all but one of the parents and all but one of the students were immigrants to the USA. Some of the students may have been too young to remember the move. Marcos and Eduardo were both old enough to remember moving to the USA and felt a connection to their country of origin and family that remained there. Marcos stated that he missed Mexico and that moving to the USA and leaving family in Mexico was hard. Marcos lived with his grandmother for six years and Eduardo's grandmother cared for him while his mother attended school; thus both boys experienced separation from a primary care-giver. Marcos also talked of his aunts, uncles, and cousins who lived near his grandmother and whom he missed. Eduardo's mother reported that Eduardo still talked to his extended family in Mexico frequently. Both Miguel's and Eduardo's mothers independently brought up extended family and having family still in Mexico, suggesting that it is a stressor for them.

Learning English

Esperanza, Marcos, Miguel, and Eduardo all described problems related to being non-native English speakers. The problems associated with learning English were of two forms: actual difficulty speaking, reading, or writing English that affected the student's ability to participate in school and dislike of having to leave class to go to ESL classes.

Eduardo spoke of having been frustrated when he started school because he could not understand others' words and at the difficulty of wanting to say something but not knowing the words in English. He found ESL classes useful at first but later found it boring and chose to stop when given the option to stop or continue. Miguel did not recall the process of learning English, in part because he spoke it at home with his sister from a young age, but did

recall that he had been a poor student in Language Arts when younger. He had an ESL class once a week when the study was conducted and said that although it was sometimes useful and sometimes fun because he spent most of the time talking with a friend, it was also annoying to leave class to go to it at times. Miguel expressed frustration at having failed to score high enough to be exited from the ESL program, especially in light of his placement into advanced English class. Marcos said that ESL classes had been useful. Although he stated that he had exited from ESL, he acknowledged that having to use English was still an issue for him and that he preferred classes in which there was less reading; he also left class with the ESL teacher one day that I observed. In addition to ESL classes, Marcos cited the assistance of other students in his sixth-grade mathematics class as having helped him understand that material. His teacher noted that his English was not as good as Rafael's and Esperanza's and his mother said that English had been very difficult for him in prior years.

Esperanza acknowledged having known only a little English when she started school but focused on the inconvenience of leaving class to go to ESL and missing fun activities. Although her school achievement in English was high, I noticed that her spoken grammar was poor.

Eduardo, Marcos and Miguel all reported that mathematics was easier to understand than other classes due to language, either at the time of the study or earlier.

Rafael's, Marcos's, Esperanza's, Miguel's, and Eduardo's mothers all indicated a preference for conducting our interview in Spanish, although Rafael's mother began to reply in English partway through. Two of the mothers expressed a sense of being limited because they were not fluent in English. Miguel's mother explained that she generally asks a lot of questions and that there are many things she would ask if only she knew English. Eduardo's

mother expressed a desire to be more involved at his school but being unable to due to the language barrier. Eduardo's father is more fluent in English than Eduardo's mother but was on his way to an English class the day I conducted the parent interview. In addition, Marcos's mother felt that Latinos may sometimes be ignored by the schools and suggested language as a possible reason.

Although Diana, her parents, and Rafael's mother spoke English, during our interviews all of them brought up fluency in English as an issue that creates difficulty for some Latina/o students. Rafael's and Marcos's mothers also mentioned this as a general problem, not specific to their circumstances.

School Changes

Three students, Rafael, Miguel, and Eduardo, attended three or more schools by the time they reached eighth grade. In each case the student or his mother reported some negative effect of the changes. One of Rafael's moves resulted in him moving from an advanced math class to a regular math class; he felt insufficiently challenged in the regular class and after another school change, and with a teacher's encouragement, returned to advanced classes. Miguel's family moved from one district to an adjoining district and his mother reported that he had less support at first in the new district but then changed to another school where the teachers were more supportive. Eduardo moved from one elementary school to another for a year and then to a third the following year. His mother reported negative changes in his behavior during the year he spent at the second school and that he missed his friends when moving from school to school.

Negative pressure from peers

All of the participants reported some type of negative reaction from peers regarding

their achievement in mathematics. Diana and Miguel reported the lowest levels. Diana suggested that people might say “Oh, nerd,” as a general reaction to someone who likes mathematics but did not report that anyone had said it directly to her. Miguel’s stated that “My friends are used to me and Eduardo doing well, it’s not awkward. But sometimes if one of the other people gets an A on a test or something they’ll make a big deal out of it.” This suggests that doing well is something to be awkward about. Rafael, Marcos, and Eduardo all reported that their friends sometimes called them “Nerd” but that it was in a joking manner or did not affect the friendships. Marcos also suggested that kids “wanting to mess with you, fight you” might be a source of problems in school, though he did not specify the cause. Data for Esperanza and Eduardo reveal that they have both received messages that high achievement is not looked upon favorably by their peers. Esperanza stated that her friends did not think of Fs as cool but that other students, not necessarily Latina/o, did. Eduardo’s mother reported him telling her that students who earned good grades were looked upon unfavorably by other students when she asked why he did not have better grades.

Difficulty with Teachers

Strict teachers were mentioned as having been difficult for students in three cases, twice by students and twice by parents. Miguel and Eduardo each described his worst math teacher as excessively strict, to the extent that he was afraid of her. Miguel also described his best math teacher ever as “strict, mean, evil,” but credited her with inspiring motivation as well as fear. Miguel’s mother and Diana’s parents described situations in which their children were sufficiently upset by a teacher that one of the parents felt it necessary to go to the school and talk to the teacher. In both cases the parent concluded that the teacher was merely strict and not ill-willed. (Note that there are some protective factor elements in these stories as

well: in both cases the parent took the child's reaction seriously enough to go to the school to try and sort things out. The parents' reactions may also have been a way of helping their children learn to code-switch or accommodate school culture.)

In addition to the strict teachers, Esperanza cited disliking a teacher or having a teacher dislike you as a possible source of difficulty in school. She did not specify whether she had a particular example in mind or not.

Racism

Three participants made explicit comments regarding racism. Diana's mother spoke of racism as a problem for Latina/o and African American students in general and as something she occasionally had to face at work. Diana herself said that many people were prejudiced and that she had run across people who were surprised when they realized she was Latina. Marcos's mother spoke of Latinas/os sometimes being ignored by the school system and gave a specific example of a time she felt her daughter had been ignored although she did not know of it being a problem for Marcos.

Pressure to succeed

Data suggest that several of the students felt high pressure to succeed, to the extent that it may be a stressor. High expectations also have a role as a protective factor and are discussed in the protective factors sections below. Diana expressed pride in being a Latina taking a high-level mathematics class because she knows that most Latina/o students are not in advanced classes. Her parents stated that although her grades were good, mostly As with some Bs, they could be better. Esperanza said that she was trying to go to college because her parents did not have that opportunity. She also relayed a comment a Latino student had made about her, Rafael's, and Marcos's uniqueness in being placed in the algebra class. Marcos's

mother said that she gets angry if he does not have all As. Miguel felt pressure to be in advanced language arts and complained that the class was very difficult. Eduardo's father told his son that he did not want him to miss out on the opportunity to get an education, as the father himself had done, according to Eduardo's mother. In addition, Eduardo's mother reported asking him why he did not get higher grades and asking why he did not get more As when he did do well.

Protective Factors

I begin this section by grouping observed protective factors according to the protective factors as laid out in resilience theory (Benard, 2004). As described in Chapter 3, these were not a priori categories. Rather, I generated categories through repeated readings of the data then analyzed how the categories I generated corresponded to the factors laid out by Benard: social competence, problem solving, autonomy, and sense of purpose and bright future within the individual herself and caring, opportunities to participate and contribute, and high expectations in the environment. Several categories were not accounted for by resilience theory (Benard) but appeared to be potential protective factors. I grouped these categories into three factors: Responsibility, Family Attitudes Toward School and Mathematics, and Modeling Resilience and Deliberate Actions to Promote Success. These three additional factors follow the resilience theory factors.

Figure 3 is a matrix of students and protective factors. An X in a cell indicates that I found evidence that the student named at the top of the column experienced that protective factor. An interrogation mark (?) indicates that there was less clear evidence but that I found a high likelihood that the student was supported by that protective factor. The word "No" indicates that there is evidence that the student did not experience that protective factor. An

empty cell indicates that I did not find evidence of that protective factor in the data. It is possible that there are cases in which a student was supported by a protective factor but I did not find evidence for it in the data; thus, an empty cell does not mean that the student was unaffected by the protective factor. It is also possible that I misread the data in some cases and a student did not experience a protective factor despite an X in the cell.

Figure 4: Matrix of protective factors and students

| | | Diana | Rafael | Esperanza | Marcos | Miguel | Eduardo |
|-------------|--|-------|--------|-----------|--------|--------|---------|
| Individual | Social Competence | X | ? | X | X | ? | X |
| | Problem Solving | X | ? | X | ? | X | X |
| | Autonomy | X | ? | ? | X | X | ? |
| | Sense of Purpose and Bright Future | X | ? | ? | ? | X | X |
| Home | Caring Relationships | X | X | X | X | X | X |
| | Opportunities to Participate and Contribute | X | X | X | X | ? | X |
| | High Expectations | X | X | X | X | ? | X |
| School | Caring Relationships | X | X | X | X | X | X |
| | Opportunities to Participate and Contribute | X | ? | X | X | X | X |
| | High Expectations | X | No | No | No | X | X |
| New Factors | Responsibility | X | | ? | X | X | ? |
| | Family Attitudes Toward School and Mathematics | X | X | X | X | X | X |
| | Modeling Resilience and Deliberate Actions | X | | ? | X | X | X |

Individual Factors

Benard (2004) identifies social competence, problem solving, autonomy, and a sense of purpose and bright future as individual characteristics associated with resiliency.

Social Competence

Benard (2004) included the ability to elicit positive responses, communication skills, the ability to code switch, empathy and caring, compassion, altruism, and forgiveness as major indicators of social competence. All the student participants had the ability to elicit positive responses from others based on my reactions to them and my observations of them in class and on teacher reports of the teachers' own reactions, what other teachers on the teams said about the students, and students' interactions with their peers. Rafael elicited less positive reactions from teachers than the other students but teachers recognized his intelligence and ability to contribute interesting points to class discussions. Rafael's interactions with the non-Latina/o students in class were limited; his interactions with Marcos and with other students in the hallway suggested that he was very social with his peers outside of class.

All of the students except Esperanza were in honors Language Arts as well as an advanced mathematics class, an indicator that their communication skills were good. All but Rafael were articulate and expressive in some of their answers during interviews. Rafael's answers to interview questions were short and he did not elaborate, even when I asked follow up questions. Although Marcos frequently gave very short answers during his interviews he was willing to elaborate on some questions. His body language, including looking away and squirming, led me to believe that his reluctance on other questions was due to discomfort rather than poor communication skills.

There were limited indications that students engaged in effective code-switching. Neither Rafael nor Eduardo talked about school much when outside school. Marcos was generally attentive and focused on academics while in class but according to his teacher sat

with a group of lower achieving students at lunch and was well-integrated into that group.

Eduardo stated that he made breakfast on weekends motivated by his concern that his parents did it all week, showing empathy and caring. Otherwise there was little evidence of empathy, caring, altruism, and forgiveness in answers to the questions I asked.

In addition to these specific factors, Diana, Esperanza, Marcos, and Eduardo were described by their teachers as well-liked by their peers and doing well, socially. Rafael's teacher described him as friendly but observed that he did not interact much with the other students in her class except for Marcos.

Problem Solving

Important components of problem solving, according to Benard (2004), are planning, flexibility, resourcefulness, critical thinking, and insight. Data revealed evidence of these traits among the students. Marcos had applied to an early college high school program, showing evidence of planning for the future and resourcefulness. Miguel was also planning to earn college credit during high school through the program in his district. Evidence of planning on a smaller scale included Diana's routines for doing homework and putting material aside to ask her father about when necessary and Esperanza's purchase of a book to help with her learning. Esperanza's resourcefulness in seeking alternate resources to help her understand math suggested good practical problem-solving skills. Students were generally resourceful in seeking help for homework and found friends or other teachers who could help if their mathematics teacher was unavailable or had already attempted to answer their questions unsuccessfully. Diana's teacher reported that Diana had good critical thinking skills, an opinion shared by others on the team. Miguel's analysis of the difference between his best and worst teachers (both of whom were "mean" and "strict") and his analysis of the

situation with his father revealed critical thinking skills and insight, as did Eduardo's analysis of the importance of paying attention in one class and its effect on other classes. Diana's, Miguel's, and Eduardo's teachers made comments that indicated they and other teachers felt the students had insight. All of the students showed insight in analyzing the school situations they talked about in the interviews, such as characteristics of good teachers or students, things that make mathematics interesting for them, and analyzing their own strengths and weaknesses.

There was evidence that students had a problem-solving frame of mind in a more mathematical sense, as well. Four of the six student participants talked about liking to solve math problems or liking a challenge. For example, Diana repeatedly spoke of liking to solve equations and competing to solve problems with her father. She characterized other classes as similar to math in that they provided a challenge; she liked the challenge in general but felt that in some classes the motivation for meeting the challenge was to preserve her good grades while mathematics offered an intrinsic reward. Rafael viewed mathematics as a puzzle to which he wanted to find the answer. When asked about word problems, Rafael was the only student who suggested that the task of creating an equation to model the situation in a word problem was enjoyable, it being another piece of the puzzle. Esperanza and Marcos both said that they liked challenges when asked about what they like about mathematics.

Four of the participants indicated that making sense of mathematics was important to them. Diana gave "that it always makes sense" (S1-Bio-08-11-14) as one reason that she liked mathematics. Both her mother and her teacher confirmed that it is important to Diana to be able to understand, not just do, mathematics problems. Esperanza phrased her desire to make sense of mathematics from a negative perspective, stating that one of the things she

disliked was that sometimes things did not make sense. Miguel stated that he would feel awkward and lack a sense of accomplishment if he did not understand something in mathematics, even if he could do problems and maintain a good grade. Eduardo reported realizing that he was good at mathematics in fifth grade yet did not start liking it until seventh grade because at that point he began understanding more. During his interviews he made repeated references to “getting it” and understanding.

Diana, Rafael, Miguel, and Eduardo emphasized the importance of asking for help when one needs it; each also described asking the teacher for help and turning to friends for help when necessary. Esperanza included asking questions as a behavior good students engage in and described working with a friend who could help her with Algebra, though she did not emphasize it as important. Marcos said that he asked the teacher for help and would ask a friend if the teacher’s explanation was insufficient, though he did not emphasize the importance of asking questions for success.

Autonomy

Autonomy, according to Benard (2004), includes a sense of reliance on oneself to effect change and a belief in one’s ability to do so, a positive self-image, adaptive distancing, resistance or accommodation without assimilation, self-awareness, and humor. All of the students showed some evidence of a belief in their own abilities to effect change, to varying degrees. Diana, Rafael, Miguel, and Eduardo all indicated that how well they did in class depended largely on their own actions and that increased effort would result in higher achievement. In Rafael’s case, however, he appeared to assume no responsibility for stopping himself from talking during class. He acknowledged that distractions in class were a problem for him and credited the teacher’s action in assigning him a different seat with helping to

reduce his distractions. Rafael's description of gaining access to a higher-level mathematics class by asking the teacher to be put in a different class showed self-reliance. Esperanza suggested that more effort on her part might be able to improve her performance but then expressed frustration at not having class notes to refer to at home; she overcame this problem by finding other resources. Marcos was less definitive than some of the others but related difficulty, achievement, and how much attention he paid in class. In addition, Marcos described taking action to raise his grades in other classes by completing extra credit assignments when necessary. In applying to the early college program Marcos showed self-reliance by taking action to obtain educational opportunities. Diana and Miguel both reported messages they had gotten from others and apparently internalized about their ability and responsibility to act on their own behalves, Diana from her parents and Miguel from his sixth-grade teacher.

Diana, Rafael, and Miguel expressed positive self-images related to mathematics, stating on their questionnaires that they were good at it. Marcos and Eduardo gave more nuanced answers, suggestive of less self-confidence. Marcos wrote that he liked it, most of it was easy, and that he asked when he didn't understand. Eduardo described himself as "not so good, not so bad" (S9-Ques) and noted that some ideas took effort to understand and that he was not the best student in class, despite his teacher's observation that he was very quick to understand.

I found evidence for two possible instances of adaptive distancing in the data. One was when Esperanza described a "good math student" to me and I asked whether she fit that description. She responded that although she did not fit the description in her current class she felt she would return to those positive behaviors when given the opportunity in the future.

She felt her mathematics class lacked organization and ascribed the difference between her current behavior and what she felt was a “good student’s” behavior to the situation rather than something inherent to herself. Miguel’s withdrawal from his father, by whom he seemed to feel rejected, may also have been an instance of adaptive distancing. In addition, both Esperanza and Miguel showed a related trait in their ability to withdraw from a group rather than engage in negative behaviors. Esperanza did not sit with Rafael and Marcos in class and Miguel’s teacher stated that he would choose not to participate in negative behavior initiated by his group of friends.

Students showed varying degrees of self-awareness in the interviews. However, as with some other factors, a lack of evidence in the data is not a good indicator of lack of self-awareness since distrust of me could also explain it. Some examples included: Diana’s story about figuring out how to get her homework done when staying with her god brother; Esperanza’s statement that middle school mathematics was harder because of the content, changing classes during the day, and outside distractions; Marcos monitored his need to pay attention in class according to how difficult the material was; Miguel realized that he did not like to participate in whole-class discussions; Eduardo realized that his performance in different classes was related. Miguel showed a capacity for reframing his negative experience with his “best teacher,” whom he feared but nonetheless credits with instilling motivation in him. Some of Eduardo’s statements seemed contradictory, suggesting limited self-awareness. For instance, he stated that he had not done very many problems in a second-grade activity but also that he had gotten a medal and, more recently, that friendships and academic achievement did not interfere with one another but that he sometimes went out when he should have been doing homework and that he had had to find new friends in his other class

because his old friends called him a nerd.

Diana, Rafael, Marcos, and Eduardo all showed a strong sense of humor. Diana's sense of humor and ability to entertain others was described by her teacher and parents and I observed it during classes. Rafael was frequently seen laughing and making jokes. Marcos sometimes joined Rafael's joking in class and was described by his teacher as having a good sense of humor. Eduardo's sense of humor was obvious in class, where he and several other boys were frequently laughing together.

Sense of Purpose and Bright Future

Benard (2004) describes a sense of purpose and bright future as including goal direction, achievement motivation, educational aspirations, special interests, creativity and imagination, faith, hope, spirituality, and sense of meaning. All of the students except Marcos gave some indication of being goal directed with a stated goal of going to college. The most specific was Miguel, who wanted to earn two years of college credit in high school then continue to earn a Masters in engineering in an additional four years. Diana, Rafael, and Eduardo all spoke of going to college as the natural next step after high school but their career plans were more vague than Miguel's. Esperanza's goal direction was less clear but she did mention going to college in addition to a vague, but apparently strong, desire to do something important that would help people. Maintaining high grades in their current classes was another, more immediate goal for Rafael, Marcos, Miguel, and Eduardo whose expectations for themselves were to maintain at least a B. Diana did not give a grade expectation for herself but her parents indicated that she earned mostly As with an occasional B, suggesting that she, too, expected herself to maintain at least a B. Esperanza was, again, less specific and said only that she wanted to do well and continue in advanced mathematics

classes. Other than Miguel's specific career goal, all the specific goals students mentioned were educational aspirations.

Diana and Esperanza both said that one of the things they liked about school was learning, showing that they have achievement motivation. Diana, Rafael, Marcos, and Eduardo all had extrinsic motivators to achieve in school in the form of high parental expectations.

Five of the students had creative special interests: all four boys talked of liking and being good at art, particularly pencil drawings; Diana and Miguel had both played musical instruments for several years and Marcos had joined the school band that year. Diana's parents noted that playing piano was a source of pleasure for Diana and helpful to her in relieving stress. All six students were also athletes, with soccer a sport that they all had in common. Marcos and Miguel also played on other teams and sports seemed to be an important part of each of their lives.

There was little mention of spirituality or faith among the participants. Exceptions were Esperanza's mother, who participated in church activities every Wednesday evening in addition to church on Sundays, and Miguel's mother, who needed to change an interview date with Miguel because it fell on Ash Wednesday.

Protective Factors at Home

Benard (2004) describes three main protective factors that are at work in the home, at school, and in the community: caring relationships, opportunities to participate and contribute, and high expectations.

Caring relationships

Caring relationships are characterized by compassion, active interest, trust, and

unconditional love (Benard, 2004). Parents exhibited compassion in many ways. Diana's parents showed concern for her feelings in their reactions to her strict teacher in elementary school and other students' teasing about her height. Rafael's mother expressed the need for parents to monitor their children and talk to them when they are upset. Marcos's mother described comforting him when he struggled with English. Miguel's mother was concerned that Miguel might have an unfair amount of homework and, like Diana's parents, described how she and her husband took Miguel's feelings seriously when he had difficulty with a teacher in school. Eduardo's mother, like Marcos's mother, described comforting her son when he had difficulty in school in earlier grades; she expressed concern for his happiness in discussing his friendships.

All parents showed an active interest in their children's lives. Both of Diana's parents helped her with homework, her father helped her create an organizing system for herself, and they talked to her about being proud of who she was; they were involved in her schooling in many ways by their own report, by Diana's report, and by the teacher's report. Rafael's mother spoke of monitoring how her son was feeling and talking to him about it and was aware of his feelings about being teased at school and being included in the study; his teacher reported that Rafael's behavior improved any time she called his mother; and his mother was trying to figure out what options he had for high school. Esperanza's mother was closely involved in her children's lives, attended their sports events, and acted as chauffeur for their many activities; the drum lessons planned with her father indicated a desire for involvement. Marcos's mother had attended the school's information session about high school options and spoke of asking how things were going and checking to be sure homework was done. Miguel's mother attended school events in which he participated and talked about teaching

him respect, forgiveness, and a good work ethic; she wrote a note on each year's report card, thanking the teacher for teaching her son. Eduardo's parents talked to him about school and schoolwork and his future plans. His mother checked his homework and calendar and commented on the importance of the family eating together every night.

Opportunities to Participate and Contribute

All of the students were responsible for cleaning their own rooms and all except Miguel had other chores around the house that contributed to household functioning. Diana took care of the family's dog, occasionally did the dinner dishes, sometimes helped with yard work, and helped her mother with housekeeping. Rafael cared for the family's dog and helped with housekeeping such as taking out the trash. Esperanza was in charge of cleaning the kitchen after meals. Marcos cleaned, did dishes, and swept. Eduardo washed dishes and straightened up the kitchen after meals and helped his mother with the grocery shopping. He also helped his father on outdoor projects. Eduardo reported making breakfast on the weekends and cooking and explained that part of his motivation for was that he didn't feel his parents should always have to do it.

Parents' reports of their children's responsibilities confirmed what students reported. In addition, two parents also made statements indicating a participatory philosophy regarding household chores. Diana's mother expressed an unwillingness to pay her daughters for chores, stating that they should not be paid for participating in the household. Marcos's mother also emphasized her feeling that doing chores was part of being a member of the household saying, in this house, everybody helps.

All of the students in the study except Eduardo had younger, school-age siblings and reported helping with the siblings' homework. Eduardo's siblings were too young for school

but he and his mother reported that he helped his younger brother with daily activities, in part because they share a room. Miguel and Marcos both qualified their helping by stating that they did it when they had time. Miguel seemed resentful at his sister's need for help, in part because he reported that his older sister had frequently refused to help him. In addition to helping her younger sister with homework, Diana reported helping care for her grandfather.

High expectations

Parents in the study generally expected good grades from their children. Marcos's mother stated that she wanted to see all As. Although neither Diana's parents nor Eduardo's mother phrased it as definitively as Marcos's mother, they did indicate that they felt their children were capable of earning As and therefore should do so. No specific grade was mentioned as an expectation by Rafael's mother but Rafael said that his mother encouraged him to do well and might ground him if he did not.

Benard (2004) specifies that expectations be "youth-centered" (p. 45), meaning that the expectations be based on the youth's strengths and desires rather than being an imposition of the adult's desires on the child. There was evidence for this in each case, at least regarding choice of career. In Rafael's, Marcos's, Miguel's, and Eduardo's cases each mother stated that her son's choice of career was up to him. Diana, Esperanza, Marcos, Miguel, and Eduardo all indicated that they felt their parents would be supportive of their choices regarding careers.

Protective Factors in School

Caring Relationships

All of the students reported that they felt their teachers cared about them. Some specific examples of ways that teachers showed they cared were given by the students. Diana

noted that teachers could report students to the office for positive things. Rafael cited examples of teachers helping with school work and taking the initiative to offer that help, not waiting to be asked. Esperanza and Miguel both suggested that caring teachers checked to see if a student was okay both academically, such as when they noticed that a student's grades were low, and more generally if the student looked down. Marcos said that caring teachers knew when he was doing something he shouldn't be doing and told him what was wrong and why he shouldn't do it. Eduardo, like Marcos, valued a teacher telling him when he was doing something wrong and also said that caring teachers wanted to help when students asked questions.

Esperanza and Miguel were both in AVID and found their AVID teachers caring and helpful. Both teachers provided assistance with homework and monitored the students' grades. Miguel's AVID teacher checked in with his other teachers regularly and, according to his math teacher, had been instrumental in getting him placed into the Algebra 1 class. Miguel's teacher also reported that Miguel was helping another student's parent with mathematics through his AVID class, that he sometimes seemed excited to help her, and that the experience had improved his confidence in his mathematics ability.

Both Ms Holmes and Ms Anderson reported telling students that they cared and showing students limited physical affection, such as a pat on the back or a handshake. Each day that I observed Ms Holmes she greeted students individually at the door with a handshake and a brief greeting. Observations of both teachers included verbal communication of caring as well. Ms Hayek focused more on academic caring, such as giving students opportunities to redo work or do extra credit work or supplying them with needed materials, when asked about how she shows her students that she cares.

Opportunities to Participate and Contribute

All the students participated in extra-curricular activities at school. Every student was on a school soccer team. Marcos and Miguel were on other sports teams as well. Three, Marcos, Diana, and Eduardo, were in their schools' bands and Esperanza was on the yearbook committee. Miguel's tutoring and public speaking through AVID provided other opportunities for him to participate and contribute.

Opportunities to participate and contribute in class varied. In both Ms Holmes's and Ms Anderson's class students asked and answered questions during whole-class discussions. In Ms Holmes's class I observed opportunities for students to work in small groups and share ideas with other students there; Ms Anderson and Eduardo both reported peers working together in her class as well. Students also worked together in Ms Hayek's class but in a less structured way and there was, in general, no point at which students' conclusions were summarized and thus no opportunity to report out and contribute knowledge. Although there were nominally whole-class discussions of the warm up and homework problems, in practice these involved only a portion of the class while other students talked, worked on math problems or work for other classes, or did various other, non-academic activities.

High Expectations

The data regarding expectations for the students at school are limited to the expectations of the participating teachers, not the school as a whole. The expectations that Ms Holmes and Ms Anderson stated, both for students in general and for the students in the study in particular, were very different than those articulated by Ms Hayek.

In terms of general expectations for students in her algebra class, Ms Holmes said that she expected them to learn and master the content, participate in class, and think about the

mathematics even if they were not able to complete a problem or assignment. An additional goal she held for Diana was that Diana make more connections across topics. This was clearly stated as an additional goal, beyond the basic expectation that she understand the content and be able to solve problems. During one class I observed Ms Holmes made reference to something they would not get to until calculus, adding that students should not worry, because it was coming. In doing this Ms Holmes communicated a long-term goal for students in that class that they take calculus. Ms Anderson said that she expected every student in her class to think, to try, and to do the work, explaining that she valued the willingness to try and to work over being quick to catch on. She felt a special need to ensure that Miguel had a strong understanding and got any additional help he needed because he was in AVID; she said it was particularly important to her that the AVID students not feel that they were just barely getting by. She said had no particular additional expectations for Eduardo but that “I would love for him, and like probably half the other students in the class, to take responsibility for his own learning” (T4-IntB-S9-09-03-05).

Ms Hayek’s general expectation was that her algebra students pass the course and take advantage of the high school credit it offered. When asked about specific students, she added an expectation that Rafael be respectful. She had no additional expectations for Esperanza and talked about Marcos’s potential to be a good high school athlete when asked about special expectations for him. In addition to her stated expectations for the students during interviews, I observed that her expectations for student behavior and participation in class were not high.

Ms Holmes and Ms Anderson both referenced participation and learning in their general goals and had some form of additional goal for each student in the study. Ms Hayek’s

goals were expressed in terms of passing the course rather than learning. She had no particular mathematical goals for individual students. From these data I concluded that teacher expectations for Diana, Miguel, and Eduardo were higher than for Rafael, Esperanza, and Marcos.

Protective Factors in the Community

The data revealed little community involvement. Diana participated in a summer program associated with a nearby university that included once a week tutoring during the school year. Esperanza is in the MSEN program, also through a nearby university. Both girls reported that the programs were helpful and enjoyable.

Additional Categories

Categories that did not correspond with the factors identified by Benard (2004) included Responsibility, Family Attitudes Toward School and Mathematics , and Modeling Resilience and Deliberate Actions. Of these, Family Attitudes Toward School and Mathematics and Modeling Resilience and Deliberate Actions are distinct from Benard's model while Responsibility is a component of Benard's Autonomy construct.

Responsibility

Responsibility appears to be related to Benard's (2004) description of autonomy but is not explicitly included in her model. However, comments were made by several teachers and parents regarding students' sense of responsibility or their independence as learners and I include those as a category here. Diana was described by her parents as being a very independent learner since she was young and her descriptions of her homework routines suggested a high degree of responsibility. Marcos was described by both his teacher and his mother as responsible and I observed that he stayed on task more than average in his

mathematics class. Miguel's mother and teacher also both emphasized his responsibility and he, too, was particularly focused on learning while in class. Eduardo was not noted as being especially responsible by either his mother or his teacher but he was clearly used to being responsible for his younger siblings at times from his and his mother's reactions during his mother's interview. Eduardo himself stated that he wanted other people to realize that he was responsible. Esperanza, interestingly, exhibited responsible behaviors such as staying on task during class, completing classwork, and seeking out resources to help herself with homework, but was not identified by her teacher or mother as especially responsible.

Family Attitudes Toward School and Mathematics

For every student there was evidence that her family viewed education as the pathway to a better career and life. Diana's mother described the importance of education in her own life and her teacher described Diana's family's attitude that college was a taken-for-granted destination for Diana. Rafael described his mother encouraging him to do well in school and to plan for college and a career. Esperanza's sisters were both models for her; one was in college and the other in the alternative high school that would lead to college credit. Marcos's mother did not mention college but said that she had great expectations for him and clearly emphasized the importance of school. Miguel's mother was so grateful for more basic needs being met that she did not seem to view higher education as essential. However, she also reported telling him to work harder if his grades dropped and explaining to him that his responsibility was to study. Eduardo described his parents as encouraging him to do well in school, pushing him to do his best, and telling him it would help him in the future.

Diana's father and Esperanza's and Marcos's mothers all spoke of liking mathematics, although only Diana's father had sufficient mathematics knowledge to help

with algebra-level homework. In addition to communicating a general liking for mathematics, there were several instances of parents or other family members directly contributing to students' mathematical skills and attitudes. Diana and her father played math games from a young age and continue to compete at solving algebra problems. Both Marcos and Miguel reported that their grandfathers, in Mexico, had worked with them on their multiplication tables. In addition, Rafael said his mother had helped him with mathematics in earlier grades. Miguel credited his mother for making him good at mathematics when she explained multiplication to him in third grade. Eduardo's mother described engaging in mathematical activities with him from a young age with the deliberate intent of preventing him from developing a fear of numbers. Eduardo's father explained to Eduardo that although he may not see a purpose for some of the mathematics he does, it will help him in the future.

Modeling Resilience and Deliberate Actions

Parents in the study served as models of resilience for their children. Stressors such as poverty, immigration, separation from extended family, and learning English were held in common by students and parents. I included three elements that may have contributed to the students' resiliency: modeling resilience, deliberate actions, and *consejos*, that is, sayings or life lessons.

There was evidence that Diana's Marcos's, Miguel's, and Eduardo's parents provided models for resilience. When Diana's parents were concerned that she was being teased about being short they identified successful friends of theirs whom Diana liked and admired and who were also short. Eduardo's father used himself as an example for why Eduardo should get as much education as possible, pointing out that getting it later, as his father was, was more difficult and more expensive. Mothers' employment also served to model resilience:

Diana's and Eduardo's mothers worked or had worked night shifts, enabling them to work without necessitating paid childcare. Diana, Marcos, and Miguel all lived in households that included extended family members, enabling them to pool resources or care for relatives who needed care.

Parents made decisions and took actions, sometimes at a sacrifice to themselves, to improve their children's opportunities. In Diana's case there were two instances of her parents going to the school to investigate what appeared to be problems with Diana's teachers. In one case, when she was being asked to do her work more slowly even though it was correct, Diana was switched to a different classroom at her parents' request; in the other her parents coached Diana to help her learn to accommodate that teacher's teaching style. Esperanza's mother facilitates her children's activities by transporting them to school-related events. Marcos's mother described going to the school and seeking out the principal to help her daughter, renting movies to help her children learn English, and going to school events. Miguel's father went to the school to investigate what appeared to be problems with Miguel's teacher. Miguel's mother wrote notes to his school teachers and, based on her description of her life in Mexico, the family's move to the USA may have been motivated in part by the desire to improve the future chances of their children. Two of Eduardo's school changes appeared to be intended for his benefit: first to a school that offered violin lessons because he wanted to learn violin and then out of that school because his mother concluded that it was not a good match for him.

Parents shared *consejos* with their children. These were sayings or stories to either warn children not to do things they shouldn't, to encourage them, or to teach them the right thing to do. Diana's mother deliberately talked with Diana about maintaining her pride and

shared examples from her own life. In dealing with a teacher Diana found difficult, her parents explained to her that there are times when one must follow the rules of someone with more power, providing coaching for accommodation. Marcos's mother provided her children with movies to watch and refused to let them use the Spanish soundtrack, saying, "No, here it's in English" (P6-Int-09-03-03). She also reported repeatedly telling her son that he could succeed. Miguel's mother reported telling him that his responsibility is to study and that worrying about food and money was his parents' job. Miguel also reported that his parents consistently told him to do well. Eduardo described his parents telling him of the dangers of not doing well. His mother shared her feeling that parents needed to explain to their children that the parents' job is to work and the child's job is to study. She described Eduardo's own father telling his son to get an education because later it would be harder.

Summary of Findings

The first question that guided this study was: What educational and environmental stressors have Latina/o middle school students enrolled in Algebra 1 encountered? I identified ten stressors, or risk factors, that were shared by at least two students. These were: poverty, limited academic support at home, limited or strained parent-child relationships, immigration and separation from extended family, learning English, school changes, difficulty with teachers, negative pressure from peers, racism, and pressure to succeed. Only one of these, negative pressure from peers, was present in every case.

The second question guiding this study was: What protective factors have contributed to the resiliency of Latina/o middle school students enrolled in Algebra 1? In answering this question I used the resilience theory structure developed by Benard (2004) and identified three categories that I found important but that were not part of Benard's resilience theory.

All the students showed some components of social competence, problem solving, autonomy, and a sense of purpose and bright future. I found evidence for the protective factors of caring relationships, opportunities to participate, and high expectations in families to varying degrees. There was evidence of caring relationships and opportunities to participate in schools. Two teachers expressed high expectations for their students; in the third classroom the data did not indicate the presence of high expectations as a protective school factor. There was little evidence for protective community factors in the data. In addition to the factors identified by Benard's (2004) resilience theory, responsibility was mentioned by several of the participants as a feature some students displayed that contributed to their success; family attitudes toward school in general and mathematics in particular and modeling resilience and making deliberate actions were other familial factors that may have contributed to students' resiliency.

CHAPTER 5: DISCUSSION

Yo le digo a mi esposo que siento que estoy rica. Siento, me siento, mmm, realizada. Me siento soñada porque en Mexico, cuando estaba soltera no teniamos ni donde dormirnos. ... Ahorita lo que tenemos es muchísimo ...

[I tell my husband that I feel like I'm rich. I feel, mmm, complete. I feel like I've realized my dreams because in Mexico, when I was single we didn't even have a place to sleep. ... Right now we have so much ...]
[P7-Int-09-02-20, translation by author]

The purpose of this study was to discover stressors and protective factors that Latina/o middle school students taking an Algebra I class had experienced. The findings showed that the students experienced numerous stressors and that several of them were common to two or more students. Participants displayed many of the individual characteristics of resilient students and, to varying degrees, protective factors were in place in the home and at school. In addition to the protective factors identified by Benard (2004) I found that responsibility, Family Attitudes Toward School and Mathematics, and parents' modeling of resilience and deliberate actions may have contributed to students' success.

In this chapter I argue that many of the stressors can be linked to larger societal issues including immigration policies, distribution of wealth and power at a societal and international level, and poverty. The limitations of the study include an analysis of the role my cultural biases played in my interpretation of the data. Following implications and suggestions for further research, I end the chapter with an examination of the challenges I faced in using critical multiculturalism as a theoretical framework for this research.

Discussion of Results

In this section I first discuss the stressors I found among the students in the study and

connections to the literature on Latina/o students including links between some stressors and larger societal issues, such as racism, poverty within the USA and in Latin America, school policies regarding teaching English as a second language, and US immigration policy. I then move to the protective factors, concentrating on the three components I found that were not included in Benard's (2004) resiliency framework and the minimal findings related to community protective factors. I close by examining how the protective factors and stressors were related to one another.

Stressors

For the purposes of discussion, stressors have been placed into three groups. The first group is composed of general sociocultural factors including poverty and single-parent households. The second group is more particularly pertinent to immigrant populations and includes immigration, limited academic resources at home, and learning English. The third group includes stressors that are common to minority experiences: pressure to succeed and negative pressure from peers.

Poverty, Single-Parent Households

It appeared from circumstantial evidence that at least three, and perhaps as many as five, of the students were from households that were struggling financially. Coming from a low-income family is a well-recognized as a risk factor in educational achievement (Kieffer, 2008; Suárez-Orozco, Suárez-Orozco, & Todorova, 2008). State poverty data suggest that this is a common problem for Latina/o students. Over one third of the state's Latina/o population is poor (i.e. income is below 100% of the federal poverty level) compared to a little less than one fifth of the overall population (Kaiser Family Foundation, 2009). Another one fifth of the state population is low income (i.e. income is between 100% and 199% of the federal poverty level;

Kaiser Family Foundation). If the racial-ethnic distribution for low-income residents is similar to those in poverty then approximately two-thirds of the state's Latina/o population is low-income or poor.

Two students lived in homes headed by a single mother. Homes with two or more adult caregivers are "better able to provide financial resources, supervision, guidance, and discipline. They are also more likely to have the time and energy to be involved in their children's education," (Suárez-Orozco et al., 2008, p. 36). Suárez-Orozco and her colleagues found that having two or more adults in a household had a statistically significant association with higher grades among their participants.

Immigration, Limited Academic Support at Home, and Learning English

Four of the students in my study were younger than school age when they moved to the USA or were born here; two others spoke of memories of migration. The two students with memories of migrating experienced some of the disorienting effects of migration directly. All of the parents in the study had experienced the disruption of migration in their lives, so that all students were indirectly affected by immigration through its effect on their parents' lives. Immigration, particularly when it involves learning a new language, is a disorienting and difficult process (Suárez-Orozco et al., 2008). For many Latina/o families an additional stress to the inevitable stresses of migration is lack of legal status in the USA. For example, "nearly 60 percent of the nation's largest immigrant group – Mexicans – reside in the United States on an unauthorized basis" (Suárez-Orozco et al., p. 5).

Separations such as that described by Marcos are a common stressor for immigrant children. In Suárez-Orozco and her colleagues' (2008) study of immigrant youth, over 80% of Latina/o participants in their study had been separated from at least one parent during the

immigration process and over 40% had been separated from both parents concurrently. The researchers found that children who had been separated from parents were more likely to exhibit symptoms of depression. Difficulties families encountered as a result of separations included renegotiating relationships, ambivalence or anger when children rejoin parents, and difficulty in reasserting parental authority after the separation (Suárez-Orozco et al.).

Findings that students had limited academic support at home are consistent with other studies. Suárez-Orozco and colleagues (2008) found that only 38% of the immigrant students in their study had someone at home whom they could ask for help with homework. Families' inexperience in negotiating higher education bureaucracy is likely to become a factor in students' applications to college in the future (Suárez-Orozco et al.). The limited ability of most of the parents in the study to help children with their schoolwork is a stressor in that they do not have a source of help for school assignments; however, parents were able to provide other kinds of support and encouragement, as indicated by the Family Attitudes Towards Schooling protective factor.

Results from this study suggest that ESL programs did not adequately serve the needs of these high-achieving students. Distinct from research showing that the ability to speak English at entry into kindergarten is related to school achievement (e.g. Kieffer, 2008), this finding offers a nuanced understanding of the role of ESL programs for successful students. Two of the four students who were in ESL programs described the boredom they felt, along with resentment at being removed from their regular classrooms. A third student described his dislike of classes in which reading was a central element due to his difficulty in reading English, although he stated that he was no longer receiving ESL services. These findings suggest that a lack of differentiation in ESL classes may leave high-achieving students unchallenged and encourage

them to exit services as early as possible, as Eduardo described doing. Marcos's experience also suggests that students may be exited from programs before they are truly ready.

Pressure to Succeed, Negative Pressure from Peers

Two of the students made reference to their status as high-achieving Latina students in contrast to Latina/o students in general. The boys acknowledged that their friends were not generally as high-achieving in school as they were themselves. Given the amount of attention that achievement gaps have gotten in the news for the past several years, Latina/o students can hardly fail to be aware of a view of Latina/o students in general as low-performing. Taken together, these data suggest that stereotype threat may be a stressor for students. Stereotype threat is "the threat of being viewed through the lens of a negative stereotype, or the fear of doing something that would inadvertently confirm that stereotype" (Steele, 2003, p. 111). As Steele and various colleagues demonstrated in a series of experiments, stereotype threat can have a negative impact on students' academic performance (Steele).

All of the students reported some degree of negative pressure from peers. This ranged from general comments about people associating high mathematics achievement with being a nerd to reports of teasing. While both Diana and Esperanza reported that their friends valued school achievement, the boys in the study all gave some indications that their friends' attitudes towards high achievement were ambivalent or even negative. There is evidence from other research for different attitudes towards achievement between Latina and Latino adolescents. Taylor and Graham (2007) found that Latina/o boys and girls in elementary school nominated high-achieving peers as students they admired and respected but that among 7th grade students the boys nominated low-achieving peers while girls in the study continued to nominate high-achieving peers. Students in the immigrant study by Suarez-Orozco and her colleagues (2008)

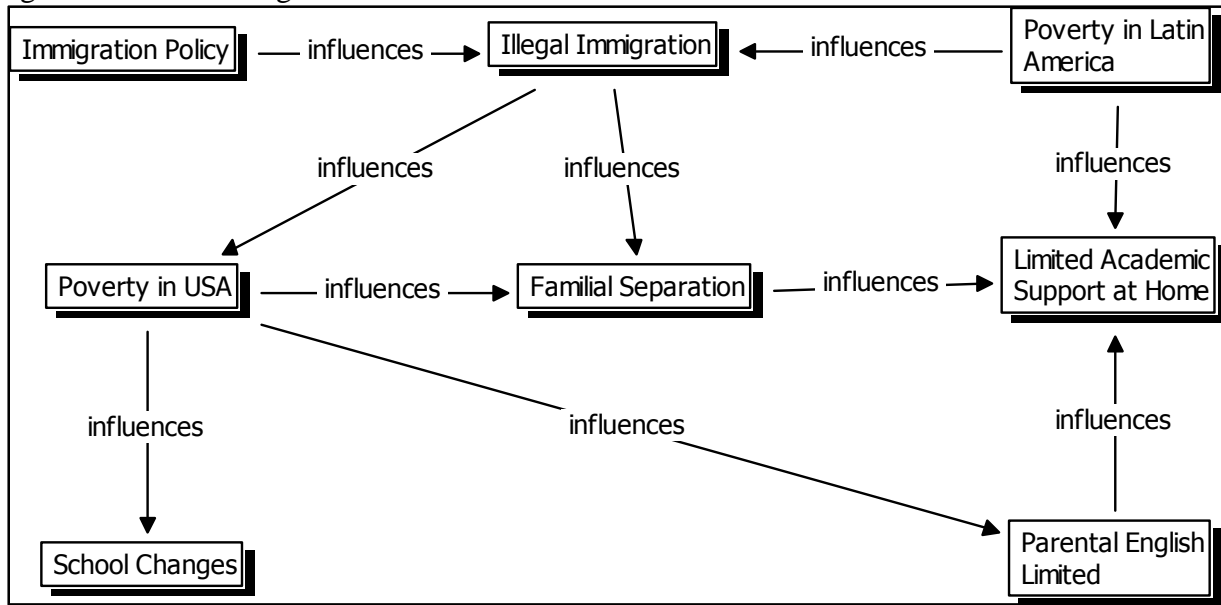
showed similarities and differences to students in the current study regarding the role of peers. As in the current study, peers were reported as both a source of help (for instance in figuring out a difficult concept) and of distraction. Furthermore, most students reported having friends from the same ethnic group. Unlike students in the current study, fewer than 2% of students reported that their friends would tease them for getting good grades (Suárez-Orozco, et al.). Mexican students were less likely to report academic peer support than other country-of-origin groups and high-achieving students were more likely to report it than low-achieving students (Suárez-Orozco, et al.).

Links to Larger Societal Issues

Many of the stressors I identified can be linked to larger societal issues. US immigration policy, poverty in the USA and Latin America, and racism are four examples that are closely linked to stressors such as familial separation, limited or strained parent-child relationships, learning English, pressure to succeed, and school changes.¹⁰ While I could continue this list by including, for instance, the links between agribusiness lobbying, US farm and foreign trade policies, and rural poverty in Latin America, I have limited my discussion to those larger issues that seem most immediately relevant to educational stressors. Figure 4 gives an overview of the links that are discussed in this section. The relationships indicated have not been tested using quantitative methods but come from a qualitative interpretation of data in this study.

¹⁰ Readers should note that these are conceptual links and specific stressors for individuals in this study may or may not be attributable to these larger issues.

Figure 5: Links to Larger Societal Issues



The demand for cheap labor in the USA combined with poverty and limited employment opportunities in Latin America, particularly in rural areas, has led to an influx of immigrants from Latin America to the USA. Despite the reliance of businesses in the USA on immigrants for labor, immigration policy has not been changed to allow the legal migration of workers, particularly low-paid workers, in the numbers business demands. This has led to large numbers of Latin Americans crossing the border without going through immigration agencies; an estimated 60% of Mexican immigrants, for example, are undocumented¹¹ (Suárez-Orozco, et al., 2008). Working and living conditions are more difficult for undocumented immigrants, as described in a *New York Times* editorial, “Working off the books — and living in constant fear of apprehension — they earn less, spend less, pay less in taxes and have little ability to report abuses or to improve their skills or job prospects” (“Immigration reform,” 2009). Since crossing the border illegally can be both expensive and dangerous, families may be separated because some members are unwilling or unable to cross while others must go to provide the remaining

¹¹ The term “undocumented” is used here to include immigrants whose immigration status is irregular because they have overstayed a visa, are engaged in activities (such as work for pay) that are not allowed under their current visa, or who entered the country illegally.

family members with income. This may include parents with school-age children, as well as the network of siblings, cousins, aunts, uncles, and grown parents and children who contribute to a rich family life. The expense and danger involved in crossing the border also limits the possibility of visiting family members who live on the other side of the border. Thus poverty, separation from extended family, and some cases of limited or strained parent-child relationships can all be linked to US immigration policies.

As indicated in the preceding paragraph, poverty in Latin America is one cause of illegal immigration and thus, indirectly, a cause for several stressors identified in this dissertation. Poverty in the country of origin is also a direct cause of limited academic support from some immigrant parents, who may have completed only a few years of school. Poverty affects families' abilities to send children to school in two ways: children may need to leave school to work and contribute to the family income and poor families may not be able to afford the costs of schooling, including such things as materials, books, uniforms, transportation, or tuition. National resources are also a factor in this phenomenon; as Valdés (1996) observes, "Mexico has been generally unsuccessful in educating most of its citizens" (p. 173). The limited availability of academic support at home is also, in part, a result of parents' lack of opportunity to learn English and familial separations. Even parents who have completed high school or a higher level of education in their native countries may find themselves unable to assist their children with schoolwork if they do not speak English. Family separations may mean that any extended family members who have more education are unavailable to students in the USA.

Immigrants' poverty in the USA is both a direct stressor and a cause of other stressors. Poverty limits the ability of all immigrants, including documented immigrants, to sponsor or finance other family members who wish to immigrate, thus contributing to familial separation

including extended families and parents and children. Poverty can interfere with parents' opportunities to learn English, either through inability to pay for lessons or lack of time to attend lessons even if they are free. Poverty can also be a cause for frequent moves, causing school changes for students.

Racism is another societal issue that is both a direct stressor and a cause for other stressors. As alluded to by Diana's mother, stereotypes may affect how teachers or other adults interpret a child's behavior or performance. Racially-based stereotypes are at the root of stereotype threat, which can affect students' academic performance (Steele, 2003). There is evidence that teachers have higher expectations for students of European or Asian ancestry than for those of African or Latin American ancestry (McKown & Weinstein, 2008; Tennenbaum & Ruck, 2007), and low teacher expectations were found in Ms Hayek's classroom.

Protective Factors

The data provided evidence for protective factors predicted by Benard's (2004) resilience theory structure including the personal characteristics of social competence, problem solving, autonomy, and sense of purpose and bright future; caring, opportunities to participate, and high expectations at home; and caring relationships, opportunities to participate, and, for some students, high expectations at school. There was evidence for three other categories that appeared to support the students' success in addition to those described by Benard: Responsibility, Family Attitudes Toward School and Mathematics, and Modeling Resilience and Deliberate Actions. Responsibility was a word used by numerous participants when describing some of the students. Although closely related to the individual characteristic of autonomy in Benard's theory, I included responsibility as a separate category because it seemed to be a construct that resonated with the participants. In reviewing the data for familial protective factors I found that the existing

structures did not adequately describe some support that families provided. Families in the study held a view of school as an important means for their children to secure a prosperous and rewarding future. With regard to mathematics in particular, I found that several parents conveyed positive attitudes towards mathematics or had taken steps to encourage their children mathematically. Based on these data I added the category Family Attitudes Toward School and Mathematics . Parents took positive actions to improve their children's chances for success, used *consejos* to encourage their children to do well and discourage them from negative behaviors and attitudes, and were models for resilience. I grouped these actions in the category Modeling Resilience and Deliberate Actions to Promote Success. I discuss each of these new categories at greater length in the next three sections. The data provided little evidence of community-based protective factors. This was in sharp contrast to the African American youths in Berry's (2002) study, and I end the discussion of protective factors with some observations on the differences in the protective factors in Berry's work and the current study.

Responsibility

An independent determination to get their work done and succeed appeared to be a strong factor in the success of four of the students in the study. Miguel and Marcos, in particular, were described as "responsible" by both teachers and mothers. Diana and Esperanza both exhibited many of the behaviors described as responsible in Miguel's and Marcos's cases. The word responsible was also used by Eduardo in describing himself. Suárez-Orozco and her colleagues (2008) found that the ability and willingness to work hard was "the feature that seems to drive the disposition of every single high-achieving portrait in our research" (p. 356).

Family Attitudes Toward School and Mathematics

Students and parents in the study expressed a belief that schooling would provide a

pathway to success. These familial attitudes towards the importance of schooling are reflected in the literature on immigrant students. Suárez -Orozco and colleagues (2008) found that immigrant students overwhelmingly felt that school would help them get ahead (97%) and that studying hard was essential for success (86%). Approximately three-fourths of their participants gave positive characterizations of school as compared to approximately 30% of White, U.S.-born students (Suárez-Orozco, et al.). Valdés (1996) found that parents valued schooling, regretted their own limited educational opportunities, and considered their children's education to be important.

Parents in the study believed school to be important and wanted their children to do well, however most had little contact with their children's teachers and did not have academic skills to assist their children with algebra-level mathematics or homework in English. Diana, Rafael, Marcos, Miguel, and Eduardo's mother all described family members helping the student with mathematics in earlier grades. Both Diana's and Eduardo's mothers described their contact with teachers as declining when their children entered middle school. Reis and Díaz (1999) found similar results for students in their qualitative study of high achieving, economically disadvantaged, urban female students,

perceived that their parents regarded school and learning as a very important way to improve their situation in life, but that in almost every case, the parents of these young people had minimal involvement in their high school experience. ... Participants in this study cited numerous examples of how their parents were actively involved in elementary school, but as students entered their secondary-school years, parental involvement shifted. Parents would occasionally ask, "Did you finish your homework?" However, little attention was paid to either the content or process of learning by these parents (p. 52).

This finding was echoed elsewhere in the literature. For example, parents expressed a strong value for schooling and students were aware of their parents' academic aspirations for them (Suárez-Orozco, et al., 2008).

Teachers in the current study made positive statements about the family support enjoyed by three of the students, a finding somewhat inconsistent with results found in the literature. Despite the important support that Latina/o parents provide to students, teachers' assessment of parent involvement is often based on other measures such as children's completion of homework (Reis & Diaz) and parents coming to the schools (Reis & Diaz; Suárez-Orozco, et al., 2008), leading to negative assessments of parents by teachers. Suárez-Orozco and her colleagues noted that teachers were more critical of parents whose children were not successful, possibly explaining the positive sentiments teachers expressed towards three families in this study.

Modeling Resilience and Deliberate Actions to Promote Success

Parents were subject to many of the same stressors as student participants, so that observing their parents gave students an opportunity to learn such traits as persistence, problem solving, autonomy, familial loyalty, and a sense of purpose. Parents, particularly Eduardo's mother, also used *consejos* to teach their children values. Valdés (1996) found that mothers used *consejos* to teach their children "how to behave, how to act around others, and also what was good and what was moral" (p. 125) – teachings that Miguel's mother explicitly listed as the responsibility of parents.

In their study of immigrant students Suárez-Orozco and her colleagues (2008) found that 70% of immigrant parents gave "provid[ing] better opportunities for their family" (p. 30) as a primary reason for coming to the USA. Suárez-Orozco and her colleagues found that "Most children recognize the sacrifices their parents have made for them," (p. 31), citing as an example a student who described parents working in factories so that their children will have a good future, for example becoming lawyers. They observed that the student's desire to give back to the parents in return for the parents' sacrifices and hardship played an important role in students'

motivation. Making the decision to move to a place where children will be safer; have access to food, shelter, and medical care; and have educational and employment opportunities represents an enormous action to promote success.

Differences in Protective Factors: Berry and Gordon

One remarkable feature in my findings was the absence of protective factors in the community. Two students, Diana and Esperanza, reported involvement in programs sponsored by nearby universities. Neither parents nor students reported that any other student was involved in any program related to academics, nor did they cite church involvement as something important to the students. The lack of community protective factors suggests a different model from Benard's (2004), in which protective factors in the community play an important role. It also differs dramatically from the experiences of Berry's (2002) participants, who were mathematically successful, male, African American, middle school students.

Four of Berry's (2002) eight participants were selected based, in part, on their participation in a university-sponsored academic program, so it is not surprising to find that engagement with such programs was more prevalent among his participants than those in this study. However, seven of the eight participants were active in multiple church-related programs and six were involved in community service activities through their schools. For these students, church activities provided opportunities to be leaders and tutors, and the students indicated that church participation was "essential to their lives" (Berry, 2002, p. 133). In contrast, none of my participants described such involvement. Machado-Casas suggests that the lack of involvement in formal community activities may be due, at least in part, to such support activities being achieved through less formal networks of help in immigrant communities (M. Machado-Casas, personal communication, May 4, 2009). Machado-Casas (2006) describes a "discourse of

illegality” through which many Latin American immigrants and their children engage mainstream society in the USA, even when students or parents have visas, working papers, or US citizenship. For these immigrants, safe spaces are those close to home, populated by people they know, and not associated with formal institutions. The networks people form within their communities may include recognition of individual members’ expertise in negotiating different aspects of life in the USA, such as taxes, paperwork for US-born children, or help with schooling (M. Machado-Casas, personal communication, May 4, 2009). Esperanza’s mother described the mother of a another child asking whether Esperanza’s mother could help her child with schoolwork and also a time when Esperanza’s younger sister helped a different child who was having difficulty reading. These anecdotes suggest that Esperanza’s family may be seen as a source of academic help, yet they do not fit Benard’s (2004) descriptions of protective factors in the community.

Participants in this and Berry’s (2002) studies also showed very different patterns of parental participation in their children’s schooling. Parents in this study were not, for the most part, highly involved with the school and did not serve as advocates for their children nor as sources of academic help. Parents in Berry’s study were an academic resource for all but one student. In addition, four students in Berry’s study “were identified as AG [Academically Gifted] because their parents insisted on their sons’ being tested for AG placement,” (Berry, 2002, p. 123) indicating that parents played a role in key decisions about their sons’ schooling. In the current study, Diana’s and Eduardo’s parents described having intervened by changing either the classroom or the school their child attended, while other parents appeared to trust in the schools’ decisions regarding their children’s education. In contrast, Berry found that “parents ... did not trust their sons’s schools. This distrust led them to take an active interest in their sons’ education

in order to make the schools respond to their sons' needs" (p. 127).

Stressors and Protective Factors in Relation to One Another

During my analysis the stressors, and evidence for them, were easier to identify than the protective factors. Thus, I chose to provide more detail about the protective factors and write less about the stressors. Some elements in the data served as evidence for both stressors and protective factors. This apparent contradiction requires some explanation.

The constructs I identified as stressors are recognized as risk factors in school culture and I write for an audience fluent in school culture. This led me to make assumptions about the stressors, including the following: each stressor comes complete with a label that needs little further explanation; there is a shared understanding about what constitutes evidence of the stressor's presence, making it easy to describe the elements in the data that led to its identification; and a shared understanding by many that it is, in fact, a stressor in the sense that its presence makes school success more difficult. These assumptions allowed me to write about each stressor without having to define it for readers, to quickly pick out and describe the evidence I found for each stressor with little elaboration or context, and to feel confident that each stressor placed students at a disadvantage compared to students who did not experience that stressor and that my readers would recognize it as a stressor.

The majority of the protective factors came from an existing theory (Benard, 2004), whereas the stressors came directly from the data. Benard's factors were generally complex, with multiple components for each factor. Thus for each factor I reminded readers what the components were and then provided data for each of the individual components. Descriptions of these factors and the evidence for their presence or absence were thus lengthy and sometimes inconclusive. The protective factors that did not come from Benard were Responsibility, Family

Attitudes Toward School and Mathematics , and Modeling Resilience and Deliberate Actions. Of these three, the first two, like the stressors, needed relatively little explanation and the data were easily identified and fairly unambiguous. The third, Modeling Resilience and Deliberate Actions, was the result of my purposeful attempt to understand what made me – and the students – feel that families had played a significant role in preparing the students for success. This last factor required more explanation of the factor itself and of the data used as evidence.

In several instances, there were data that provided evidence for both a stressor and a protective factor. One pair, the stressor Pressure to Succeed and the protective factor High Expectations, is closely related and determining the extent to which the pressure or expectation acted as a stressor or a protective factor was not possible with the available data. Other instances were less confounding. The limited academic assistance available to Esperanza at home was also an opportunity for her to exhibit autonomy and problem solving as she found other sources for the information she needed. For both Miguel and Diana their difficulties with teachers resulted in parent reactions that provided evidence that parents were aware of and sensitive to their children's feelings and needs. Finally, Eduardo's school changes, while possibly stressful, were initiated by his parents in an effort to find the best school environment for him.

Critical Multiculturalism

Although I designed the study using critical multiculturalism as my theoretical framework, in the end I made fewer of the connections between events in the students' lives and larger social issues than I had hoped to. This is due, in part, to what I believe are inherent difficulties in identifying some, though not all, connections between individual events and collective oppression. Furthermore, my data did not include details that might have made those connections easier to identify. Despite these difficulties in applying critical multiculturalism as a

tool in my data analysis, it did play an important role in identifying protective factors that were not part of the resilience theory framework (Benard, 2004). Systemic, collective oppression can be difficult to identify precisely because it is systemic. When the actors in events themselves are unaware of connections between those events and larger issues, they cannot tell a researcher about them and may consider details irrelevant, even though the details would make those connections easier to see. In addition, systemic oppression can occur in the absence of intent on the part of those involved. For example, I felt that Ms Hayek's tacit permission for the four White students in her class to work almost solely with each other amounted to racism. Yet when I tried to write about it as an example of racism, I found that the evidence seemed unsubstantial, particularly when I tried to articulate whose actions were racist. The White students made no racist comments that I heard and they included an African American student in their group on one of the days I observed. Ms Hayek was generally willing to allow students to choose their workmates as long as groups were not disruptive; making the White students break up their group would have been a deviation from her usual practice. The White students appeared to generate knowledge together that was not shared with the class as a whole, yet not having groups share what their knowledge with the rest of the class appeared to be a failure of pedagogy or classroom management, rather than racism. Although it is possible that none of the individuals involved had racist intentions, the overall effect was to enhance the power of one group at the expense of others.

My critical multiculturalism perspective led me to identify two protective factors that did not appear in Benard's (2004) model: Family Attitudes Toward School and Mathematics and Modeling Resilience and Deliberate Actions to Promote Success. Identification of these factors was a direct result of my realization that my sense of the families' importance as a source of

support for students was at odds with their portrayal in my analysis up to that point. My realization that I had unconsciously used middle-class Whiteness as the norm in describing the families' roles in the students' education made it possible for me to identify the ways in which families supported students in ways that differ from middle-class, White understandings of support.

Limitations

The diversity of Latina/o residents in the USA was not well-represented by the participants in the study. Five of the six students were of Mexican heritage, providing limited geographic diversity in terms of country of origin. No student listed a native dialect as one of the languages spoken in her home. All but one of the students were born outside the USA, all students were children of at least one immigrant parent, and the sole non-immigrant parent grew up in Puerto Rico speaking Spanish as her native language; my sample did not include second- and third- generation Latina/o Americans. These limitations may, at least in part, be indicators of access to high-level math classes for different groups of students. The absence of second- and third-generation Latina/o Americans may also be due to the relatively recent increase in Latina/o residents in the region and a correspondingly small pool of later generation students in the school systems. As with any small, qualitative study, the results cannot be generalized.

There is reason to believe that participants were not always candid in their answers. Several factors may contribute to this. As a White woman contacting the families through the school I was clearly not part of the Latina/o community. My status as an outsider almost certainly affected participants' openness, although I attempted to mitigate that effect by discussing my Mexican husband and our bilingual toddler with parents. For any participants who were undocumented immigrants, concern about revealing their immigration status may have

limited their candor. The scope of project was not long enough to establish the understanding, perspective, and trust that would be necessary to give a fuller account of either the stressors or the protective factors the students encountered. This is an area for future research.

Four interviews were conducted completely in Spanish. As a non-native speaker, it is possible that I mistranslated or misunderstood some of the participants' statements, especially colloquialisms that cannot be translated literally. My non-fluent Spanish may also have affected the length or depth of some participants' answers. My Spanish skills served as an additional marker of my outsider status. However, my earnest effort to communicate in the language most comfortable for my participants may have served to counter the outsider effect.

In addition to participants' cautiousness in answering and the limitations of my Spanish, the data gathered were limited by my caution in asking questions. For example, I did not inquire about parents' reasons for leaving their countries of origin out of concern that I not ask questions that could be construed as trying to find out the families' immigration statuses. Nor did I consistently pursue subjects that seemed touchy or very personal. Diana's adoption and Rafael's relationship with his father and stepfamily were two prime examples of topics that I avoided probing.

As with all knowledge, the understandings I drew from the data are situated and partial. In making decisions about how to present my findings I found that using the participant's voices in the student portraits felt most natural and conveyed their stories most clearly and easily. The stories presented here, however, are my interpretations of their answers, not their own. A limitation of the narrative presentation is that it blurs the nature of the account, making it seem as if it is the *participants'* situated and partial views one is reading, not my own. I include this here as a limitation of the presentation form that the reader should keep in mind while reading,

distinct from limitations of my own partial and situated viewpoint, which I discuss next.

While analyzing the data I found myself constantly asking “Is this me?” when trying to identify stressors. That is, many times when I identified a stressor I immediately questioned whether I was reading too much into the data or whether it was genuinely a stressor. Although limited experience in data analysis, natural skepticism, and my inherent angst played a role, I believe this phenomenon was also indicative of a larger issue. To truly honor and serve a community we “need to be immersed in the culture enough to emphasize its natural strengths rather than overlay our own prescriptions for improving the situation” (K. Askew, personal communication, April 3, 2009). My cultural background, especially my schooling, made it difficult for me to sufficiently immerse myself in the contexts of the participants to be able to do justice to their natural strengths.

My initial reaction to Marcos’s familial situation provides an example of the misunderstandings that can result from examining students’ lives through a culturally dissonant lens. In examining the data to identify stressors, it was easy for me to tell a story of Marcos’s life that included many stressors and few protective factors. Marcos lived with his mother, two-year younger sister, and high-school senior cousin. As a single parent working at a fast food restaurant, his mother could not have been making enough to keep the family out of poverty, even with the cousin working as well. Marcos had lived with his grandmother from age four to age ten, while his mother lived in the USA. When his mother returned to Mexico to bring Marcos and his sister to the USA, Marcos did not initially know who she was. Between this separation and her own admission that she had little time to spend with her children, Marcos’s mother could have only limited knowledge and understanding about her children. She had neither the time nor the mathematical or linguistic knowledge to help her children with their

homework. In addition, Marcos deeply missed his grandmother, with whom he lived during the separation from his mother. From this I concluded that Marcos had several stressors by virtue of his family situation including living in a single-parent household; disrupted attachment relationships due to his prior separation from both parents, continued separation from his father, and removal from his grandmother; little to no academic support at home; and poverty.

Yet I can imagine another way to tell the story (and let me be clear that this is imagination; it is not based on my available data): Desperately afraid because she was without a husband and her children did not have enough to eat or promise of gainful employment when they grew up, Marcos's mother made the difficult decision to leave her children in the safety of their grandmother's care and undertake a dangerous and uncertain journey in search of work in the USA. For six years she worked at the low-paying jobs that were available to a woman with little education and little knowledge of English, each week sending money home to her mother to keep her children fed and saving what little she could to eventually reunite the family. After six years she could finally go home to get her children and bring them back with her. Once here, she helped them learn English, got them into school, and did what she could to give them the things that so many children in the USA take for granted. Her extended family in the USA helped her, and one of her nieces lived in the mobile home with them; between her full-time work and the niece's part time work after school, they were able to keep the family together.

In this story, Marcos's mother emerges as a model of resilience. When there was no money, she did what she had to in order to keep her children fed. When the only work was low-paid and garnered little respect, she worked long hours to make up for the low pay and created a haven within her house. When she thought she could afford to get and keep her family together she went back to retrieve her children. When the school offered to tell her what high school

opportunities were available to her son, she switched shifts with someone, went to the school, and listened carefully; her son then applied to and got accepted in a program that will let him earn free college credit while he is still in high school. In all of this she made use of the family support net when it was there, maintaining her ties to mother, siblings, and children as best she could.

The possibility of rereading the data from a different perspective and changing the story is not limited to Marcos's case. When reviewing the data for Miguel, I concluded that there were several other adults, and possibly other children, living in Miguel's house besides the nuclear family he listed. My immediate reaction was that it was both a stress factor in and of itself and indicative of another stress factor. To have at least four adults and three children, possibly more, living in what appeared to be a three-bedroom house would mean crowding, limited privacy, increased opportunities for personality conflicts, and competition for household resources. In addition, the number of people living in the house suggested to me that poverty was an issue and that family members needed to combine resources in order to survive. Miguel, however, suggested that his cousins contributed to his education by being "there to talk to" (S7-Int2-09-03-02). This opened up to me the possibility that if a culture sees sitting by oneself as loneliness, not privacy, then having many people could be a good thing. The number of people may enforce a need for social norms that increase social competence and cooperation, provide a greater net of emotional support, and teach flexibility and negotiation skills. Even if the need to share resources is an accurate indicator of poverty, being able to confront the difficulties poverty creates as a family may be seen as a protective factor.

As these two examples illustrate, my search for stressors initially resulted in a grim picture of students' lives, with little emphasis on the strengths they and their families relied upon

to succeed. Yet this did not reflect the sense I had gotten in talking to families. Using my knowledge of Latina/o cultures, literature that validated Latina/o experiences, the relatively slim evidence of protective factors but overwhelming stressors relative to students' achievement, and my instinct that parents were providing their children with important skills, I reexamined the data. I concluded that parents modeled resilience for their children, both through their lives and through the *consejos* they shared with their children. I also concluded that one of the most important protective factors was parents' deliberate actions to secure opportunities for their children. Safety, justice, and physical well-being are included as protective factors in some authors' theories of resilience. These and hopes for a brighter future are factors in many families' decisions to emigrate from their home countries seeking a better life in the USA. Parental actions taken specifically to promote these factors are contributors to the children's well-being and success.

To some degree cultural bias is inevitable and revealing one's positionality is therefore an essential action for researchers. Also essential is an examination of one's own work to better understand how one's background biases research and a conscious effort later in research to examine one's conclusions with that bias in mind to search for alternative explanations. Identifying missing information that could better reveal participants' motives can improve question generation. In the case of this study, multiple parent interviews, a longer time-frame, and targeted questions may have generated additional data that would have revealed more examples of parental actions that promoted students' successes and ways in which parents served as role models for resiliency.

Implications

The most important implication of this research is a simple one: students can learn and be

successful in school despite many stressors. If considered from a deficit perspective, all the students in this study, with the exception of Diana, would be identified as having multiple risk factors, among them poverty, single-parent households, limited academic support in the home, multiple school changes, and limited English proficiency when entering school. Yet all of them were successful enough to be placed in advanced mathematics classes and all had high aspirations for the future.

Implications for Schools

Students in the study, with one exception, did not have routine access to expert knowledge on academic subjects at home. Romo and Falgo (1996), in their study of at-risk Latina/o youth, found that schools routinely over-estimated parents' resources in terms of time and knowledge. Taken together, these findings suggest that students would benefit from opportunities for additional help at school. That help includes both academic skills and negotiating the school system. To ensure that students take advantage of these opportunities, they may need to be scheduled into the students' day, rather than begin offered after school. The AVID program, for example, seemed helpful to the two study participants in it. Schools should continue to encourage students to set high goals and provide them with tools to achieve those goals.

In addition to working directly with students, schools must find ways to involve parents. Delgado-Gaitan (1990) found that parents wanted to help their children but did not know how to do so, and that few contacted their children's teachers to monitor progress or learn how they could help. Parents in Romo and Falbo's (1996) work expressed frustration because they asked schools for help and suggestions but received little guidance. Although individual teachers can increase efforts to contact parents, the need goes beyond the level of individual teachers. The two

teachers in this study who did not speak Spanish relied primarily on other school personnel for translation assistance, although such translation was not part of the other staff-members' job functions. Getting translators needs to be easier and faster in order to meet teachers' and parents' needs. Formation of parent support groups could provide a means for parents to help one another understand the functioning of U.S. school systems and to undertake collective action to improve their children's opportunities.

College was a clear motivating factor for most of the students. If students are to remain motivated then college must remain a realistic possibility for them. I do not know whether any of the students in this study are undocumented immigrants, but for students who are, it is essential that the route to college be made more accessible if they are to retain their motivation to achieve in school.

Implications for Teachers

Students and parents in the study all valued teacher contact very highly. For students this manifested itself when they described the qualities of a good teacher or a caring teacher. Students wanted their teachers to notice when they were confused or upset, to sit with them and explain when they had difficulty with a concept, and to notice if they were doing something that would get them into trouble and say something. Parents felt responsibility for their students and wanted to know how they were doing at school. Teachers need to understand the power of their attention and use it accordingly. Some recommendations for teachers when communicating with families are:

- Keep in mind that decisions that may look to you like bad parenting may be the result of circumstances that make those the best decisions possible.
- Assume parents care about their children's schooling and initiate communication with

them on that basis.

- Understand the intimidation factor for parents, especially those with limited proficiency in English or little formal education.

Implications for Parents

Even though parents in this study were generally unable to help their children with homework they found other ways to support their children's schooling. Eduardo's mother expressed her frustration with parents who did not ensure that their children did their homework or were not persistent in seeking assistance from the school. Romo and Falgo (1996) identified seven strategies parents of high-school graduates had employed: maintenance of parental authority, willingness to negotiate when children presented a reasonable case, setting limits, monitoring their children, monitoring their children's friends, providing a continuous message about the importance of education, and being involved in school.

In several cases in the current study parents or grandparents had helped students with mathematics at an early age and these actions were viewed as important, even years later. Thus parents of young children can help develop mathematical understanding and attitudes toward schooling and doing work that will continue to serve their children even when the content is no longer within the parents' grasp.

Although parents attached importance to communication with school personnel, particularly teachers, most parents had had little contact with their children's current teachers. Two of the three teachers indicated that parents were unlikely to be contacted unless something was seriously wrong. In two cases, Esperanza and Marcos, students had failed a benchmark test yet the teacher indicated that she had not needed to call either student's parent. Because parents and teachers may have different standards regarding what necessitates contact, parents may need

to initiate contact. As discussed above, schools need to improve avenues for parents to make such contact.

Parents can also help their children by modeling resilience. This includes telling children of the difficulties the parents have encountered and how they resolved them. Sharing *consejos* that teach cultural values such as hard work, respect, ethnic pride, and concern for family serve to promote cultural identity and reinforce behaviors and attitudes that promote success. Parents can coach their children to help them resolve problems, as parents did in this study when children had difficulties with strict teachers.

Suggestions for Further Research

Longitudinal studies of successful students would provide more time to understand the factors, see development and discover long-term effects.

Studies regarding differentiated ESL instruction for high-achieving or gifted students or for finding other means to support their on-going language development did not appear to be common in the ESL literature. Further research in this area could help to ensure that students receive the support they need without the boredom that Esperanza and Eduardo complained of.

Conclusion

This is the part that I've been struggling with all along and I'm still working on it.

[old conclusion was: I found many stressors that affected students. I also found protective factors, particularly personal characteristics and internalized attitudes about the importance of school and an individual's ability to persevere in the face of adversity. Gándara's (2005) work suggests that Latina/o students' future academic successes are fragile in general and this was my sense, too. The degree to which students' resilience seemed to rely on internal motivation, instilled and supported by their families, was impressive. The number of stressors, at least for

some students, was troubling and leads me to worry that their cumulative effect will eventually prove to be too much.]

APPENDIX A – QUESTIONNAIRE

Student Questionnaire

Name: _____

Male Female (*circle one*)

How do you describe your race/ethnicity? _____

Is English the only language you speak? Yes No (*circle one*)

If no, what other language(s) do you speak? When and where?

Language: _____ Spoken: _____

Language: _____ Spoken: _____

Language: _____ Spoken: _____

What language are you most comfortable speaking? _____

What adults live in your household? For each adult, please try to answer the following questions:

- What is the highest level of formal education of each adult in your household?
(For example: graduated elementary, 10th grade, graduated HS, graduated college)
- For the adults with jobs outside the home, what are their jobs?

| Name/relationship | Education | Job(s) |
|-------------------|-----------|--------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

How many brothers and sisters do you have and what are their ages?

| First Name | Age | Lives with you? (Y/N) |
|------------|-------|-----------------------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

What does it feel like to be a Latina/o student in a high-level math class at your school?

How would you describe your ability to do math?

Please list any honors or advanced classes you are in (including math and other subjects).

Please list mathematics courses you have taken in middle school; describe how you did including your grade and how much effort you put into it. (Use a separate page or the back of this page)

APPENDIX B – STUDENT INTERVIEWS

Student Interview I

I am interested in learning about your school and mathematics experiences. You do not have to answer a question if you do not want to. I will assure your confidentiality and your name will not appear anywhere in my report of this research. If you decide you do not want to participate, just tell me. You can withdraw or discontinue your participation at any time without further obligation. The interview should take about 30 to 45 minutes to complete. Is it okay if I ask you some questions now?

Interview I: Self as math student; Role of teacher/school

1. Tell me about yourself. What are the most important things I should know about you? (both as a student and more generally as a person)
2. On the questionnaire you said _____ about your math ability. Can you tell me more about that?
How does your ability in math compare to how you actually do in class? Why?
What do other people do or say that contributes to how you feel about yourself in math?
3. Why do you think that you are in the math class you're in? Who decided you should be in it? Did you help make the decision?
4. Tell me about math class: what happens in class, what things do you prefer and why? (group vs individual work; kinds of problems; help from teacher or others)
Do you feel like you participate and contribute in class? Do you feel welcome in class by the teacher and by other students?
5. What things can get in the way of you doing well in math? Can you tell me about a time when someone helped you overcome a problem you were having in math class?
6. In what ways is math similar to and different from other subjects in school?
7. Describe characteristics of a good math student. (i.e. What makes someone good at math? How can you tell that someone is good at math? Is it just about grades?)
8. What do you think makes some students good at mathematics and some not so good?
9. What expectations do you have of yourself in mathematics?
10. How do you study for math class?
What study strategies do you use? (clarify if needed - include HW and other studying)
How often and with whom do you study? (prompt for friends, at home, tutor, other?)
Describe the environments in which you study. (Where, who else is there, noise/distractions, sources of help available)
11. What advice would you give to another student who wants to be successful in math class?
Is there any special advice you would have for Latina/o students?

Interview II: Home, Peer, and Community influences, Teachers

1. Tell me about who you hang out with at school and outside school.
2. What do your friends think of you as a mathematics student? Tell me about your relationships with your friends and math.
3. Can you think of a time when friendships and doing well at school came into conflict in any way? (e.g. friends did or said something discouraging or wanted you to ignore schoolwork to do something with them) What did you do about it?
4. What roles do the adults in your house play in your mathematics learning?
5. What do you do when you are having difficulty with a mathematics concept or problem?
6. Who has inspired you to do well in mathematics? How?
7. Who besides the adults in your house and your current mathematics teacher monitors your mathematics progress? How? (e.g. former tchr, church, tutor, guidance counselor, family)
8. Are you involved in any kinds of in-school or after-school enrichment programs? Summer Program? If so, describe the program. How has this program affected your mathematics or school achievement?
9. What things outside school influence how you do at school? What kind of influence?

Now I want to talk a little bit about teachers.

1. Tell me what to look for in a good math teacher.
2. What roles have your math teachers played in your learning math? Who else has played a role in your learning math?
3. What do you think your teachers think of you as a math student? How do you know?
4. How have your mathematics teachers encouraged you (or discouraged you, if any did)? In what ways do they encourage you to go beyond the minimum necessary to pass? To do your best?
5. How have your mathematics teachers, including your teacher now, shown that they care about you? Who else in the school cares about you and your progress and how do they show it?
6. Have you ever had a teacher, or some other school official, you felt didn't care about you much and how did that person show it?
7. What things that teachers do can make it harder for you to learn or be motivated? Help?

Interview III

Questions for this interview will be developed after observing in class and reviewing the students' test scores, grades, and other artifacts. The interview will cover the following areas:

- Overall school performance, including patterns and inconsistencies in performance
- Involvement in curricular and extra-curricular activities (in school and other)
- Things that have made or can make school difficult and how she/he deals with them
- For students whose first language is not English, how learning English has affected their mathematics achievement and whether that's different than other subjects
- Future plans for self, what parents hope/plan for in terms of education and career
- Whether math is used outside school
- Overall, what like and dislike about school

Mathematics Autobiography

Please write, type, or record your answers to the following questions. If you choose to write your answers you can use this paper or other paper.

Name: _____

- 1. Identify and write about significant moments you have had with mathematics from kindergarten to your current grade.** (Include pleasant and unpleasant moments.) These moments can be in-school or out-of-school moments.
- When were you first drawn to mathematics?
 - What was it that drew you towards mathematics? – **or** – What do you like and dislike about mathematics if you do not feel drawn to it?

- 2. You were invited to participate in this study in part because you met the study criteria for a student who is “good at mathematics.” Since you may or may not feel you are “good at mathematics,” please answer the set of questions that fits you better:**

When did you first realize that you were “good at mathematics”?

- Describe and elaborate on this memory.
- How did you feel when you realized that you were “good at mathematics”?
- Who helped you realize that you were “good at mathematics”?

How does it feel to be identified as “good at mathematics”?

- Describe how you see yourself as a mathematics student.
- What messages do you get from people you know about your mathematical ability?
- How does it feel to be identified for this study as “good at mathematics”?

- 3. Describe the best mathematics teachers you had.**

- What was it like to be in this teacher’s class?
- How was this teacher different from other teachers?

- 4. Describe the worst mathematics teacher you had.**

- What was it like to be in this teacher’s class?
- How was this teacher different from other teachers?

APPENDIX D – PARENT INTERVIEW

I am interested in learning about your child's school and mathematics experiences and your experiences. You do not have to answer a question if you do not want to. I will assure your confidentiality and your name will not appear anywhere in my report of this research. If you decide you do not want to participate, just tell me. You can withdraw or discontinue your participation at any time without further obligation. The interview should take about 45 minutes to an hour to complete. Is it okay if I ask you some questions now?

1. Tell me about student's name. What are the most important things I should know about him/her?
2. Describe how student's name has done in school over the years.
3. Could you describe something that student's name struggled with in school and how s/he overcame it?
4. Describe student's name's mathematics abilities. How does student's name's mathematics performance in school compare to his/her mathematics ability?
5. What was the process for deciding that _____ should take Algebra I instead of eighth-grade math? (probe: Who first suggested it? Who made the final decision? Did you attend any meetings to help make the decision?)
6. How do family members help student's name with schoolwork?
7. What is the parents' responsibility in a child's education and what is the school's responsibility?
8. In what ways are you involved with your child's school and education? How often do you come to the school and for what events?
 - a. How does the school treat parents?
 - b. What things does the school do that make you feel welcome or unwelcome there?
 - c. How do you find out about school events?
9. Has there been a time when it seemed to you that something was wrong with student's name's education and you felt you needed to go to the school to fix it?
10. Do you ever talk with student's name about how you use mathematics in your life now or the mathematics you took in school?
11. What expectations do you have of student's name in school? What about specifically in mathematics?
12. How do you react when student's name does well in mathematics?
What about when student's name does not do as well as you would expect in math?
13. How have _____'s mathematics experiences been similar and different to other children you know? (For example, her siblings, cousins, and friends.)
14. Tell me what to look for in a good mathematics teacher or teacher in general.
Which of student's name's teachers were particularly good mathematics teachers? What did they do that was especially good or helpful? What are some things that teachers have done that weren't helpful for student's name?
15. In your opinion, why are some students successful in math class and others not?
16. What kinds of things do you think Latina/o students must deal with in being a good student? How do you help student's name deal with those factors?
17. What responsibilities does student's name have around the home? How does he/she help?
18. Can you think of anything important that I didn't ask about?

APPENDIX E – TEACHER INTERVIEW

This research will explore the mathematical experiences of Latina/o middle school students who have been successful with school mathematics. In addition, it will explore elements of their experiences that led to their success, including the school context. You do not have to answer a question if you do not want to. I will assure your confidentiality. Your name will not appear in my report on this research. If you decide you do not want to participate, just tell me. You can withdraw or discontinue your participation at any time without further obligation. The interview should take about 45 minutes to an hour to complete. Is it okay if I ask you some questions now?

I'll to start with some general questions about the school, then your classroom and teaching, and finally specific questions about the student.

1. What is the process for determining which students take Algebra I (or higher) at this school?
2. I'm interested in support that teachers get from each other and from others in the school. What kinds of joint planning opportunities do you have with others on your team and/or other math teachers? (Follow-up – what do you do during joint planning? Is it useful to you?)
3. Is there someone on staff who provides good support for teachers when you feel you're are not reaching a Latina/o student either because of limited English or anything else? (Help with parent calls if Spanish speaking?)
4. Have there been any trainings (i.e. professional development) that were particularly relevant for teaching Latina/o students? Were they mandatory? Were they useful?
5. What are ways the school administration supports you as a teacher?
6. What kinds of things does the school do in terms of outreach to Latina/o parents? (Spanish speaker at the desk in the main office? Others in the building? Translator available?)
7. Do you have a sense of how Latino families have been received in the community? School community?
8. Teachers sometimes indicate that Latino students have high absentee rates or tend to move often. Are either of those particular problems at this school –Latino students or in general?

These next questions are more about you and your classroom and teaching

9. How do you see your role in your students' education? (“guide on the side,” coach, more active leader, purely academic or emotional as well)
10. Can you describe your vision of a successful mathematics student for me?
11. What are your expectations for students in your classes?
12. How do you modify your expectations based on individual students' needs and abilities?
13. In what ways are the accommodations you make the same or different from other teachers in the school? (specify for 12 & 13 – not just IEP but more generally) Do you have any specific strategies for helping Latina/o students?
14. What are some ways that students can participate in your class? (How do Latina/o students in general participate? Similar to other students?)
15. What are some ways you show your students that you care about them and their progress?
16. When and how do you typically communicate with students' families? Any difference with Latino families? (Probe: phone numbers, difficulty reaching/communicating with parents?)
17. What is the make-up of your Algebra 1 class in terms of race and gender? How does it compare with other mathematics classes in the school? Why do you think that is?

These questions relate more to student's name in particular.

18. Describe student's name as a math student. What are his/her strengths and weaknesses?
19. Are there other important things about student's name that you think might affect his/her performance in school?
20. What do other teachers on the team say about him/her?
21. In math class, how does student's name prefer to work?
22. To which teaching strategies has student's name reacted to especially positively? Are there any strategies you tried that really flopped?
23. Can you think of a time when student's name was struggling and how he/she dealt with it?
24. What expectations do you have of student's name? Does he/she meet them?
25. Describe student's name's interactions (with teacher and other students) in math class.
26. How is student's name perceived by other students in his/her class?
27. Are student's name's friends good students?
28. Can you tell me some ways that student's name participates in class and in school activities?
29. What communication have you had with student's name's parents/guardian about his/her mathematics progress? (Probe: Any attempts that failed? Challenges communicating?)
30. Do you know whether student's name's selection for taking algebra was different from the routine in any way?
31. Are there students in student's name's grade who are taking a higher-level mathematics class than student's name? How was that group selected? Do you know why student's name is not in that class?

Almost done – these last couple of questions are much more general

32. What do you see as the biggest barriers to student success and what can or should the school do to help overcome them? Are any of those specific to Latino students?
33. Other information that seems relevant?

REFERENCES

- AVID Center. (2009). AVID Online. Retrieved March 12, 2009 from <http://www.avidonline.org>.
- Banks, J. A. (1995). Multicultural education and curriculum transformation. *The Journal of Negro Education*, 64 (4), 390-400.
- Benard, B. (2004). *Resiliency: What we have learned*. San Francisco: WestEd.
- Berry, R. Q., III. (2002). *Voices of African American male students: A portrait of successful middle school mathematics students*. (Doctoral Dissertation, The University of North Carolina at Chapel Hill, 2002). *Dissertation Abstracts International*, 64 (03), 835A.
- Brenner, M. E. (1998). Development of mathematical communication in problem solving groups by language minority students. *Bilingual Research Journal*, 22 (2, 3, & 4), 103-128.
- Brown, J. H., D'Emidio-Caston, M., & Benard, B. (2001). *Resilience education*. Thousand Oaks, CA: Corwin Press.
- Burris, C. C. & Welner, K. G. (2005). Closing the achievement gap by detracking. *Phi Delta Kappan*, 86 (8), 594-598.
- Butty, J. L. M. (2001). Teacher instructions, student attitudes, and mathematics performance among 10th and 12th grade Black and Hispanic student. *The Journal of Negro Education*, 70 (1/2), 19-37.
- Byrnes, J. P. (2003). Factors predictive of mathematics achievement in White, Black, and Hispanic 12th graders. *Journal of Educational Psychology*, 95 (2), 316-326.
- Calderón, M. (2007). *Buenos principios: Latino children in the earliest years of life*. Washington, DC: National Council of La Raza. Retrieved November 5, 2007, from <http://www.nclr.org/content/publications/detail/45609/>
- Checkley, K. (2001). Algebra and activism: Removing the shackles of low expectations. A conversation with Robert P. Moses. *Educational Leadership*, 59 (2), 6-11.
- Civil, M. (2006). Working towards equity in mathematics education: A focus on learners, teachers and parents. In Alatorre, S., Cortina, J.L., Sáiz, M., and Méndez, A.(Eds). *Proceedings of the 28th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Vol 1*, (pp. 30-50) Mérida, México: Universidad Pedagógica Nacional. Retrieved November 24, 2007, from <http://www.pmena.org/2006/cd/PLENARY%20SESSIONS/PLENARY%20SESSIONS-0002.pdf>
- Cordeiro, P. A. (1990) *Growing away from the barrio: An ethnography of high-achieving at risk Hispanic youths at two urban high schools*. Ed.D. dissertation, University of Houston, United States -- Texas. (Publication No. AAT 9107343).

- Cresswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches*. Thousand Oaks, CA: SAGE Publications.
- Delgado-Gaitan, C. (1990). *Literacy for empowerment: The role of parents in children's education*. New York: Falmer Press.
- Doty, R. G., Mercer, S., & Henningsen, M. A. (1999). Taking on the challenge of mathematics for all. In L. Ortiz-Franco, N. G. Hernandez, & Y. De La Cruz (Eds.) *Changing the faces of mathematics: Perspectives on Latinos* (pp. 99-112). Reston, VA: The National Council of Teachers of Mathematics.
- Duran, D. (1998). A retrospective study of academic resilience in successful Latino students from a rural California community. *Dissertation Abstracts International*, 61 (01), 96A. (UMI No. 9958093)
- Flores-González, N. (2002). *School kids/street kids: Identity development in Latino students*. New York: Teachers College Press.
- Fuson, K. C., Smith, S. T. & Lo Cicero, A. M. (1997). Supporting Latino first graders' ten-structured thinking in urban classrooms. *Journal for Research in Mathematics Education*, 28 (6), 738-766.
- Gándara, P. (1995). *Over the ivy walls: The educational mobility of low-income Chicanos*. Albany, NY: State University of New York Press.
- Gándara, P. (2005). *Fragile futures: Risk and vulnerability among Latino high achievers* (ETS report number PIC-FRAGFUT). Princeton, NJ: Educational Testing Service.
- Garrison, L. & Mora, J. K. (1999). Adapting mathematics instruction for English-language learners: the language-concept connection. In L. Ortiz-Franco, N. G. Hernandez, & Y. De La Cruz (Eds.) *Changing the faces of mathematics: Perspectives on Latinos* (pp. 35-48). Reston, VA: The National Council of Teachers of Mathematics.
- Garza, E., Reyes, P. & Trueba, E. T. (2004). *Resiliency and success: Migrant children in the U.S.* Boulder, CO: Paradigm Publishers.
- Glesne, C. (1998). *Becoming qualitative researchers: An introduction, 2nd edition*. New York: Longman.
- Gutiérrez, R. (1999). Advancing urban Latina/o youth in mathematics: Lessons from an effective high school mathematics department. *The Urban Review*, 31 (3), 263-281.
- Gutiérrez, R. (2002). Beyond essentialism: The complexity of language in teaching mathematics to Latina/o students. *American Educational Research Journal*, 39 (4), 1074-1088.
- Henderson, N. & Milstein, M. M. (2003). *Resiliency in schools: Making it happen for students and educators. Updated edition*. Thousand Oaks, CA: Corwin Press.

- Hoffer, T. B. (1992). Middle school ability grouping and student achievement in science and mathematics. *Educational Evaluation and Policy Analysis*, 14 (3), 205-227.
- Holland, D. (2005). Course syllabus: Ethnographic Methods, Anthropology 328-16, Spring 2005. University of North Carolina, Chapel Hill.
- Immigration reform and hard times. (2009, April 14). *The New York Times*, editorial page. Retrieved April 14, 2009 from http://www.nytimes.com/2009/04/14/opinion/14tue1.html?_r=1
- Jae-P. (2003). Ni de aquí ni de allá. On *Ni de aquí ni de allá* [CD]. Woodland Hills, CA: Univision Music Group.
- Kaiser Family Foundation. (2009). State Health Facts website. Retrieved April 9, 2009, from <http://www.statehealthfacts.org/compare.jsp>
- Kieffer, M. J. (2008). Catching up or falling behind? Initial English proficiency, concentrated poverty, and the reading growth of language minority learners in the United States. *Journal of Education Psychology*, 100 (4), 851-868.
- KewalRamani, A., Gilbertson, L., Fox, M., and Provasnik, S. (2007). *Status and Trends in the Education of Racial and Ethnic Minorities* (NCES 2007-039). Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.
- Khisty, L. L. (1995). Making inequality: Issues of language and meanings in mathematics teaching with Hispanic students. In W. G. Secada, E. Fennema, & L. B. Adajian (Eds.) *New directions for equity in mathematics education* (pp. 279-297). Cambridge: Cambridge University Press.
- Khisty, L. L. (2002). Mathematics learning and the Latino student: Suggestions from the research for classroom practice. *Teaching Children Mathematics*, 9 (1), 32-35.
- Khisty, L. L. & Viego, G. (1999). Challenging conventional wisdom: A case study. In L. Ortiz-Franco, N. G. Hernandez, & Y. De La Cruz (Eds.) *Changing the faces of mathematics: Perspectives on Latinos* (pp. 71-80). Reston, VA: The National Council of Teachers of Mathematics.
- Kincheloe, J. L. & Steinberg, S. R. (1997). *Changing multiculturalism*. Philadelphia: Open University Press.
- Kubota, R. (2004). Critical multiculturalism and second language education. In B. Norton & K. Toohey (Eds.) *Critical pedagogy and language learning* (pp. 30-52). Cambridge: Cambridge University Press.
- Ladson-Billings, G. (1995). Making mathematics meaningful in multicultural contexts. In W. G. Secada, E. Fennema, & L. B. Adajian (Eds.) *New directions for equity in mathematics education* (pp. 126-145). Cambridge: Cambridge University Press.

- Lee, J. (2004). Multiple facets of inequity in racial and ethnic achievement gaps. *Peabody Journal of Education*, 79 (2), 51-73.
- Lo Cicero, A. M., Fuson, K. C., & Alleksaht-Snyder, M. (1999). Mathematizing children's stories, helping children solve word problems, and supporting parental involvement. In L. Ortiz-Franco, N. G. Hernandez, & Y. De La Cruz (Eds.) *Changing the faces of mathematics: Perspectives on Latinos* (pp. 59-70). Reston, VA: The National Council of Teachers of Mathematics.
- Machado-Casas, Margarita (2006). *Narrating education of new Indigenous/Latino transnational communities in the South: Migration, life, and its effects on schooling*. Ph.D. dissertation, The University of North Carolina at Chapel Hill, United States -- North Carolina. Retrieved June 10, 2009, from Dissertations & Theses @ University of North Carolina at Chapel Hill.(Publication No. AAT 3207362).
- Malloy, C. E. (2004). Equity in mathematics education is about access. In R. N. Rubenstein & G. Brights (Eds.) *Perspectives on the teaching of mathematics: Sixty-sixth yearbook* (pp. 1-14). Reston, VA: National Council of Teachers of Mathematics.
- Malloy, C. E. & Malloy, W. W. (1998). Issues of culture in mathematics teaching and learning. *The Urban Review*, 30 (3), 245-257.
- Marshall, C. & Rossman, G. B. (1999). *Designing qualitative research, 3rd edition*. Thousand Oaks, CA: SAGE Publications.
- McCarthy, C. (1995). Multicultural policy discourses on racial inequality in American education. In R. Ng, P. Staton, & J. Scane (Eds.), *Anti-racism, feminism, and critical approaches to education* (pp. 21-44). Westport, CT: Bergin & Garvey.
- McKown, C. & Weinstein, R. S. (2008). Teacher expectations, classroom context, and the achievement gap. *Journal of School Psychology*, 46 (3), 235-261.
- McLaren, P. (2007). *Life in schools: An introduction to critical pedagogy I the foundations of education, fifth edition*. Boston: Pearson Education, Inc.
- Merriam, S. B. (1988). *Case study research in education: A qualitative approach*. San Francisco: Jossey-Bass.
- National Center for Education Statistics. (2007). *Digest of Education Statistics, 2006*, Table 139: Percentage of public and private high school graduates taking selected mathematics and science courses in high school, by sex and race/ethnicity: Selected years, 1982 through 2005. (NCES 2007-017). Retrieved November 2, 2007 from <http://nces.ed.gov/programs/digest/d06/>
- National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA: NCTM. Retrieved December 3, 2007, from <http://my.nctm.org/standards/>

- Nieto, S. (1995). From Brown heroes and holidays to assimilationist agendas: Reconsidering the critiques of multicultural education. In C. E. Sleeter & P. L. McLaren (Eds.) *Multicultural education, critical pedagogy, and the politics of difference* (pp. 191-220). Albany, NY: State University of New York Press.
- Nieto, S. (1999). Critical multicultural education and students' perspectives. In S. May (Ed.) *Critical multiculturalism: Rethinking multicultural and antiracist education* (pp. 191-215). Philadelphia: Falmer Press.
- Nieto, S. (2002). Profoundly multicultural questions. *Educational Leadership*, 60 (4), 6-10.
- Perie, M., Grigg, W., and Dion, G. (2005). *The Nation's Report Card: Mathematics 2005* (NCES 2006-453). U.S. Department of Education, National Center for Education Statistics. Washington, D.C.: U.S. Government Printing Office.
- Perie, M., Grigg, W., and Donahue, P. (2005). *The Nation's Report Card: Reading 2005* (NCES 2006-451). U.S. Department of Education, National Center for Education Statistics. Washington, D.C.: U.S. Government Printing Office.
- Pizarro, M. (2005). *Chicanas and chicanos in school: Racial profiling, identity battles, and empowerment*. Austin, TX: University of Texas Press.
- Pollock, M. (2001). How the question we ask most about race in education is the very question we most suppress. *Educational Research*, 30 (9), 2-12.
- Portes, A. & Rumbaut, R. G. (2001). *Legacies: The story of the immigrant second generation*. Berkeley, CA: University of California Press.
- Public School Review. (2007). Chapel Hill-Carrboro Schools District: Students by Ethnicity. Retrieved September 13, 2007, from http://www.publicschoolreview.com/agency_schools/leaid/3700720
- Reyes, P. & Fletcher, C. (2003). Successful migrant students: The case of mathematics. *Journal of Curriculum and Supervision*, 18 (4), 306-333.
- Richman, J. M., Bowen, G. L., & Woolley, M. E. (2004). School failure: An eco-interactional developmental perspective. In M. W. Fraser (Ed.) *Risk and resilience in childhood: An ecological perspective*. Washington: National Association of Social Workers Press.
- Reis, S. M. & Díaz, E. (1999). Economically disadvantaged urban female students who achieve in schools. *Urban Review*, 31, (1), 31-54.
- Romo, H. D. & Falbo, T. (1996). *Latino high school graduation: Defying the odds*. Austin, TX: University of Texas Press..
- Rousseau, C. & Tate, W. F. (2003). No time like the present: Reflecting on equity in school mathematics. *Theory into Practice*, 42 (3), 210-216.

- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57(3), 316-330.
- Sleeter, C. E. (1996). This Curriculum is Multicultural... isn't it? In *Multicultural education as social activism* (pp. 91-115). Albany, NY: State University of New York Press.
- Sleeter, C. E. & Delgado Bernal, D. (2004). Critical pedagogy, critical race theory, and antiracist education: Implications for multicultural education. In J. A. Banks & C. A. M. Banks (Eds). *Handbook of research on multicultural education, 2nd edition* (pp. 240-258). San Francisco: Jossey-Bass.
- Sleeter, C. E. & Grant, C. A. (2007). Making choices for multicultural education: Five approaches to race, class, and gender. Hoboken, NJ: John Wiley & Sons.
- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: SAGE Publications.
- Steele, C. (2003). Stereotype threat and African-American student achievement. In *Young, gifted, and Black: Promoting high achievement among African-American students* (pp. 109-130). Boston: Beacon Press.
- Suárez-Orozco, C., Suárez-Orozco, M. M., & Todorova, I. (2008). *Learning a new land: Immigrant students in American society*. Cambridge, MA: The Belknap Press of Harvard University Press.
- Taylor, A. Z. & Graham, S. (2007). *Journal of Educational Psychology*, 99 (1), 52-64.
- Tennenbaum, H. R. & Ruck, M. D. (2007). Are teachers' expectations different for racial minority than for European American students? A meta-analysis. *Journal of Educational Psychology*, 99 (2), 253-273.
- U.S. Census Bureau. (2001). Difference in Population by Race and Hispanic or Latino Origin, for the United States: 1990 to 2000. Retrieved August 15, 2007 from <http://www.census.gov/population/www/cen2000/phc-t1.html>
- U.S. Census Bureau. (2007). State fact sheet. Retrieved November 5, 2007 from http://factfinder.census.gov/servlet/ACSSAFFacts?_event=Search&geo_id=&geoContext=&_street=&_county=&_cityTown=&_state=04000US37&_zip=&_lang=en&_sse=on&pctxt=fph&pgsl=010
- Valdés, G. (1996). *Con respeto: Bridging the distances between culturally diverse families and schools*. New York: Teachers College Press.
- Valenzuela, A. (1999). *Subtractive schooling: U.S.-Mexican youth and the politics of caring*. Albany, NY: State University of New York Press.
- Wang, M. C., Haertel, G. D., & Walberg, H. J. (1999). Psychological and educational resilience. In A. J. Reynolds, H. J. Walberg, & R. P. Weissberg (Eds). *Promoting positive outcomes* (pp. 329-365). Washington: CWLA Press.

Werner, E. E. (1984). Research in Review. Resilient children. *Young Children*, 40 (1), 68-72.

Wink, J. (2000). *Critical pedagogy: Notes from the real world*, 2nd edition. New York: Addison-Wesley Longman.

Wolin, S. J. & Wolin, S. (1993). *The resilient self: How survivors of troubled families rise above adversity*. New York: Villard Books.