CLOSING THE ACHIEVEMENT GAP IN THE LATINO
POPULATION: AN INVESTIGATION OF THE EFFECTIVENESS
OF BRIDGES BILINGUAL PROGRAM

A Doctoral Dissertation

Presented to

The Graduate Faculty of the University of Akron

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

Melissa Hughes

December, 2006
CLOSING THE ACHIEVEMENT GAP IN THE LATINO POPULATION: AN INVESTIGATION OF THE EFFECTIVENESS OF BRIDGES BILINGUAL PROGRAM

Melissa A. Hughes

Dissertation

Approved:     Accepted:

Advisor
Dr. Denise Stuart

Interim Department Chair
Dr. Bridgie A. Ford

Committee Member
Dr. Isadore Newman

Dean of the College
Dr. Patricia Nelson

Committee Member
Dr. Carole Newman

Dean of the Graduate School
Dr. George Newkome

Committee Member
Dr. Lynn Smolen

Date

Committee Member
Dr. Sajit Zachariah
ABSTRACT

This mixed methods study was conducted to investigate whether a relationship exists between the implementation of the Bridges program (Bridges Bilingual Parent Resource) during the academic school year and achievement gains in a largely Latino student population. Parental involvement and student motivation were also important components in this study. Developed as a bilingual parent resource, the Bridges program provides grade level exercises and activities for the purpose of assisting parents in engaging their children over the summer months to decrease summer learning loss. Instructions and additional resources (i.e., glossary, etc.) are written in both Spanish and English to serve both populations. Each book presents materials that should serve as a review of the skills acquired over the previous academic year and expose students to new skills to which students will be introduced in the upcoming academic year. The purpose of this study was to determine if Bridges would serve as an effective tool for parents to assist their children during the academic year and to determine if it increases student achievement.

Parents and their children attending a charter school in New Mexico were asked to participate in the study that provided the families with the Bridges materials at no cost. Data were collected from 73 students that participated in the Bridges program, and 261 students who did not. The New Mexico Standards-based Assessment Tests
and DIBELS fall and spring scores (for reading in Grades 1-2) were used to evaluate student achievement as pretest and posttest measures for all of the subjects in the study. A pre-program questionnaire and a post-program questionnaire were created to obtain information regarding parental involvement, student motivation, environmental factors, and attitudes toward education. Parents of the students in the Bridges group completed the questionnaires before they began the program and after they submitted the Bridges materials back to the researcher at the end of the program. Multiple Linear Regression was used and each specific hypothesis was analyzed and interpreted separately. Qualitative data was also collected from questionnaires and telephone interviews.

The findings demonstrated that while overall achievement gains were not evident, the qualitative data indicated a value and a need for bilingual parent resources like the Bridges program. Furthermore, while the Bridges program is not conducive to be implemented during the school year, parents and students would most likely see greater benefits if implemented during the summer months as the program was originally intended.
ACKNOWLEDGMENTS

I would like to thank my committee members for their support, guidance, and encouragement. My committee chair, Dr. Isadore Newman, and Dr. Carole Newman have been continuous sources of encouragement and guidance throughout my doctoral program. My advisor, Dr. Denise Stuart, and Dr. Lynn Smolen have generously shared their time, experience, and knowledge with me. Dr. Sajit Zachariah has been a true source of inspiration, support, and motivation for me even before my doctoral journey began. He has given me opportunities for personal and professional growth that have enhanced my academic career and nurtured my pursuit for life-long learning.

I would also like to thank Mrs. Sandy Davis and the faculty at Turquoise Trail Elementary School for welcoming me into their community to conduct this study. Without their help and support, this research would not have been possible.
DEDICATION

To Dr. Isadore Newman

For those of us who have chosen this path, there are countless classes with countless teachers, all of whom have contributed to our academic growth. Few influence us the way that you have influenced me. You have mentored me through this process with your expertise, guidance, patience, and endless encouragement. You have taught me what it takes to be a good researcher and student. By example, you have also taught me what it takes to be an exceptional teacher. I am truly grateful and fortunate to have had you as my professor. The immeasurable respect I have for Dr. Newman, the scholar, is only exceeded by the respect I have for Izzy, the person.
# TABLE OF CONTENTS

| LIST OF TABLES | xii |
| LIST OF FIGURES | xiv |

## CHAPTER

I. INTRODUCTION ................................................................. 1
   - Background Information on Bridges Program .................. 7
   - Problem Statement ..................................................... 9
   - Assumptions Underlying the Study ................................. 9
   - General Research Hypotheses ...................................... 10
   - Purpose of the Study .................................................. 11
   - Delimitations .............................................................. 12
   - Operational Terms ..................................................... 13
   - Summary ........................................................................ 15

II. REVIEW OF THE LITERATURE ........................................... 16
   - Factors that Contribute to the Gap ............................... 20
   - Latino Achievement Gap ............................................ 21
   - No Child Left Behind .................................................. 23
   - Summer Learning Loss ............................................... 24
   - Parental Involvement .................................................. 28
Perceptions of Latino Parental Involvement ........................................ 33
Sociocultural Factors Related to the Latino Achievement Gap .... 36
Language ................................................................................................. 41
Barriers to Latino Parental Involvement ............................................. 46
  School Environment ........................................................................ 46
  Parents’ Educational Level .............................................................. 47
  Psychological Issues ........................................................................ 47
  Logistical Issues ............................................................................. 48
Improving Parental Involvement .......................................................... 49
  Open Effective Communication ...................................................... 49
  Warm School Environment ............................................................ 51
  Parent Liaisons as Cultural Brokers .............................................. 51
  Respect for Cultural Values and Familial Needs ......................... 53
Summary ................................................................................................. 54
III. METHODOLOGY ...................................................................................... 55
  Description of the Program ............................................................. 55
  Research Design .............................................................................. 57
  Data Collection Procedures ............................................................. 58
  Statistical Treatment ......................................................................... 59
  Qualitative Analysis .......................................................................... 63
  Diagram of the Research Design .................................................... 64
  Derivation of General Research Hypothesis .................................. 66
## Statement of the Procedures

Conclusions and Discussion

Implications

Suggestions for Further Research

Summary

REFERENCES

APPENDICES

A. APPENDIX A BRIDGES BILINGUAL RESOURCES

B. APPENDIX B LETTERS TO PARENTS REQUESTING PARTICIPATION

C. APPENDIX C LETTER TO EDUCATORS DESCRIBING THE STUDY

D. APPENDIX D SCHOOL’S AGREEMENT TO PARTICIPATE IN THE BRIDGES RESEARCH STUDY

E. APPENDIX E SUMMARY OF PRE- AND POST-PROGRAM QUESTIONNAIRE RESULTS

F. APPENDIX F CODING OF PARENT INTERVIEW RESPONSES

G. APPENDIX G INSTITUTIONAL REVIEW BOARD APPROVAL
LIST OF TABLES

Table

1. Chronbach’s Alpha Reliability Estimates .................................................. 81
2. Number of Subjects in Bridges and Comparison Groups .......................... 87
3. Descriptive Information of Bridges Group ............................................... 87
4. Pretest and Posttest Summary of Bridges Group and Comparison Group .................................................. 88
5. Results for Specific Hypothesis 1.1 ........................................................ 90
6. Results for Specific Hypothesis 1.2 ........................................................ 91
7. Results for Specific Hypotheses 2.1-2.6 .................................................. 94
8. Results for Specific Hypotheses 2.7-2.12 ................................................. 95
9. Results for Specific Hypothesis 3.1 .......................................................... 97
10. Results for Specific Hypothesis 3.2 .......................................................... 98
11. Principal Component Analysis for Pre Student Motivation Scores .......... 100
12. Principal Component Analysis for Post Student Motivation Scores ....... 100
13. Results for Specific Hypothesis 4.1 ........................................................ 101
14. Results for Specific Hypothesis 4.2 ........................................................ 102
15. Results for General Hypothesis 5 ......................................................... 103
16. Principal Component Analysis for Pre Student Motivation Scores .......... 104
17. Principal Component Analysis for Post Student Motivation Scores .......... 104
<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Test of interaction from a two-way analysis of variance</td>
<td>61</td>
</tr>
</tbody>
</table>
CHAPTER I
INTRODUCTION

The reauthorization of the Elementary and Secondary Education Act (ESEA) has put “accountability” on the forefront of the national education agenda. State education systems have an obligation to educate all students and “leave no child behind.” However, across the country, there is a notable gap in achievement between minority and disadvantaged students and their white counterparts. As the cultural composition of our country becomes more and more diverse, so too, do our student populations. Data collection methods have made it possible for educators to examine student achievement differences among different ethnic backgrounds. While some studies present evidence that the achievement gap between Whites and Asians and their Latino peers is narrowing, Latino students demonstrate poor performance on achievement tests at all levels. Latinos scored well below their White peers on fourth and eighth grade standardized tests in 2000 (National Center for Educational Statistics, 2003). The National Assessment of Educational Progress (NAEP) shows that from 1990 to 1999, the achievement gap grew or remained constant for Latino students in both reading and math (National Center for Educational Statistics, 2003; U.S. Department of Education, 2000). Regarding the NAEP data, the Education Trust concluded “by the time [minority students] reach Grade 12, if they do so at all,
minority students are about four years behind other young people” (NGA Center for Best Practices). Reports also indicate that Latino students are more likely than white students to enter kindergarten unprepared, and have higher suspension and expulsion rates than their white counterparts. (Educational Commission of the States, 2004; National Center for Educational Statistics, 2003). Furthermore, Latino students are more likely to drop out of high school and only half as likely to earn a college degree as white students (U.S. Department of Education, 1996; Johnston, 2000; National Center for Educational Statistics, 2003). More specifically, according to the Public High School Graduation and College Readiness rates in the United States, only 52% of all Latino students graduate (compared to their White peers at 72%), and only 16% of Hispanic students leave high school college ready (compared to their White peers at 38%) (Greene & Forster, 2003). Of the 63% of high school graduates that go on to college, only 37.3% are Latino compared to the 47.4% of White high school graduates that go on to college (ThinkProgress.org, 2006).

Dramatic U.S. demographic changes in the Latino population demand that we reexamine the manner in which we serve this growing minority. Demographic projections predict that by the year 2050, Latinos will comprise one fourth of our country’s population (U.S. Census Bureau, 2005). Furthermore, according to the same projection study, Latinos had a higher concentration of children under the age of 5 than any other race or ethnic group in 2004. Currently, Latinos make up 49% of the population in California and Texas, and 13 states in our nation have at least half a million Latino residents. Considering these statistics, it is not surprising that finding
more effective ways to educate our Latino students has become a national focus in education reform efforts.

In an effort to raise academic achievement of Latino students and increase their college completion rates, the U.S. Department of Education formed the President’s Advisory Commission on Educational Excellence for Latino Americans in 2001 (From Risk to Opportunity, 2003). Based on the principles established in the No Child Left Behind Act of 2001, the Commission developed a multi-year action plan to address the high dropout rate and low college enrollment rate of the largest minority population in the United States. According to the 82-page report, one out of every three Latino students has dropped out of high school, and of those that do graduate from high school, a mere 53% enroll in a higher education program immediately following high school. Furthermore, only 10% of those enrolled in collegiate programs graduate with a 4-year degree. The plan calls for a coordinated effort among parents, community leaders, business leaders, educators, and public officials to close the educational achievement gap. Among the six recommendations the Commission offers is “setting new expectations across America for Latino American children by: helping parents navigate the educational system, creating partnerships that provide expanded options for children, and implementing a nationwide public awareness and motivation campaign aimed at increasing educational attainment” (p. 5).

Many educators and legislators have been myopic in their attempts to “fix” the problem of Latino underachievement rather than addressing the gap as a multivariate problem. Research shows that many factors influence the achievement gap between Latino students and their counterparts (Delgado-Gaitan, 2001; Diaz-Rico & Weed,
1995; Gonzalez, 2001; Grossen, 1997; Haycock, 2001; Jimenez, 2000; Pascopella, 2004; Scribner, 1999; Tinkler, 2002). Additionally, discrimination and negative stereotypes of Latino students and their families may actually impede academic achievement (Aronson, 2004; Pascopella, 2004; Roma, 1998). Studies indicate that stereotype threat is a significant factor in the achievement gap, and can actually suppress performance, motivation, and learning (Massey, Charles, Lundy, & Fischer, 2003). For example, Roma (1998) maintains that educating Latino girls is especially challenging because cultural differences, parental attitudes, and the media often reinforce Latinas as underachievers. NCLB maximizes some elements of stereotype threat by using an end-of-year evaluation to judge the quality of schools, teachers, and students. The pressure to improve the district’s test scores often stigmatizes minority students and underachievers as “weak links in the chain,” causing some to attribute the increasing dropout rates to the ineffectiveness of NCLB (Aronson, 2004). Others blame poor parenting, lack of involvement, or a disinterest in education (Chavkin & Gonzalez, 1995; Freeman & Freeman, 1994; Inger, 1992). Despite this multivariate problem, another common misconception is that Latino children perform poorly in school because their parents do not value education (Freeman & Freeman, 1994). Teachers substantiated this conclusion based on parents’ poor attendance at school functions and their inability to communicate in English. However, research is surfacing which indicates that the discrepancy in educational achievement may have more to do with the fact that teachers often lack the cultural sensitivity necessary to meet the needs of this population which contributes to different expectations teachers
have for their Latino students (Cummins, 1986; Futrell, Gomez, & Bedden, 2003; Holloway, 2003; Pena, 1997)

A recent ethnographic study conducted with Mexican origin families demonstrates that teachers and parents often have very specific and different ideas about what parental involvement is (Martinez, 2006). Teachers who lack multicultural training may fail to realize that often parents perceive themselves as actively involved in their children’s education. However, their educational goals are based on values, family, and community. Teachers who are not culturally sensitive may mistake their misperception of parental involvement for a lack of parental involvement.

According to a survey conducted by Futrell et al. (2003), more than 80% of practicing teachers feel unprepared to accommodate the needs of their increasingly diverse student populations. According to these researchers, until we understand the differences in the cultural views of the schooling process, we will be unable to address the cultural needs of Latino children.

Extensive research has been conducted to examine the effects of sociocultural factors on student achievement (August & Shanahan, 2006; Chavkin & Gonzalez, 1996; Conchas, 2001; Cummins, 2004; Delgado-Gaitan, 1994; Diaz-Rico & Weed, 1995; Gonzalez, 2001; Ogbu, 1986; Scribner, Young & Pedroza, 1999). According to Diaz-Rico and Weed (1995) learning occurs within social and cultural contexts. Sociocultural factors, or the manner in which people interact with each other and how they carry out their daily tasks, play a large role in knowledge acquisition (Diaz-Rico & Weed, 1995). Researchers define sociocultural factors as the belief and value systems, communication styles, home language, interpersonal relations and experiences
and problem solving strategies that impact learning (Gonzalez, 2001; Harrison, Wilson, Pine, Chan, & Buriel, 1990; Walker, Greenwood, Hart, & Carta, 1994) For example, Walker et al. (1994) found that a combination of sociocultural factors within the home, community and school was linked to the at-risk factors in low academic achievement levels of minority children.

Sociocultural factors are deeply imbedded in the quality and extent to which parents are involved in their children’s education. (Chavkin & Gonzalez, 1995; Pena, 2000; Trumbell, Rothstein-Fisch, Greenfield, & Quiroz, 2001). There are many research studies indicating that parents and school personnel define parental involvement differently (Chavkin & Gonzalez, 1995; Martinez, 2006; Pena, 2000; Scribner, Young, & Pedroza, 1999). Some define parental involvement as how much parents help their children with homework, others maintain it is the extent to which parents attend school functions, events, and parent-teacher conferences. One study conducted in an urban Texas district with a high Latino population found that the perceived lack of parental involvement was influenced by language, education level, cultural influences, and family issues (Pena, 2000). Other parental factors such as the educational level or literacy skills, efficacy, self-esteem, and logistical issues such as transportation, child care, and work schedules impact the amount or quality of involvement parents have in their children’s education (Delgado-Gaitan, 2001; Hyslop, 2000; Pena, 2000; Shumow & Lomax, 2001; Sosa, 1997; Trumbell et al., 2001). Martinez (2006) indicates that many parents are indeed involved, just not in the ways that school personnel recognize. The challenge for educators is understanding parents’ attitudes, values, and belief systems about education that would foster involvement in
education as well as understanding parental perceptions of involvement and overcoming the cultural disconnect. Additionally, educators must develop multicultural sensitivity and competence in classroom practices and communication efforts with parents.

Recent changes in the No Child Left Behind Act requires states to set the same performance expectations for children from all major ethnic and racial groups, from disadvantaged families, with limited English proficiency, and with disabilities (NCLB, 2002). If a subgroup of students consistently falls below performance targets, schools must provide public school choice and additional learning opportunities for those students. This is a challenge for many districts across the nation. Summer school and after school programs are often costly and difficult to staff, so many districts are looking for alternative learning opportunities that will meet the needs of diverse student populations. Furthermore, programs that foster parents taking an active role in their children’s learning are likely to strengthen the home-school connection intended to support the whole child.

Background Information on Bridges Program

One such program may be the Bridges Program, developed by the Federal Educational Publishing Company. The Bridges program was originally developed by classroom teachers to provide grade level curriculum exercises and activities to engage students over the summer break from school. It was written to foster parental involvement for the English or Spanish-speaking parent. Each grade-level book contains cross-curricular activities, a parents’ guide, an age-appropriate book list, incentive contract, high-frequency word list, and glossary (see Appendix A). All of the
instructions are printed in both Spanish and English.

The curriculum is correlated to National Standards addressing grade-level skills from Pre-K to Grade 6. Designed as a resource to prevent summer setback, each book provides a review of the skills in math, reading, writing, and language arts for the previous grade, and then introduces skills for the next grade. A pretest is provided to be used as a diagnostic evaluation. Students are then assigned to the developmental grade level. A posttest is also included in each book to evaluate student progress when the book is completed.

A contract is included in each book as an incentive for both the child and parent to commit to use the Bridges program over the summer. The parents keep the contract in an accessible place (e.g., the refrigerator, child’s bulletin board, etc.) to remind the child to complete the tasks as well as allow parents to monitor, praise, and check daily work. There is a grade-appropriate reading list in each book to provide guidance for the parents to encourage free reading. A glossary of terms used in the book is included in Spanish for the Spanish-speaking parents. The books also contain the answer sheets for all the assignments and flash cards for additional practice.

While the Bridges program was designed to be an at-home learning program implemented over the summer months, it was used during the school year in this study. One might logically assume that the books would serve to be valuable bilingual parent resources during the school year as well as in the summer. For the purpose of this study, the books were utilized during November, December, and January as preparation for the standardized tests administered in March of 2006.
Problem Statement

The focus of this study was to investigate whether a relationship exists between the implementation of the Bridges Program during the academic year and achievement gains in a representative sample of elementary students. Of equal interest was the parents’ level of involvement in the academic preparation of their children. The Bridges program was made available to students during the school year to be administered at home. The research was designed to identify the achievement gains, if gains existed, of students who participated in the Bridges program at home during the academic year compared to their grade-level counterparts who do not. Standardized test scores (spring to fall comparisons) on reading and math achievement were analyzed to identify gains, and parental involvement and student motivation were measured for the treatment group.

Assumptions Underlying the Study

1. The researcher assumes that the participants in this study are a representative sample of Latino elementary students from across the U.S.

2. The researcher assumes that the measurement instruments that have been established are appropriate to the population of this study.

3. The researcher assumes that parents answering the questionnaires are doing so honestly.

4. The researcher assumes that the demographic information and student achievement information obtained from student records is sufficiently free of error.

5. The researcher assumes that parents read and understand the measurement instruments.
6. The researcher assumes that the pretest and posttests are administered appropriately.

General Research Hypotheses

This study sought to identify the effectiveness of the Bridges program in increasing parental involvement, student motivation, and academic achievement. Based on the literature, the following general hypotheses were addressed:

GH1: The Bridges program accounts for a significant amount of unique variance in predicting academic overall gains on standardized tests in reading and math.

GH2: For students in the Bridges group, there will be a significant gain between pretest and posttest scores in reading and math at each grade level.

GH3: Within the Bridges group, ethnicity accounts for a significant amount of variance in predicting posttest scores independent of pretest scores.

GH4: For the Bridges group, post-motivation scores are positively related to achievement gains on standardized tests.

GH5: Within the Bridges group, post-motivation scores account for a significant amount of variance in predicting the completion of Bridges books independent of pre-motivation scores.

GH6: There is a significant difference between males and females in predicting achievement gains in reading and math.

GH7: For the Bridges group, parental involvement accounts for a significant amount of unique variance in predicting achievement gains in reading and math.
Purpose of the Study

Latinos are the nation’s fastest growing minority group in the United States (U.S. Census Bureau, 2005). One in nine Americans and one in every four people entering the labor force is of Latino decent. As the number and proportion of Latino students continues to increase, the issue of the achievement gap with minorities has even greater significance. Statistics indicate that Latino children are more likely to enter kindergarten unprepared to learn, more likely to fall behind their white counterparts as they progress through elementary school, and more likely to drop out of high school (Educational Commission of the States, 2004; From Risk to Opportunity, 2003).

Recent studies have investigated the growing problem of Latino underachievement (Education Commission of the States, 2004). The Latino population is not characterized as a group of low performers. Reasons why some students perform well and others do not must be investigated. One key factor appears to be effective home-school connections including access to learning materials and out-of-school learning opportunities. Furthermore, it has become apparent that school personnel must address the cultural differences and language barriers that have prevented more effective home-school partnerships with the Latino community.

Throughout the last 30 years, researchers have been investigating a variety of interventions designed to narrow the achievement gap. Studies indicate that minority students often arrive at school with substandard skills needed to prepare them for learning compared to their majority counterparts (National Center for Education Statistics, 2003). The language barrier, cultural differences, and inequitable access to
educational materials also contribute to the disparity among student groups (Jimenez, 2000, 2001; Schmid, 2001; Thomas & Collier, 1997; Tinkler, 2002). It is also clear that the amount of parental support or involvement, access to learning materials, and time spent on academic activities all contribute to the gap (Barton, 2003; Epstein, 1985, Henderson & Berla, 1994; Izzo, Weissberg, Kasprow, Fendrich, 1999; Tinkler, 2002). As a growing number of districts are reevaluating compensatory and voluntary intervention programs, an investigation of an informal at-home learning opportunity that would provide students access to academic materials, encourage parental involvement in multiple ways, and improve students’ basic skills would be valuable for educators striving to close the gap. This study will examine data that could be helpful in future interventions designed to narrow the achievement gap.

**Delimitations**

This study was delimited to students in Grades 1-6 enrolled in a charter school in New Mexico with a high Latino population. This school was selected because the administrators and school personnel made a commitment to participate. The high Latino population in the community and the large number of non-English speaking parents in the school population made this study extremely relevant for the school. This study was also delimited to students and parents who volunteered to complete the Bridges books and the questionnaires. However, the school provided student data on spring and fall standardized test scores for the entire student population. While data collection was limited to only one site, a total of 334 subjects was analyzed. Of the 334 students in the school, 150 initially volunteered to participate in the Bridges program.
Operational Terms

Achievement gap. Refers to the finding that, on the average, African-American and Latino students score lower on most standardized tests than white and Asian students. The achievement gap in this study will be measured by the discrepancy of pretest and posttest scores on Bridges grade level tests.

Achievement gains. Refers to the difference or increase, if an increase exists, between the fall standardized test scores and the spring standardized test scores on the New Mexico Standards-Based Assessment test (Grades 3-6) and DIBELS Assessment test (Grades 1-2) (see Appendix xx).

Culture. Refers to the learned behavior patterns of a specific group of people. These patterns of behavior are regarded as a “traditional way of life.”

Environmental factors. The quality of the child’s home environment to promote learning. This would include the number of siblings in the home, the child’s access to a learning area conducive to independent or one-on-on learning activities, etc.

Family structure. Describes the child’s family composition with regards to primary caregiver, single parent or two-parent household, number of siblings or extended family members residing in the home.

Latino. People who have cultural heritage or background to a Spanish-speaking nation living in the United States; also referred to as Hispanics

Low socioeconomic status (SES). Defined by the child’s participation in the free or reduced lunch program.
**Math achievement.** Students’ mathematical ability as demonstrated by the difference in scores on the fall and spring New Mexico Standards-Based Assessment test for grades 3-6 and a site-created assessment for grades 1-2.

**Overall achievement.** Refers to the overall achievement on standardized reading and math New Mexico Standards-Based Assessment and DIBELS tests.

**Parental involvement.** The nature of a parent’s expressed support of a child’s education and ability to learn. This would include their direct participation in at-home learning activities, school events, and communication with teachers as measured by pre-program questionnaire items 30, 31, 32, 33, 34 and post-program questionnaire items 16, 17, 18, 19, 20, 21, 24.

**Reading achievement gains.** Students’ reading achievement as demonstrated by the difference in scores on fall and spring New Mexico Standards-Based Assessment (Grades 3-6) and DIBELS (Grades 1-2) tests.

**Standardized test.** Any test that is used across a variety of schools. Designers of standardized tests must specify a discrete correct answer for every question, and questions generally consist of multiple-choice or true-false questions which can be scored by machines.

**Student motivation.** Perceptions about school and learning and the willingness the child demonstrates to participate in learning activities outside of school as measured by pre-program questionnaire items 24, 25, 26, 27, 28, 29 and post-program questionnaire items 10, 11, 12, 13, 15 answered by parents, and the researcher’s assessment of the amount of the workbook that has been completed.

**Out-of-school time (OST).** The time out of school (i.e. after school, summers).
Summary

Chapter I introduced the factors that impact student achievement and the achievement gap within minority populations, specifically Latino students. One key factor to the achievement gap appears to be access to supportive home-school connections that often includes access to out-of-school learning opportunities. The basis for the research involves an investigation of the effectiveness of the Bridges program in reducing the achievement gap among Latino students. Background information about the Latino achievement gap was provided as well as background information about Bridges, a program designed to provide structure and support during the summer months for bilingual parents to assist their children academically. General research hypotheses were presented demonstrating the scope of the investigation with regards to the Bridges program during the academic year. Chapter I also delimits the study to selected students in Grades 1-6 in a charter school with a large Latino population. Finally, a list of operational terms was provided to define frequently used terms within the study.
CHAPTER II

REVIEW OF THE LITERATURE

The research in this study focused on the achievement gap between the Latino student population and their White counterparts as it relates to parental involvement in the education of their children and out-of-school time learning experiences. Standards-based reform has identified a significant number of students that are performing below expectations. Closer investigation reveals that a disproportional number of underachievers are minority students. According to the NGA Center for Best Practices (National Governor’s Association), the achievement gap between minority and disadvantaged students and their white counterparts is one of the most pressing challenges of our educational policy makers (NGA, 2005). Hispanic youth in general are the most undereducated segment of the U.S. population and are “more than twice as likely to be undereducated than all ethnic groups combined” (Chavkin, 1993, p. 1).

There are many causes for low academic achievement among Latino students. Language barriers, teachers’ low expectations, prejudice, educational level of parents, and socioeconomic factors all play contribute to student achievement levels (Chavkin & Gonzalez, 1995; Delgado-Gaitan, 2001; Pena, 2000; Scribner, Young, & Pedroza, 1999; Tinkler, 2002; Trumbull et al, 2001). Furthermore, an increasing discrepancy between a culturally diverse student population and an overwhelming majority of white
middle class teachers has been described by researchers in the field as the
“demographic imperative” (Banks, 1995; Cochran-Smith, Davis, & Fries, 2004;
Dilworth, 1992). According to Cochran-Smith, et al. (2004), the “demographic
imperative” is “even more imperative than a decade ago” (p. 935) because the majority
of white teachers lack the training and multicultural competence to address
linguistically and culturally diverse students, view culturally diverse students with
lower expectations and lack the skills necessary to bridge cultural differences between
home and school (Futrell et al., 2003; Gay, 1993; Goodwin, 2000).

It is logical, therefore, to consider how teacher educators are preparing an
overwhelming number of monocultural teachers to teach in multicultural classrooms.
According to a pilot study conducted by Smolen (1996), the majority of faculty in
teacher preparation programs believe that it is important to help preservice teachers
acquire the skills and knowledge necessary for multicultural competence. However,
there was little evidence to suggest that these beliefs were demonstrated in preservice
teacher programs. This study raises important questions regarding the manner and
attitudes toward which our nation’s universities and colleges approach the teaching of
diversity and prepare preservice teachers with the skills necessary for multicultural
student and parent populations (Cockrell, Placier, Cockrell, & Middleton, 1999;
Colville-Hall, MacDonald, & Smolen, 1995; Fuller, 1994; MacDonald, Colville-Hall,
& Smolen, 2003; Sleeter, 2001; Smolen, 1996)

This issue of teacher preparedness is vital in addressing the education of all
children in our schools. Teacher attitudes, instructional strategies, and understanding
of cultural differences not only affect the student-teacher interaction, but also impact
the teacher-parent interaction. Given the influence parents have over the educational success of their children and the fact that over the last 20 years, participation by white parents has increased while participation by minority parents has decreased, this has become an important educational issue (Moles, 1993).

There is also a growing body of research that indicates factors such as socioeconomic status, race, gender, and English proficiency impact the expectations teachers have for their students (Levine & Levine, 1996; Oxford, 1995; Schmid, 2006; Sunderland, 1994). As we learn more about the role that gender plays in language learners, experts are beginning to pay close attention to the gender issue as it relates to the language and cultural differences of the Latino population (Pica, Holliday, Lewis, Berducci, & Newman, 1991). Levine and Levine (1996) state that the ESL Latina performs far below her peers because she must is challenged with not only the language, but also gender inequalities in school and society. Furthermore, this problem is often exacerbated because gender bias is imbedded in many educational materials (Bailey, 1992; Brown & Gilligan, 1993; Orenstein, 1991; Schmid, 2006).

Gender bias in instruction and curricular materials has been examined to determine the factors affecting achievement of Latino students specifically (Schmid, 2006). Schmid maintains that Latino girls are more likely than Latino boys to be bilingual, earn higher grade point averages, and graduate from high school. Moreover, she claims that Latino boys are more likely to be underachievers, assigned to remedial classes, and have more discipline problems than girls. Conversely, Brown, and Gilligan (1993) found that race and class impact girls’ interpretation of in-school activities and out-of-school activities. Upon examining academic confidence,
engagement in academic activities, and self-esteem, Brown and Gilligan examined girls of different races and classes. This study shows an overall decline in Latinas’ academic confidence and interest in educational tasks as they progress through school. Furthermore, Orenstein (1991) claims that Latinas drop out of school at a greater rate than any other ethnic group perhaps due to low teacher expectations, low self-esteem, or unmet learning needs. Educators must be aware of gender biases in instructional strategies and materials used in the classroom to be sensitive to the learning needs, personal interests, and cultural differences of their students. According to Bailey (1992), we must work toward establishing a “gender-equitable” curriculum with materials and instruction that address the needs, interests, and experiences of both males and females.

For the purposes of this review of the literature, the focus was on the Latino achievement gap as it relates to parental involvement and out-of-school learning experiences that impact student achievement. This includes the impact that different types of parental involvement have on student achievement, as well as the various sociocultural factors related to the achievement gap for Latino students. The chapter is divided into the following sections: Factors that Contribute to the Gap, Latino Achievement Gap, No Child Left Behind, Summer Learning Loss, Parental Involvement, Perceptions of Latino Parental Involvement, Sociocultural Factors Related to the Latino Achievement Gap, Language, Barriers to the Latino Achievement Gap, and Strategies for Improving Parental Involvement.
Factors that Contribute to the Gap

Research indicates that there are numerous school, community, and home factors that contribute to the achievement gap. Among these are socioeconomic status, summer setback, parental involvement, family education level, teacher preparation and multicultural competence, rigor of curriculum, class size, early childhood literacy, funding and quality of intervention programs, and assessment practices (Barton, 2004; Cooper et al, 1996; Entwisle & Alexander, 1992; Heyns, 1987; Kober, 2001; McGill-Franzen, & Allington, 2001). High levels of poverty and low levels of parental education both correlate to lower academic achievement. There may be several reasons for this. Children living in poverty are also more likely to experience other risk factors such as poor nutrition, inadequate housing conditions, inadequate medical conditions, and a lack of stimulating learning materials in the home. Furthermore, parents of lower education levels often lack the skills, time, or resources required to help their children develop language acquisition skills in early childhood (Alexander, 1996; Alexander & Entwisle, 1992; EdSource, 2005; Roscigno, 1998) However, when test scores are analyzed holding these two factors constant, the achievement gap is only decreased by about a third (Kober, 2001; Singham, 2003).

Clearly factors outside the school impact students’ academic success. However, there is no single factor for racial differences in achievement. According to Kober, “A complex combination of school, community, and home factors appears to underlie or contribute to the gap” (p. 3). In October of 1999, the College Board released a report indicating that the achievement gap is not rooted in social and economic factors. The report indicates that minority students, regardless of their
family income or parents’ education level, consistently performed below White and Asian students. Black and Latino students are less likely to take challenging courses, more likely to attend schools with fewer resources and higher student-teacher ratios, and have less access to learning activities at home and in the community (Goodwin, 2000; Kober, 2001).

Further investigation of factors within school control point to factors that may be perpetuating poor performance in our minority students. Over 300 research reports and documents were examined to identify causes for the poor performance among minority students (Goodwin, 2000). The results were grouped into six main categories: weak or inappropriate curricula, ineffective instruction, disengaging classroom discourse, poor student self-concept, unsuccessful adjustment to school culture, and prejudice. Kati Haycock (1998), executive director of the Education Trust, echoes this notion when she states: “The low achievement of low-income…and minority students—and even the mediocre achievement of other American students—is neither preordained nor intractable. This is, in other words, an achievement crisis of our own making.”

Clearly, there are a number of factors that contribute to the achievement gap. It is a result of what happens in our schools, our communities, and our families. Student achievement is impacted by a complex combination of things that certainly deserves our attention.

Latino Achievement Gap

The educational achievement gap between minority students and white students is a problem that has been documented for decades, but the continuing educational
underachievement of Latino students, the nation’s fastest growing minority group, has captured federal attention. As demographic data indicates, closing the achievement gap is a shared responsibility in our society. By the year 2030, Latino students are projected to comprise one-fourth of the K-12 population in the United States (Johnston, 2000). However, Latino students are making progress at alarmingly low rates. From preschool through high school and into higher education, the continuing underachievement of the nation’s fastest growing minority group has warranted deeper attention and research (August & Shanahan, 2006). According to a study produced by the Education Commission of the States (2004), Latino students are significantly more likely than white students to enter kindergarten unprepared to learn, repeat a grade in the elementary years, and drop out of school than their non-Latino counterparts.

Furthermore, of those Latinos that finish high school, only half are as likely to go on to college and earn a bachelor’s degree.

While there have been some successful efforts over the past 20 years to increase Latino students’ performance on national achievement tests, research surrounding early childhood education shows a substantial achievement gap between Latino students and their White counterparts appearing in early childhood. For example, the Early Childhood Longitudinal Study of the U.S. Department of Education examined the differences in math scores among kindergarten students in spring 2000. The average math test score for whites was 45.5 with Latino youngsters trailing at 40.0 (Pew Latino Center, 2004). Furthermore, the report indicates that students with parents born in Mexico, the Dominican Republic, and Puerto Rico scored substantially lower than white students. According to the 1999 National Assessment of Educational Progress
(NAEP) analysis, the average achievement scores of Latino students are consistently lower than White students at all grade levels. For example, the average score for Latino 9-year-old students was more than three grade levels behind White 9-year-olds in science. Only 14% of Latino fourth grade students were identified as proficient or advanced based on their performance on the 2002 NAEP reading test and 57% scored below the “basic” level. Less than 10% of Hispanic eighth grade students were identified as proficient on the 2000 NAEP mathematics test, with 60% scoring below “basic.” While Latinos comprise almost 20% of the K-12 student population in the nation, only 10% of the postsecondary enrollment is Latino. In 2000, the Latino-White gap on the SAT college entrance exam was 89 points in math and 70 points in verbal, allowing for only 13% of Latino students to obtain a college degree (Status and Trends in the Education of Latinos, 2003).

No Child Left Behind

Recognizing the disparity of education among subgroups in our public schools, the federal government assumed a larger role in setting standards for student performance and teacher equality with the No Child Left Behind Act established in 2001. The law requires states to implement programs that will ensure that all students achieve proficiency in reading and mathematics. Title I, the largest federal program supporting elementary and secondary education, provides flexible funding that may be used to support additional instructional staff, professional development, extended-time programs, and other strategies for raising student achievement in low-income schools. Although districts and schools may use Title I funds to serve children from preschool through Grade 12, 77% of Title 1 programs are delivered to students in preschool
through Grade 6. Schools may use Title I funds for school-wide programs or targeted assistance programs for low achieving students. Furthermore, children who attend underperforming schools (i.e., schools that do not reach adequate yearly progress for three or more years) are eligible to receive supplementary services. These supplementary services must be delivered outside of the regular school day and the services must demonstrate evidence of effectiveness in raising student achievement. Therefore, educators have become particularly interested in out-of-school-time (OST) strategies such as extended day (before- and after-school programs), extended year, and summer programs. The interest in OST strategies coupled with the growing research surrounding the impact parental involvement has on student achievement have promoted districts to look closely at the effectiveness of at-home learning programs.

**Summer Learning Loss**

While many believe that today’s typical 9-month school calendar emerged when our society was largely tied to the agricultural cycle, others maintain that summers were designated as “vacations” from school in the late 1800s as a way to reduce the length of the school year (Gold, 2002). Gold maintains that summer sessions were an integral part of the academic year until the mid 19th century when they disappeared due to efforts to lengthen and “standardize” school terms. Urban areas reduced their school year to around 200 days per year so as not to overtax students and teachers. Schools in rural areas often operated under irregular schedules, and the 9-month calendar was one way to deal with students’ setback that occurred during long breaks. Other reasons for cutting the summer session include school budgetary crises and an increase in family vacations in the middle class.
Currently, the debate about summer vacation still exists. In 1993, the National Education Commission on Time and Learning (NECTL, 1993) recommended that school districts evaluate the impact that their school calendars have on student learning, especially for minority and at-risk students. The report suggests that the uniform 6-hour day and a 180-day academic school year is the “unacknowledged design flaw in American education.” Furthermore, they encourage local schools to use categorical programs to supplement learning time for target students. The report reads:

All federal programs should follow the larger intent of the Clinton administration's legislation, GOALS 2000: Educate America Act. This bipartisan legislation puts the National Education Goals into statutory language. It promises to free local schools from regulation in favor of accountability. It focuses on results, not red tape…Too often these programs have defeated their own purpose: funds have been used for programs that replace the school's learning time. They should support after-school, weekend, and summer programs. (p. ____)

Many teachers and parents endorse the suggestion to provide students with supplemental learning experiences. Many feel that children learn best when instruction is continuous and that long summer vacations not only interrupt instruction, but also require teachers to spend a significant amount of time reviewing material that students have forgotten when they return to school in the fall. Studies indicate that the negative impact of summer vacation is more pronounced for mathematics and spelling skills (Cooper, 1996). This is due to the fact that skills that require factual and procedural knowledge, such as spelling and mathematics, are more susceptible to forgetting than conceptually based skills (Cooper & Sweller, 1987). Also, the long summer break can have a greater negative effect on students with special educational needs. For example, children who live in Latino households and speak Spanish throughout the summer may
experience greater setbacks in their English language skills by an extended period without practice with the English language.

Researchers have studied the impact of summer vacation on student achievement and learning since the early 1900s (Elder, 1927; Irmina, 1928; Noonan, 1926; White, 1906). A common finding across these studies is that students generally scored lower on standardized tests at the end of the summer than they did on the same tests at the beginning of the summer. There is an abundance of more recent research which demonstrates that all students experience significant learning losses the summer months (Cooper, 2003; Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996; Entwistle & Alexander, 1992). Measuring changes in achievement level is a complex topic that is debated in the literature. The most frequently used metrics are absolute measures of change and relative measures of change including grade-level equivalents and percentile ranks. Absolute measures of change involve having the students take the same test twice or equivalent forms of the test to compare the raw scores of items answered correctly. Standardized scores are also measures of absolute change. Researchers interested in studying change relative to comparison groups frequently use relative measures of change such as grade-level equivalents or percentile ranks.

A recent meta-analysis by Harris Cooper (1996) estimates that, on average, summer loss for all students is approximately one month on a grade-level equivalent scale. Cooper also found that the effect of summer vacation had a greater impact on mathematics skills than for reading, and that math computation and spelling skills suffered the greatest loss. These studies also indicate that summer learning loss varies significantly by grade level, subject matter, home language, and family income.
The differences in out-of-school learning experiences also seem to contribute to the widening achievement gap between children of low income and middle or high income families (Alexander, 1996). In one of the most comprehensive longitudinal studies on summer loss, sociologists Karl Alexander and Doris Entwisle have followed 790 randomly selected Baltimore students since they entered first grade in 1982. The students are from different socio-economic backgrounds and were enrolled in 20 different schools around Baltimore City.

Alexander and Entwisle (1996) compared changes in test scores during the school months to changes that occur in the summer months. The researchers attributed gains or losses during the school months to the school's contribution to achievement. Conversely, they identify gains or losses that occur over the summer months to family, socioeconomic, and community influences. Alexander and Entwisle concluded that children from low income families were learning at the same rate as middle-class students during the school year but fell much further behind during the summer. They explain this effect of income by suggesting that children of low socioeconomic status have fewer learning opportunities and less parental support for learning outside of school.

Their findings further show that when poor students return to school in the fall, they would learn at the same rate as students of middle or high socioeconomic status. However, the "summer slide," creates wider learning gaps each year. By time the students are in fifth grade, the difference in verbal achievement is more than two years, and in math, it is a year and a half. Entwisle and Alexander (1992) maintain that the differential effect for reading and math can be explained by the fact that opportunities
to practice math are relatively equal among income groups. Access to reading materials and language learning opportunities, however, are notably different between low-income homes and other homes. Furthermore, children in non-English speaking homes have minimal opportunities to practice language development skills since they receive no English modeling or reinforcement from their parents and are exposed to fewer learning materials in the home. In other words, disadvantaged students lose ground when school is not in session and parents have primary academic influence.

Parental Involvement

Recent legislation such as the Goals 2000: Educate America Act, the reauthorization of the Elementary and Secondary Education Act (ESEA), and the No Child Left Behind Act (NCLB) have refocused our attention to parental involvement. School districts are reexamining their policies and home-school programs to demonstrate innovative and effective ways to reach parents. Federal education dollars, Title I funding in particular, depend on districts’ abilities to develop effective partnerships between home and school to improve student achievement.

Clearly, there is a plethora of evidence that parental involvement facilitates student achievement (Ascher, 1988; Catsambis, 1998; Chavkin, 1986; Chavkin & Gonzalez, 1995, Clark, 1993; Cotton & Wikelund, 1989; Epstein, 1996; Izzo, Weissberg, Kasprow, & Fendrich, 1999; Steinberg, 1996). Chavkin (1986) maintains that not only is parental involvement essential to academic success, but it is fundamental to students’ social advancement when he states,

In addition to the positive relationships between parent involvement and academics, there are benefits in increased student attendance, positive
parent-child communication, improved student attitudes and behavior, and more parent community support of the school. (p. 119)

Inger (1992) echoes this notion when he states:

There is considerable evidence that parent involvement leads to improved student achievement, better school attendance, and reduced dropout rates, and that these improvements occur regardless of the economic, racial, or cultural background of the family. (p. 1)

Many of the studies in the literature that examine the impact of parental involvement employ research designs with methodological limitations. A weak research design includes the use of a non-experimental design, failing to isolate parent involvement effects, and failing to consistently and accurately measure parental involvement. For example, a study that fails to isolate the effect of parental involvement from the benefits of additional assistance in learning could lead to false conclusions that parental involvement is the cause of enhanced student performance. There are other explanations which could contribute to or explain an increase or decrease in student achievement. Without isolating the parental involvement factor, it is difficult to attribute student success solely to parental involvement. Additionally, inconsistent definitions of parental involvement can lead to inconclusive findings. It is important to examine the studies that are explicit regarding the type and extent to which parental involvement is measured as well as how it aligns to the underlying construct of parental involvement. However, overwhelmingly, the literature substantiates a link between parent involvement and academic achievement.

Joyce Epstein and her colleagues (1996) at the Center of Family, School, and Community Partnerships studied TIPS, Teachers Involving Parents in Schoolwork. They found higher student achievement and better attendance rates in schools with
highly rated parent partnerships. Epstein et al. developed a framework of six types of effective parental involvement. The six types of parental involvement are: (a) parenting – expressing expectations, monitoring television viewing, daily supervision with activities and friends, etc., (b) communicating – contacting school personnel about student progress, (c) supporting school – volunteering time and attending school functions, (d) learning at home – providing academic lessons or instructional support in the home, (e) decision-making – taking part in parent organizations, and (f) collaborating with the community – utilizing community learning opportunities such as zoos, museums, youth organizations, etc. This framework is a widely accepted typology of parental involvement as many researchers have adopted it for their studies.

Taken as a whole, the current literature suggests that parental involvement within the school probably has modest positive effects on student performance. While attending parent-teacher conferences, communicating with teachers and school personnel, and participating in school functions are important, the bulk of the research indicates that how parents interact with their children at home and the kinds of academic activities they expose their children to outside of school are greater predictors of student achievement.

One study that clearly demonstrates the positive effects of at-home learning experiences on children’s school-related skills is the Early Childhood Longitudinal Study-Kindergarten Cohort of 1998-99. Researchers found significant differences in beginning reading skills that they attributed to the varying levels of exposure to print in the home. For example, 18% of children entering kindergarten in the fall of 1998 could not identify basic text conventions related to a story book such as where a line of
print ends, where the story ends, or that print is read left to right. Conversely, a small number of students had already learned a number of sight words and could mimic the tracking of text from left to right.

According to Henderson and Berla (1994), the most accurate predictor of student achievement is (a) the extent to which a family is able to create a home environment that promotes learning, (b) express high expectations for learning, and (c) become involved in the educational activities of the child at home and at school. Of the 66 studies on parental involvement and student achievement that Henderson and Berla reviewed, three overall findings emerged. When parents are involved with their child’s education, (a) students have greater success in school, (b) children place a higher value on education and go further in school, and (c) the schools they attend are better schools. The researchers also delineate the roles that participatory parents take in their children’s education as teachers (reinforcing learning at home), supporters (providing extra educational services and support at home), advocates (communicating with school personnel on behalf of their children), and decision-makers (serving on committees, advisory councils, etc., to make decisions that impact the student body). Henderson and Berla’s research is significant to this study because it not only demonstrates the importance of parental involvement, but it also defines the types of involvement that positively impact student achievement.

Other literature validates Henderson and Berla’s research and identifies the most important forms of parental involvement are those which engage parents in working directly with children at home. This includes reading to them, assisting with homework, and providing other educational activities such as trips to zoos or museums
(Catsambis, 1998; Cotton & Wikelund, 1989; Epstein, 1996; Izzo, 1999, Walberg, 1984). Izzo, Weissberg, Kasprow, and Fendrich (1999) also found that enhancing parental involvement in schooling has a significant impact on student achievement. In a longitudinal study of 1,200 low-income, minority children in New England, Izzo and his colleagues concluded that parental involvement was positively related to student achievement. Teachers provided information on parental involvement and student performance for 3 consecutive years. The researchers measured parental involvement based on four dimensions: (a) frequency of parent-teacher contact, (b) quality of parent-teacher interactions, (c) support of educational activities at home, and (d) participation in school activities. The frequency of parent-teacher contacts declined as students progressed from the first year to the third year. However, participation in educational activities at home demonstrated the widest range of performance variables. Furthermore, Izzo et al. concluded that parental involvement at home provided more consistent results with students because it remained steady over time, while involvement at school declined as students reached higher grades.

Clark (1993) studied over 1,000 high and low achieving third grade students in Los Angeles. Through parent questionnaires, he determined that parents of high achieving students had higher expectations than parents of low achieving students. Clark also identified the phrase “press for academic success” which includes four factors that explain 50% of the variation between low and high achieving students. These factors include parents’ knowledge of the curriculum and homework, parents’ perceptions of student motivation, children’s knowledge of how to use a dictionary, and parental expectations for the child’s education.
Conversely, there are other studies which indicate that parental involvement has more positive benefits when parents are physically present in the school. For example, Steinberg (1996) studied children and parents over time to separate cause and effect in looking at parental involvement and student achievement. According to Steinberg, parental presence within the school has a greater impact on student achievement than their involvement in academic activities at home. He maintains that parents who attend the school for student functions, parent-teacher conferences, volunteering opportunities, etc., send a strong message to both the child and the school personnel about their value of education. This also reinforces the idea that school and home are closely connected, worth investing time and energy in, and an important part of the whole family’s life. This value, an intrinsic value, will enable children to become responsible for their own learning and set their own high academic goals.

Perceptions of Latino Parental Involvement

Despite the research that demonstrates the importance of parental involvement for student achievement, studies show that the parental participation of minority students is rapidly decreasing (Floyd, 1998; Moles, 1993). Teachers often misrepresent this lack of participation in school related activities to be a lack of value or concern for their children’s education. According to a recent ethnographic study conducted by Delgado-Gaitan (2001), an overwhelming majority of teachers (98%) felt that parental involvement is essential to academic success. However, most lamented that parents simply do not work with their children at home. Furthermore, this lack of participation translates into a lack of care or concern. Inger (1992) states, “Many school administrators and teachers misread the reserve, the non-confrontational
manners, and the non-involvement of Latino parents to mean they are uncaring about
their children’s education” (p. 1). However, research that examines Latino perceptions
of their role in the education of their children indicates otherwise (Chavkin &
Gonzalez, 1995; Cotton & Wikelund, 2001; Trumbull, Rothstein-Fisch, Greenfield, &
Quiroz, 2001). Trumbull et al. maintain that, “Studies of immigrant Latino families
have repeatedly shown that parents are highly interested in being involved in their
children’s education” (p. 32).

Part of the inconsistency between teachers’ perceptions and parents’
perceptions of involvement stems from the variations in the definition of parental
involvement. As illustrated in the previous section of this literature review, parental
involvement can mean formal visits to the school such as parent-teacher conferences,
attendance at school functions, and volunteering. To others, parental involvement may
mean checking children’s homework, reading to them, or ensuring that children attend
school well-rested, clean, and fed. According to Ascher (1988),

Parent involvement may easily mean quite different things to people. It
can mean advocacy; parents sitting on councils and committees,
participating in the decisions and operations of schools. It can mean
parents serving as classroom aides, accompanying a class on an outing, or
assisting teachers in a variety of other ways, either as volunteers or for
wages. It can also conjure up images of teachers sending home notes to
parents or of parents working on bake sales and other projects that bring
schools much needed support. Increasingly, parent involvement means
parents initiating learning activities at home to improve their children’s
performance in school: reading to them, helping them with homework,
playing educational games, discussing current events, and so on. (p. 109)

Clearly, each of these definitions is a reasonable view of what parental
involvement entails. Considering that parents see their roles through cultural lenses
and schools may have completely different ideas about what constitutes parental
involvement, it is not surprising that each has different goals relating to supporting the student. Scribner et al. (1999) conducted a study with Latino schools in Texas to determine the effects and level of parental involvement. They found that teachers defined parent involvement as participation in school functions. Conversely, parents defined involvement as helping children with their homework, listening to and talking with their children, and sending them to school clean and well-fed. Scribner et al. maintain that since the schools defined parental involvement as visible participation and the parents defined involvement in a much more global sense of supporting the child’s total well-being, any measurement of parental involvement that does not incorporate both views is myopic and does not provide an accurate indicator of the contribution of parents.

Another example of the discrepancy between parents’ views of their role in education and schools’ views is demonstrated in a study conducted by Lopez (2001) of a migrant family in Texas. The Padillas family felt they were highly participatory in their children’s education, however, they did not demonstrate their participation in ways that the school would recognize. The Padillas’ goal was to teach their children the value of hard work and instill an appreciation for a good education. Taking the children with them to work in the fields was a concrete reminder of what their lives would be like without a solid education. The Padillas used their own lack of education as a way to teach their children that if they didn’t work hard in school and value the educational opportunities they were given, they would face employment limitations and a life of hard labor. This example adds another element to the definitions of
parental involvement with the literature refers to as the “transmission of sociocultural values” (Diaz-Rico & Weed, 1995; Lopez, 2001; Smrekar, & Cohen-Vogel, 2001).

Martinez (2006) interviewed six Mexican origin families to determine how they perceived their role in education. Her findings indicate that while parents perceived themselves as involved, teachers often did not. While Martinez found eight main barriers which seem to prevent many Mexican parents from participating (language, parents not understanding the school culture, schools not understanding the families’ culture, mistreatment at school, unsuccessful attempts to help with homework, lack of communication, long working hours, and parents’ own negative experiences in school), there was a disconnect between teachers’ perceptions of parental participation and parents’ perceptions. Parents in this study indicated that they deeply cared about the educational opportunities their children were granted. Furthermore, one of the main reasons for the difficult move to the United States was to enable their children to educational opportunities they wouldn’t have had in Mexico. Despite this, their perceptions of participation did not match those of the teachers. Martinez concluded that mainstream educators and these Mexican origin families were operating under two very different paradigms regarding what it means for parents to be involved in education.

Sociocultural Factors Related to the Latino Achievement Gap

According to the literature, learning occurs within social and cultural contexts. (Chavkin & Gonzalez, 1995; Diaz-Rico & Weed, 1995; Garcia Coll, 1990; Gonzalez, 2001; Harrison, Wilson, Pine, Chan, & Buriel, 1990). Gonzalez (2001) has found that socioeconomic status and sociocultural factors are the two factors that significantly

36
influence language-minority children’s development. She maintains that socio-economic status and sociocultural factors are highly interrelated such that poverty, educational level of parents, family composition, values and beliefs, child-rearing practices, and stress all impact the quality of the home environment, the parent-child relationship, and, ultimately the child’s development and achievement. Gonzalez explains the “multidimensional model” for understanding minority children’s development:

The transaction between biological, social, and cultural factors (representing interactions between internal and external factors) may create effective, or ineffective, home environments for minority children to become resilient or at risk of developing learning problems. (p. 2)

Gonzales elaborates on the role of sociocultural factors when she says:

Sociocultural factors exert their influence within a family structure in which parents mediate their children’s behaviors for their adaptation to the wider social system…. In order to adapt successfully to the U.S. public school system, language minority parents and their children have to develop sociocultural strategies for balancing the continuities and discontinuities present between the minority family structure and the mainstream school cultures. (p. 15)

August and Shanahan (2006) investigated the effects of sociocultural factors on literacy development. With a few exceptions, they found that the current studies lack the empirical links between sociocultural factors and student outcomes. Overall, however, they maintain that student performance is likely to be the result of a combination of effective home and school learning opportunities.

Cummins (1986) maintains that language minority students’ success or failure is closely connected to the relationships they and their parents establish with educators.
His “interactive empowerment theory” proposes that students’ academic achievement is largely dependent upon the extent that language and culture are incorporated into the school program, the extent to which parents and the community are included in the educational processes, and the extent to which students are enabled to generate their own knowledge based on prior experiences. Furthermore, student learning is hinged on the ability to recognize, understand, and accept the language and culture of the learning community.

Garcia Coll (1990) maintains that the most important influence on the academic development of minority children is the cultural beliefs and values held by their caregivers. For example, the presence of extended family members who care for children within the Latino culture is often related to the ideologies in the “cultural hierarchy of priorities” they hold. In many cases the top developmental priority is survival and physical health, followed by strong traditional ideologies such as familism and collectivism and economic stability. Harrison, et al. (1990) supports Coll when he suggests that Latino families depend on extended family members for income, childcare, household maintenance, and emotional support. This strong familism within the Latino culture instills social goals and value systems such as cooperation, obligation to family, sharing and social/psychological dependence which contrasts sharply with the mainstream cultural values of competition, autonomy, and independence. Harrison et al. refers to the sociocultural process that Latino children and their parents must follow in order to be successful in mainstream society as “cultural transition.” Different family and social structures in which Latino children live produce different adaptive strategies for social interaction (Gonzalez, 2001).
However, a duality of bicultural adaptation is essential for these students to be successful in adapting to mainstream public education systems. The challenge in developing bicultural acculturation lies in the cultural discontinuities. In our mainstream school culture, children need to acquire independent thinking skills, problem-solving strategies, and assertiveness that enables them to be responsible for their own learning. The opposition of these mainstream values with the Latino culture must be acknowledged and respected in both school and family contexts (Gonzalez, 2001).

Rothstein-Fisch, Greenfield, and Trumbull (1999) refer to this tension as Latino “collectivism” versus mainstream school individualism. Collectivism emphasizes the well-being of the group and maintaining positive interdependent relations. In contrast, most schools emphasize an individual, autonomous, competitive approach. When Latino students with a collectivistic value system encounter school climates with an individualistic focus, conflicts based on hidden assumptions occur. Collectivism and individualism reflect fundamentally different perceptions about education, learning, and social development. Collectivistic societies foster interdependence and group consensus over individual accomplishment. Children in collectivist societies are less likely to be asked to share their opinions or to talk about school activities. Children are taught to look to their elders as the sources of knowledge and wisdom for their community, and forms of self-expression that prevails in U.S. culture would be viewed as disrespectful (Delgado-Gaitan 1994). Educators who understand the collectivistic value system of their Latino students and the individualistic culture of the mainstream
schools in our country can begin to bridge the gap. According to Trumbull et al. (2000),

Teachers who serve each day as cultural mediators know the challenge goes beyond language. Even as they try to help immigrant students navigate a new system of education, their own teaching methods and most routine classroom expectations can come into perplexing conflict with children’s cultural ways of knowing and behaving. (p. 1)

The cultural values that Latino parents perceive as appropriate and positive in instilling strong educational values are often in sharp contrast to teachers’ expectations of parental roles. Latino parents tend to see a clear distinction between the role of the parents and the role of the teachers (Chavkin & Gonzalez, 1995). The role of the school and the teachers is to instill knowledge, while the role of the parents is to nurture the total child, as well as teach him to respect authority, behave appropriately, and have good morals (Chavkin & Gonzalez, 1995; Trumbull et al., 2001). A study conducted by Smrekar and Cohen-Vogel (2001) confirms the discrepancy in the perception of roles. Teachers are seen as the communicators while parents assume the role of receptors of information. Often meetings are held at school rather than in community centers or homes with specific agendas rather than an open forum structure that encourages parents to voice opinions, raise questions, or participate actively. This meeting structure perpetuates the concept that the school delivers information and the parents receive information. Additionally, many Latino parents feel that questioning a teacher or school official implies that they are questioning their expertise or authority (Chavkin & Gonzalez, 1995; Trumbull et al., 2001). In our standards-driven system, many parents do not understand the educational goals or grade-level expectations of their children. Furthermore, the school curriculum reflects the skills and knowledge of
the “white-collar society” of which they do not fit into (Smrekar & Cohen-Vogel, 2001).

Teachers are highly respected in the Latino community (Chavkin & Gonzalez, 1995). It is often this sociocultural value and respect for educators that prevents parents from approaching teachers and asking questions about grades, assignments, or evaluation. Latino parents view this kind of involvement as interference in the schooling process as well as rude and disrespectful (Chavkin & Gonzalez, 1995; Espinosa, 1995; Trumbull et al., 2001).

Language

Low levels of academic achievement of Latino youth have prompted educators and researchers to focus on ways to promote literacy and language development. Robert Jimenez (2000) has studied low performing Latino students to determine the most effective curriculum and instructional methods. Jimenez maintains that promoting literacy development alone without considering the language and culture of the students in non-English speaking homes may actually alienate them by neglecting the meaning and use of literacy in their homes and communities. His findings indicate that educators often fail to appreciate the challenges of navigating between two separate cultures. Language brokering, according to Jimenez, refers to students translating written and oral communication from English to Spanish for their parents (Family Center on Technology and Disability, 2003). Largely underestimated in the educational community, language brokering may be as valuable to children’s literacy development as the typical reading and writing activities evident in many mainstream middle class homes. Jimenez maintains that children who engage in language
brokering are dealing with language and interacting with adults in very sophisticated ways. Typically, the child acts as a translator for a textual source or authority figure such as a medical professional, legal figure, or school personnel. Many Latino children are translating tax forms, rental agreements, invoices, and academic reports. Jimenez asserts, “There are instances when children are asked by parents about the meaning of the actual content of what they are translating, which can put those children in an adult position. They are asked to become authorities on the document their translating” (p. 3). Furthermore, basic linguistic behaviors like switching between languages or using frequent translation are often viewed as examples of poor literacy skills or resistance to the acculturation process rather than social and academic strategies that students use to connect new ideas and prior knowledge and support the academic process.

Jimenez (2000) elaborates on the complex responsibilities children in non-English speaking home often engage in. In his research, students describe common examples of complicated linguistic brokering. One student describes translating an exchange between a family member and a store employee. The child’s aunt cannot communicate with the English-speaking store employee so the child must translate her aunt’s request to the employee and then translate the employee’s response to her aunt, continually switching between languages and accurately communicating what is being said. Jimenez analyzes this type of linguistic brokering as an “intense translation interaction… the importance of speed, and the rather frantic pace of keeping two participants, who have monolingual mindsets, engaged in something approaching the casualness of any other monolingual interaction” (p. 988). Interestingly, the child was equipped to perform this complex translational interactions, but her bilingual teacher
indicated that she was a “low-literacy student who was not performing well in the classroom.”

Language used at home by parents may also communicate cultural values and belief systems in relation to educational goals and developmental expectations for their children. For example, Delgado-Gaitan (1994) conducted ethnographic interviews with Latino immigrant parents with low educational levels. She discovered that less educated immigrant parents believed that engaging their young children in communication and conversation was “silly” because they were not likely to understand what was being said. More educated immigrant parents verbally engaged their children at a very young age because they understood the benefits of immersing children as young as infants in the acquisition of language skills.

In a subsequent study on the impact of sociocultural factors on learning, Delgado-Gaitan (1994) also provided immigrant and first-generation Latino parents the opportunity to participate in a parent/community organization. Before participation in the parent program, Latino parents with low educational levels just allowed children to observe the activities offered in the organization. The limited education of these parents and their views of appropriate interaction by their children had an impact on how language was modeled and taught at home to the children. Latino parents, especially immigrant parents, fear the change of family values and felt a tension on the degree of acculturation experienced by their children as they got older. Delgado-Gaitan found that after the program, first-generation parents engaged their young children in conversation more often and gave them verbal instructions or explanations. They also began to provide stimulation for critical thinking skills in relation to
academic activities only. They did not treat to social exchanges the same way. For example, while parents began to encourage their children to ask questions, share ideas, and express opinions in the context of academic activities, they discouraged the children from engaging in other adult conversation. This would not be seen as an example of assertiveness valued from a mainstream cultural perspective, but socially unacceptable and disrespectful.

Language can also present an obstacle in the communication processes between school and home. Many school personnel and teachers do not speak Spanish and many Latino parents do not speak English (Chavkin & Gonzalez, 1995; Hyslop, 2000; Inger, 1992; Scribner et al., 1999; Shannon, 1996). Communicating information about grades, behavior, homework, standards, and grade-level expectations can be very difficult. If schools do not provide interpreters at conferences, school meetings and other functions and parents cannot understand what is being said, their attendance is pointless. Furthermore, Spanish-speaking parents are unable to help their children with homework if assignments, textbooks, and other study materials are written in English.

Delgado-Gaitan (2001) substantiates the need to respect and address home culture and language in her case study of 20 families in Carpinteria, California. She found that the parents had a high level of frustration regarding the schooling of their children. However, because they were uneducated themselves, they felt isolated and unable to connect with a system of different cultural and social values. A small group of parents began to meet in order to support one another and share information about education and the educational process. Through these meetings, the parents learned how to become advocates for their children and empowered through a sense of
community. Eventually, they organized the Comite de Padres Latinos (COPLA) designed to train themselves about language, literacy, and parent resources. They also became agents of change within the school district by requesting more printed materials from the school be provided in Spanish to allow families to help their children with school work and be more involved in school activities. Delgado-Gaitan (2001) reports that this process not only enabled parents to be more involved in their children’s education, but it also facilitated the acculturation process into the schooling system and other facets of our social structure.

The academic success of language minority students clearly involves additional strategies. Thomas and Collier (1997) collected data on 42,000 language minority students to identify key predictors in their achievement. Cognitively complex academic instruction in students’ first language and second language is essential according to these researchers. Additionally, they state the importance of addressing sociocultural needs such as interaction with English-speaking peers, using approaches that emphasize and value prior knowledge, respecting the home language and culture, and presenting bilingual education programs to all students.

This is further supported by a project funded by the U.S. Department of Education (Center for Applied Linguistics, 2006). The National Literacy Panel for Language Minority Children and Youth was appointed to review the research surrounding literacy development of English language learners. According to their report, differences due to children’s second language proficiency warrant the recommendation that educators adjust instruction to better accommodate language minority students. Furthermore, second-language learners who are literate in their
native language are more likely to be successful in English literacy skills (August & Shanahan, 2006). Language minority children instructed in both their native language and English outperform language minority students who receive instruction only in English.

Barriers to Latino Parental Involvement

Different perceptions regarding the roles of teachers and parents in the education of children are not the only obstacles that impact student achievement. Tinkler (2002) explored the literature and compiled a comprehensive review of the barriers that interfere with collaborative efforts to educate children. He found that the major barriers within minority populations could be classified into five categories: school environment, culture and language, parents’ educational level, psychological aspects, and logistical factors. While these categories are separate and distinct, the implications of each are interwoven into a complex cause and effect chain. Culture and language have been addressed in the previous section. The other four areas will be discussed here.

School Environment

School environments have a huge impact on how involved parents are with educational activities (Chavkin, 1993; Hyslop, 2000; Inger, 1992; Scribner et al., 1999). Due to their lack of education, information, or social status, many Latino parents feel anxious and unwelcome when they enter the school. Scribner et al. (1999) found that an unwelcome school environment often prevents parents from getting involved. Chavkin and Williams (1987) investigated teacher training programs with regard to establishing and maintaining effective teacher-parent relationships. They
found very few teacher training institutions required course work in developing effective teacher-parent relations. If the school district does not provide in-service training on promoting healthy home-school partnerships, teachers are forced to learn on their own possibly mishandling exchanges and interactions with parents along the way. Furthermore, teachers with little or no training in working with parents either avoid dealing with Latino parents or push too aggressively to involve them in ways that parents are not comfortable (Moles, 1993; Shannon, 1996). Some Latino parents resent the hypocrisy of school personnel who hold parents responsible for not being involved and then are unwilling to accept the ways in which parents are comfortable participating (Shannon, 1996).

Parents’ Educational Level

Schools may be unrealistic in their expectations of parents to help children at home if the parents themselves do not have the skills necessary to do so. Many Latino parents have a limited formal education, especially in the case of migrant families with high mobility (Lopez, 2001; Sosa, 1997; Trumbull et al., 2001). Parents who lack the language and mathematics skills or the content knowledge in science, health, history, or government cannot assist their children with homework, studying for tests, or completing projects. Many times, older siblings are given the additional responsibility of helping younger siblings with homework (Sosa, 1997). The older children have little time or energy in completing their own homework. This inability to contribute tends to perpetuate feelings of low self-esteem and intimidation in dealing with school personnel.
Psychological Issues

Psychological issues include the effects of efficacy (Shumow & Lomax, 2001), feelings of helplessness due to low socioeconomic status (Ogbu, XXXX) and low self-esteem due to little or no education themselves (Hyslop, 2001). Many parents are intimidated about schools due to their own poor experiences or lack of experiences. Furthermore, Latino parents often consider contact initiated by the school as a potential negative communication rather than a positive report or an update on student progress. Often, when parents do visit the school, it is only when the teacher has bad news about academic performance or behavior. It is not uncommon for these parents to leave the school feeling upset or frustrated. In recent studies by Hughes et al. (1999) and Kelty (1997), low self-esteem in parents is another reason why school experiences of their children causes them anxiety. Many Latino parents view their own lack of education and inability to speak English as an indication that they have nothing to offer. They feel powerless to contribute to their children’s education and confused about what the school expects from their children. Parents’ uncertainty about how to help their children often results in inaction.

Logistical Issues

Many parents, regardless of their ethnic background would like to be more involved in their children’s education, but various logistical issues prevent them from doing so. Lack of time, childcare issues, transportation, and scheduling are all issues that prevent many parents from participating in school or home activities related to education. Many parents work long hours, have multiple jobs or responsibilities, and are simply overwhelmed with their day-to-day tasks (Delgado-Gaitan, 2001; Sosa,
1997; Scribner et al., 1999). Stay-at-home mothers who might be likely candidates for volunteering at school since they do not have the schedule constraints of a job often have younger children and cannot afford childcare to leave them for the day. Unless public transportation is an option, families with only one car may not have other transportation to the school. Transportation and childcare issues are not only a problem for volunteer opportunities during the day, but also prevent many from attending evening functions such as conferences and parent meetings.

Improving Parental Involvement

Though there are barriers that parents and school face in their efforts to improve parental involvement, there are also strategies that schools can employ to overcome these barriers. The literature includes many research strategies that identify suggestions for parents and schools. In a study conducted by Pena (2000), parents indicated that they needed to feel more welcome when they were in the school. They also felt that school personnel needs to recognize that even when parents are not present in the school, they care about the education of their children and are often involved at home. Four main suggestions for schools emerged from these conversations with parents identifying ways in which to encourage parental participation. These are: (a) maintaining open and effective communication, (b) establishing a warm school environment, (c) employing parent coordinators or liaisons, (d) acknowledging and respecting cultural and ethnic values. The literature confirms these strategies as effective methods to increase parental involvement and improve the climate and environment in our learning communities (Chavkin & Gonzalez, 1995;
Cotton & Wikelund, 1989; Chrispeels & Rivero, 2000; Pena, 2000; Scribner et al., 1999; Starkey & Klein, 2000).

Open Effective Communication

According to Chavkin and Gonzalez (1995), communication should be the major focus of parental involvement efforts. Considering the obvious language gap, parents who are not English speakers often decline from involving themselves in school activities because they cannot understand what is being said. Without employing interpreters, parent-teacher conferences, school meetings, and other school events are meaningless to non-English speaking parents. Minimally, providing bilingual written communications, making home visits and telephone calls will open doors for communicating student progress and educational objectives and well as give parents the opportunities to express concerns, ask questions or provide additional information about the family which may be insightful to the teacher.

Communication also includes providing information and instructional materials with may help them help their children. For example, Cotton and Savard (1982) found an increase in parental involvement when parents received instructional resources and training for helping children learn in the home. Schools can also communicate the importance of reading to children with regard to language acquisition skills. Studies show that one of the most important aspects in early childhood language development is the amount of talk and reading between children and their caregivers (Barton, 2004; Hart & Risley, 1995; Raikes et al., 2004).

Finally, schools should communicate the idea to parents that their involvement and support does impact student achievement (Chrispeels & Rivero, 2000). Parents do
not have to have extended periods of free time or be highly educated to be involved in their children’s education. They should however, be aware of standards, academic goals, and policies as well as strategies that they can employ at home to enable children to be more successful.

Warm School Environment

Schools that make a special effort to greet parents in a warm, friendly manner when they enter the building are much more likely to enlist the support of parents (Scribner et al., 1999). Many parents, especially minority parents, low-income or immigrant parents feel intimidated when they enter the school due to negative experiences with their own education. School personnel can make parents feel like a part of the school community by taking time to make small talk, calling them by name, and sharing both personal and academic information about their child. Scribner et al. refer to this kind of environment as a “warm, people-oriented professional atmosphere that is comprised of a community of learners.”

Parent Liaisons as Cultural Brokers

Part of creating a warm environment and establishing and maintaining open lines of communication with minority populations may involve the use of a parent coordinator or liaison. Chrispeels and Rivero (2000) maintain that in order to communicate effectively with diverse populations, one must understand cultural differences within those populations. These researchers studied the impact of a program called PIQE (Parent Institute for Quality Education). Their research revealed three findings that explain why some parents are motivated to be involved in their children’s education and others are not. Parental involvement depends on (a) how
parents define their roles, responsibilities, and place in education, (b) how parents perceive the strength and value of their own capabilities to help their children, and (c) how parents perceive the school invitations and opportunities to be involved.

Many Latino parents feel that it is not their place to question school personnel and that visiting the school uninvited is a sign of disrespect for the teachers and the jobs they are doing. Chrispeels and Rivero (2000) examined the use of “cultural brokers” (Delgado-Gaitan, 1996) through the PIQE instructors and found that Latino parents’ perceptions of their role in their children’s education and the efficacy to help their children are not fixed. Cultural brokers were especially helpful in providing parents with the skills and information to assist their children at home and helping parents acculturate into the school system as contributing members of the learning community. Chrispeels and Rivero summarize their findings by defining a conceptual framework of variables that motivate Latino parents to be more effectively involved in their children’s education. These variables include actual and perceived school invitations and opportunities to be involved, parent’s sense of their role in education, parents’ knowledge and skills as to how to assist their children, parents’ concepts of parenting styles, and parents’ aspirations for their children’s overall well-being.

Delgado-Gaitan (1996) maintains that in order to bridge the contrasting cultures and enable Latino students to be academically successful, we must learn to use “cultural brokers.” Cultural brokers are useful mediators between the majority and the minority cultures. Not only do they help students understand, adapt, and achieve in the academic majority culture, but they help parents in the acculturation process and enable them to become educational advocates for their children. As our schools become more
and more culturally diverse, many feel that teachers, too, must be equipped to serve as cultural brokers (Chisholm, 1994; Gay, 1993; Gentemann & Whitehead, 1983). Until teachers can connect with students and parents culturally, they will fail to gain insight into the cultural assumptions underlying beliefs and behaviors that contribute or detract from student achievement (Cardelle-Elawar, 1992). Cultural brokers must be acculturated in the mainstream culture and the ethnic cultures. They have the responsibility of disseminating information to parents and students as well as promoting cultural awareness within school experiences. In doing so, they are able to connect the culture of the students, the culture of the parents and the culture of the school (Harris, 1999).

Respect for Cultural Values and Familial Needs

Teachers and administrators have significant impact on parental involvement. (Chavkin & Gonzalez, 1995; Chrispeels & Rivero, 2000; Delgado-Gaitan, 2001; Scribner et al. 1999; Sosa, 1997; Trumbull et al, 2001) Trumbull et al. point to the importance of schools developing an understanding of the cultural values that children bring with them. Schools that are able to acknowledge home culture and incorporate it into school curriculum and events help students develop pride in their identity and make parents feel like they have valuable contributions to make (Delgado-Gaitan, 2001). When working with immigrant families, it is essential that the school personnel recognize the resiliency and resourcefulness they bring to the learning community. Furthermore, encouraging the extended family to participate helps working parents stay involved and allows the children to develop a sense of school-family connectedness. (Scribner et al., 1999; Sosa, 1997). Respecting family needs is also important.
Childcare, transportation needs, scheduling conflicts, and long work days are all barriers that can be overcome if schools address them appropriately and thoughtfully.

Summary

The focus of this chapter was on the achievement and the factors that contribute to the gap such as parental involvement, poverty, out-of-school learning experiences, language and sociocultural factors. The literature presents various viewpoints on the impact that different types of parental involvement have on student achievement, different definitions for parental involvement, as well as the various sociocultural factors related to the achievement gap specifically for Latino students. Barriers to reducing the Latino achievement gap were explored in the contexts of school environment, parents’ educational level, psychological issues, and logistical issues. The chapter concluded by presenting some strategies from the literature for improving parental involvement.
CHAPTER III

METHODOLOGY

This study examined the effectiveness of the Bridges program when used during the academic school year to improve student achievement. The literature suggests that parental involvement and student motivation have a significant impact on student academic success. Furthermore, the literature indicates that the Hispanic parent population is often ill-equipped to assist their children with academic activities at home due to obstacles such as the language barrier or lack of access to educational materials. This chapter describes the procedures of the research study used to assess student achievement, student motivation, and parental involvement as related to the implementation of the Bridges program. The research design, research hypotheses, sample population, measurement instruments, data collection procedures, and data analyses that were used in this study are outlined in Chapter III.

Description of the Program

The objective of this study was to identify the achievement gains, if gains exist, of students who participate in the Bridges program during the academic school year. Because the researcher needed to have a working relationship with the participating school personnel, it was important to find a school that had an interest in the Hispanic achievement gap and in increasing parental involvement. A charter school with a high
Hispanic population in New Mexico was selected as the study site. Through an initial interview with the principal, it was clear that school personnel were committed to finding effective ways to improve home-school communication and fostering parental participation. The school received grade-level workbooks at no cost in exchange for participation in the study, access to student records, and assistance with distribution of materials. The experimental group was comprised a self-selected group of students who volunteered to participate in the Bridges program and a comparison group comprised of the students who chose not to participate. Fall and spring test scores on the New Mexico Standards-Based Assessment were used as pretest and posttest reading and math scores. The New Mexico Standards-Based Assessment is the state criterion-referenced test measuring reading, writing, mathematics and science developed to measure the New Mexico Standards and Benchmarks that educators and the public determined are important for students to know and be able to do. Fall and spring test scores on the DIBELS test (Dynamic Indicators of Basic Early Literacy Skills) were used as pretest and posttest reading scores for students in Grades 1 and 2. DIBELS tests are standardized individually administered measures of early literacy development designed to measure fluency and monitor the development of pre-reading and early reading skills. Scores from the Oral Reading Fluency test (ORF) and the Phoneme Segmentation Fluency test (PSF) were collected for students in grades one and two. Pretest and posttest scores were analyzed to determine if achievement gains were significantly greater in the Bridges group as compared to the control group. Additionally, student motivation and parental involvement were examined in the Bridges group before and after the program to determine if the Bridges program
enhances these important components of student success. (See operational definitions for parental involvement and student motivation on in Chapter I for more information.)

Research Design

This investigation was a mixed methods study. According to Creswell, Clark, Gutmann, and Hanson (2003), mixed methods studies involve

the collection or analysis of both qualitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research. (p. 212)

According to experts in the area of statistical analysis (Freund, 1988; Lomax, 2001; Newman & Benz, 1996; Ridenour & Newman, 2005), not all studies that utilize both quantitative and qualitative techniques are alike. Using Ridenour and Newman’s (2005) classification system, this study is categorized on the qualitative-quantitative interactive continuum as a mixed methods design. Ridenour and Newman maintain that by using this type of mixed methods procedure, the researcher relies on a continuum that can be predominantly qualitative or predominantly quantitative, but the research design is driven by the research question and purpose. They claim:

Identifying the research question and the research purpose (or, because there may be more than just one – the “questions” and the “purposes”) is accomplished through an iterative process. The researcher moves from the question to the purpose, and back through both, iteratively, to exhaust the possible questions and possible purposes. Once all purposes have been identified and all research questions linked to those purposes have been articulated, the researcher designs the strategies for collecting and analyzing evidence. That evidence must be defended as consistent with the purposes and questions. That evidence may rest epistemologically within the qualitative and/or the quantitative paradigm. The focus of the researchers is predominantly on the research purpose and the research question. (p. 22)
Because all of the independent variables in this study were not under the control of the researcher, the quantitative procedures were ex post facto. According to Kerlinger (1973; 2002):

Ex post facto research is systematic inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulable. Inferences about relations among variables are made, without direct intervention, from concomitant variation of independent and dependent variables. (p.379)

Ex post facto designs cannot show causation. Only true experimental design can show causation. Therefore, no causal statement can be made about ex post facto research (Freund, 1988; Lomax, 2001; Newman, Newman, Brown, & McNeely, 2006). While ex post facto research studies contain three major weaknesses (the inability to manipulate independent variables, the inability to randomize, and the risk of improper interpretation) which result in low internal validity, tests of relationships can be very valuable to researchers. According to Newman, Newman, Brown and McNeely (2006): “One of the most effective ways of using ex post facto research is to help identify a small set of variables from a large set of variables related to the dependent variable for future experimental manipulation” (p. 124).

Data Collection Procedures

The hypotheses were derived based on past and present theoretical and empirical data as well as specific research hypotheses. Pre-program questionnaires were distributed to parents and students in the Bridges group regarding their attitudes about school, satisfaction level of the program, parental involvement, time spent on the program, etc. (see Appendix B). Additional demographic information was collected
from the questionnaires such as sex, family structure, grade level, age, school setting, primary language spoken at home, access to computer and Internet, etc. The comparison and Bridges groups were classified both by ethnicity and grade level. Fall achievement test scores for the entire student population were collected as the pretest scores. Spring scores were used as posttest scores. Students in the Bridges group were provided with the Bridges books to be used at home with parents from December 2005 through February 2006. At the end of the 3-month period, a final letter was sent home to parents with a post-program questionnaire. The letter communicated the request for the parents/students to return the books and post-program questionnaires to the school office (see Appendix C). Drop-boxes were placed in the principal’s office in which to collect the post-program questionnaires and books. The achievement results from the pretest-posttest design were compared between the Bridges group and the comparison group. Scores from the questionnaires were calculated and covaried with the achievement gains to further analyze parental participation and student motivation.

Statistical Treatment

This study used both descriptive and inferential statistical techniques. Multiple linear regression was used as the primary statistical technique because it provides flexibility and allows the researcher to answer multiple specific research questions. (Freund, 1988; Kachigan, 1991; Lomax, 2001; McNeil, Newman, & Kelly, 1996) With multiple linear regression, one can write models that reflect specific research questions being asked. Multiple linear regression also allows one to test relationships between categorical variables, categorical and continuous variables, and continuous
variables. In this case, multiple linear regression was used to determine the statistical significance of the dependent variables as related to the independent categorical variables. Full and restricted models were tested to determine if each specific research hypothesis was accepted or rejected.

The F test was used to test the statistical significance of the proposed relationships in general and specific hypotheses. The F test is very robust and will allow the researcher to determine if the $R^2$ of the full and restricted models were significantly different at an alpha level of .1. The alpha level was set at .1 because this was an exploratory analysis and an alpha level of .1 decreases the likelihood of making a Type II error. This gives the researcher 90% confidence that any significant difference that is found is not due to chance. Two-tailed tests of significance were used to test the relationships of the variables where the direction of the correlation is uncertain.

The F-test was also used to determine if there was a significant difference between the comparison group and Bridges group, from pretest to posttest (Cohen & Cohen, 1983; Freund, 1988; Kachigan, 1991; Lomax, 2001; McNeil, Newman, & Kelly, 1996). A test of interaction from a two-way analysis of variance (see Figure 1) was used to determine if there were significant differences in gains between the Bridges group and the comparison group. The main effects were Bridges or comparison groups and if the specific score came from the pretest or the post-test. This allowed the researcher to determine if there was a significant interaction that would be indicative of a significant difference in gains between the two groups independent of
initial pre-test score differences. Memberships indicate students whose scores come from:

- BrPre = Bridges pretest group
- BrPost = Bridges post-test group
- CPre = Control pretest group
- CPost = Control post-test group

<table>
<thead>
<tr>
<th></th>
<th>Pre-test scores</th>
<th>Post-test scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridges</td>
<td>BrPre</td>
<td>BrPost</td>
</tr>
<tr>
<td>Control</td>
<td>CPre</td>
<td>CPost</td>
</tr>
</tbody>
</table>

*Figure 1.* Test of interaction from a two-way analysis of variance

Principal components analysis was used to determine the underlying constructs being measured by the variables addressing student motivation and parental involvement. (Cohen, 1988; Cohen & Cohen, 1983; Kachigan, 1991; McNeil et al., 1996;) These constructs were used to measure student motivation and parental involvement, and were examined and tested for reliability using Cronbach’s Alpha (Cohen, 1988; Nunnaly, 1994) The items tested in the pre-parental involvement scores (see variable list page 81) produced a reliability measure of .864. PREPIF1 produced a
reliability score of .840, and PREPIF2 produced a reliability score of .625. The items
tested in the post-parental involvement scores produced a reliability measure of .847.
The items tested in the post student motivation scores produced a reliability measure of
.810. POSTSMF1 produced a reliability measure of .783, and POSTSMF2 produced a
reliability measure of .823.

Principal component analysis was used to reduce the number of variables in
two of the general hypotheses. Principal components were determined using ones in
the diagonal. Varimax orthogonal rotation was applied with an Eigenvalue of 1 as a
cut-off. Scree plots were also used to help determine when to stop factoring (Bobko,
2001; Cohen, 1988; Cohen & Cohen, 1983; Kachigan, 1991; Nunnally, 1994; Stevens,
2001).

A power analysis was conducted to determine the probability of making a Type
II error. A Type II error occurs when the researcher fails to detect a difference when a
difference exists (McNeil, Newman, & Kelly, 1996). Power is equal to one minus the
probability of making a Type II error. Cohen (1988) identifies three arbitrarily defined
effect sizes: large (> .35), medium (.15-.35) and small (< .15). This study utilized this
representation to interpret effect. Analysis determined the estimated power was
approximately .88 for the Bridges group at an N size of 73, when alpha = .1, and a
medium effect size. The estimated power was approximately .99 for the school
population at an N size of 334, when alpha = .1 with a medium effect size.

Qualitative Data Collection and Analysis

Additionally, the research included qualitative analysis. Telephone interviews
were conducted with the parents who agreed to participate in the interviews to gain
additional insight and understanding of the data. The questions were generated based upon the purpose of the Bridges program, the components of the materials, and the desire to extrapolate specific information about parental attitudes that may enrich the quantitative data. Committee members assisted the researcher in composing a list of questions that might provide a rich description of the manner in which the program was implemented in the home as well as the obstacles and/or benefits that parents found in using the program. The questions that were asked of participants in the study include:

1. How did you use the materials?
2. Did you include additional learning opportunities because of the Bridges program (i.e., trips to the zoo, museum, student directed projects, etc.)?
3. What parts of the program did you find useful?
4. What parts of the program were the most difficult to implement?
5. Why did you choose to participate in the Bridges program?
6. Did you find the program easy to implement and use in the home environment?
7. Did find it enjoyable to work with your child on the program?
8. Did your participation in the program change your opinion of how to assist your child in academic activities? If yes, how so?

This type of information was valuable in discerning how the materials were used, how conducive the home environment is with regards to promoting educational activities in out-of-school time during the academic school year, and the ability level of the parents to appropriately implement the program in the home. The data gathered from the telephone interviews and the additional comments parents included on the
open comment section of the post-program questionnaire were analyzed inductively (Patton, 1990). The data was sorted so that the researcher could categorize them according to emerging themes such as lack of time, respect for teachers’ opinions and suggestions, value of education, willingness to help students with academic work, and ability to assist children with academic tasks, etc. The categories were expanded and the data reorganized until all of the substantive comments were grouped appropriately. Those comments that contained general information were simply tallied. While this was not a complete qualitative study which follows a series of stages as outlined in the constant comparison method (Patton, 1990; Lincoln & Guba, 1985) The inductive analysis added heuristic value to the investigation by providing insight regarding how or why the program worked or didn’t work at home. This personal perspective helped to inform the quantitative analysis, adding richness to the data and allowing for greater insight with regard to examining the data.

Diagram of the Research Design

The research design used in this study included three phases as identified in the General Hypotheses. The research designs for the three phases of the study are shown below.

Phase I (Participants Include All Students) – There is a significant difference between treatment 1 (RB) and treatment 2 (C) in predicting overall academic gains.

\[
O_{(1-5)} \otimes (RB) \quad O_{(7-11)} \\
O_{(1-5)} \otimes (C) \quad O_{(7-11)}
\]
Phase II (Participants include only students in the Bridges group) – For students in the Bridges group, there are significant gains among ethnic groups in predicting overall academic gains.

\[
\begin{align*}
O_{(1-5)} & \otimes (1) O_{(7-11)} \\
O_{(1-5)} & \otimes (2) O_{(7-11)}
\end{align*}
\]

Phase III (Participants include only students in the Bridges group) – For students in the Bridges group, there is a relationship between the student motivation and parental involvement in predicting overall academic gains.

\[
\begin{align*}
\otimes (4) & \ O_{(7-11)} \\
\otimes (5) & \ O_{(7-11)}
\end{align*}
\]

Attribute variables:

\begin{align*}
\otimes (RB) & = \text{all students who will receive the Bridges program (attribute variable)} \\
\otimes (C) & = \text{all students who do not participate in the Bridges program (attribute variable)} \\
\otimes 1 & = \text{Hispanic children using Bridges program} \\
\otimes 2 & = \text{White children using Bridges program} \\
(\text{Other children are described as nonwhite and non-Hispanic English speaking children.}) \\
\otimes 4 & = \text{Student motivation (attribute variable – see SMF1 and SMF2)} \\
\otimes 5 & = \text{Parental involvement (attribute variable – see PIF1 and PIF2)}
\end{align*}
Derivation of General Research Hypothesis

Based upon a review of the literature, a wide achievement gap exists for minority students in both reading and math (Chavkin, 1993; Education Trust, 2003; Educational Commission of the States, 2004; National Assessment of Educational Progress, 1999; National Governor’s Association; 2005; Pew Hispanic Center, 2004; U.S. Department of Education). While numerous studies have been conducted to explain the racial differences, there is no simple explanation for why Hispanic students consistently achieve below their peers. Rather, a complex combination of cultural, community, and home factors seem to contribute to the achievement gap (Cotton & Wikelund, 1989; Delgado-Gaitan, 2001; EdSource, 2005; Epstein et al, 1996; Goodwin, 2000; Henderson & Berla, 1994; Kober, 2001). As policymakers continue to hold schools accountable for improved achievement in all subgroups of students, school districts across the country are considering a range of strategies, resources and academic support structures for all students not meeting academic standards. Research has identified promising strategies effective in closing the gap among minority students.
including (a) increasing their participation in rigorous challenging coursework, (b) providing opportunities for engaging learning experiences in out-of-school time and (c) strengthening community and parental support and participation (Epstein et al, 1996; Haycock, 2001; Henderson & Berla, 1994; Sosa, 1997; Warren-Sams, 2000).

Therefore, one would expect that providing at-home learning activities which not only reinforce skills but also promote parental involvement, refine parents’ understanding of grade-level expectations of their children, and provide bilingual resources for non-English speaking parents would have a positive effect on reducing the gap.

General and Specific Research Hypotheses

General Hypothesis 1: The Bridges program accounts for a significant amount of unique variance in predicting academic overall gains on standardized tests. (See the explanation on page xx for the use of interaction to test for gains.)

Specific Hypothesis 1.1: The Bridges program accounts for a significant amount of unique variance in predicting academic overall gains in reading on standardized tests.

FM: \[ Y_{POSTRdg} = a_0 + a_1PRERdgBr + a_2POSTRdgBR + a_3PRERdgC + a_4POSTRdgC + E_1 \]

RM: \[ Y_{POSTRdg} = a_0 + a_5PRERdg + a_6POSTRdg + a_7BR + a_8C + E_2 \]

Specific Hypothesis 1.2: The Bridges program accounts for a significant amount of unique variance in predicting academic gains in math on standardized tests.

FM: \[ Y_{POSTMa} = a_0 + a_1PREMaBr + a_2POSTMaBR + a_3PRERdgC + a_4POSTRdgC + E_1 \]
RM: \[ Y_{\text{POST}Ma} = a_0u + a_5\text{PRE}Ma + a_6\text{POST}Ma + a_7\text{BR} + a_8C + E_2 \]

General Hypothesis 2: For students in the Bridges group, there will be a gain between pretest and posttest scores in reading and math at each grade level.

Specific Hypothesis 2.1: For first grade students in the Bridges group, there will be a gain between pretest and posttest reading scores.

FM: \[ Y_{\text{RDG}(gr1)} = a_0u + a_1\text{PRE}(gr1) + a_2\text{POST}(gr1) + E_1 \]
RM: \[ Y_{\text{RDG}(gr1)} = a_0u + E_2 \]

Specific Hypothesis 2.2: For second grade students in the Bridges group, there will be a gain between pretest and posttest reading scores.

FM: \[ Y_{\text{RDG}(gr2)} = a_0u + a_1\text{PRE}(gr2) + a_2\text{POST}(gr2) + E_3 \]
RM: \[ Y_{\text{RDG}(gr2)} = a_0u + E_4 \]

Specific Hypothesis 2.3: For third grade students in the Bridges group, there will be a gain between pretest and posttest reading scores.

FM: \[ Y_{\text{RDG}(gr3)} = a_0u + a_1\text{PRE}(gr3) + a_2\text{POST}(gr3) + E_5 \]
RM: \[ Y_{\text{RDG}(gr3)} = a_0u + E_6 \]

Specific Hypothesis 2.4: For fourth grade students in the Bridges group, there will be a gain between pretest and posttest reading scores.

FM: \[ Y_{\text{RDG}(gr4)} = a_0u + a_1\text{PRE}(gr4) + a_2\text{POST}(gr4) + E_7 \]
RM: \[ Y_{\text{RDG}(gr4)} = a_0u + E_8 \]

Specific Hypothesis 2.5: For fifth grade students in the Bridges group, there will be a gain between pretest and posttest reading scores.

FM: \[ Y_{\text{RDG}(gr5)} = a_0u + a_1\text{PRE}(gr5) + a_2\text{POST}(gr5) + E_9 \]
Specific Hypothesis 2.6: For sixth grade students in the Bridges group, there will be a gain between pretest and posttest reading scores.

FM:  \( Y_{\text{RDG(gr6)}} = a_0u + a_1\text{PRE(gr6)} + a_2\text{POST(gr6)} + E_{11} \)

RM:  \( Y_{\text{RDG(gr6)}} = a_0u + E_{12} \)

Specific Hypothesis 2.7: For first grade students in the Bridges group, there will be a gain between pretest and posttest math scores.

FM:  \( Y_{\text{MATH(gr1)}} = a_0u + a_1\text{PRE(gr1)} + a_2\text{POST(gr1)} + E_{13} \)

RM:  \( Y_{\text{MATH(gr1)}} = a_0u + E_{14} \)

Specific Hypothesis 2.8: For second grade students in the Bridges there will be a gain between pretest and posttest math scores.

FM:  \( Y_{\text{MATH(gr2)}} = a_0u + a_1\text{PRE(gr2)} + a_2\text{POST(gr2)} + E_{15} \)

RM:  \( Y_{\text{MATH(gr2)}} = a_0u + E_{16} \)

Specific Hypothesis 2.9: For third grade students in the Bridges group, there will be a gain between pretest and posttest math scores.

FM:  \( Y_{\text{MATH(gr3)}} = a_0u + a_1\text{PRE(gr3)} + a_2\text{POST(gr3)} + E_{17} \)

RM:  \( Y_{\text{MATH(gr3)}} = a_0u + E_{18} \)

Specific Hypothesis 2.10: For fourth grade students in the Bridges group, there will be a gain between pretest and posttest math scores.

FM:  \( Y_{\text{MATH(gr4)}} = a_0u + a_1\text{PRE(gr4)} + a_2\text{POST(gr4)} + E_{19} \)

RM:  \( Y_{\text{MATH(gr4)}} = a_0u + E_{20} \)
Specific Hypothesis 2.11: For fifth grade students in the Bridges group, there will be a gain between pretest and posttest math scores.

FM: $Y_{MATH(gr5)} = a_0u + a_1PRE(gr5) + a_2POST(gr5) + E_{21}$

RM: $Y_{MATH(gr5)} = a_0u + E_{22}$

Specific Hypothesis 2.12: For sixth grade students in the Bridges group, there will be a gain between pretest and posttest math scores.

FM: $Y_{MATH(gr6)} = a_0u + a_1PRE(gr6) + a_2POST(gr6) + E_{23}$

RM: $Y_{MATH(gr6)} = a_0u + E_{24}$

General Hypothesis 3: Within the Bridges group, Ethnicity accounts for a significant amount of variance in predicting post-test scores independent of pretest scores.

Specific Hypothesis 3.1: Within the Bridges group, Ethnicity accounts for a significant amount of variance in predicting post-test scores in reading independent of pretest scores in reading.

FM: $Y_{POSTRdg} = a_0u + a_1PreRdg + a_2H + a_3W + E_1$

RM: $Y_{POSTRdg} = a_0u + a_7PreRdg + E_2$

Specific Hypothesis 3.2: Within the Bridges group, Ethnicity accounts for a significant amount of variance in predicting post-test scores in math independent of pretest scores in math.

FM: $Y_{POSTMa} = a_0u + a_1PreMa + a_2H + a_3W + E_1$

RM: $Y_{POSTMa} = a_0u + a_7PreMa + E_2$
General Hypothesis 4: For the Bridges group, post motivation components are positively related to achievement gains on standardized tests.

FM: $YGAINS = a_0u + a_1PostSMF1 + a_2PostSMF2 + E_1$

RM: $YGAINS = a_0u + E_2$

Specific Hypothesis 4.1: For the Bridges group, post motivation components are positively related to achievement gains on standardized tests in reading.

FM: $YGAINSRDG = a_0u + a_1PostSMF1 + a_2PostSMF2 + E_1$

RM: $YGAINSRDG = a_0u + E_2$

Specific Hypothesis 4.2: For the Bridges group, post motivation components are positively related to achievement gains on standardized tests in math.

FM: $YGAINSMATH = a_0u + a_1PostSMF1 + a_2PostSMF2 + E_1$

RM: $YGAINSMATH = a_0u + E_2$

General Hypothesis 5: Within the Bridges group, post motivation components account for a significant amount of variance in predicting the completion of Bridges books independent of pre-student motivation scores.

FM: $YBookComp = a_0u + a_1PreSMF1 + a_2PostSMF1 + a_3PostSMF2 + E_1$

RM: $YBookComp = a_0u + a_4PreSMF1 + E_2$

General Hypothesis 6: There is a significant difference between males and females in predicting achievement gains.

FM: $YGAIN = a_0u + a_1sex + E_1$

RM: $YGAIN = a_0u + E_2$
Specific Hypothesis 6.1: For the Bridges group, there is a significant difference between males and females in predicting achievement gains in reading.

FM: \( Y_{\text{GAINRDG}} = a_0 + a_1 \text{sex} + E_1 \)

RM: \( Y_{\text{GAINRDG}} = a_0 + E_2 \)

Specific Hypothesis 6.2: For the Bridges group, there is a significant difference between males and females in predicting achievement gains in math.

FM: \( Y_{\text{GAINMATH}} = a_0 + a_1 \text{sex} + E_1 \)

RM: \( Y_{\text{GAINMATH}} = a_0 + E_2 \)

General Hypothesis 7: For the Bridges group, parental involvement factors account for a significant amount of unique variance in predicting achievement gains.

FM: \( Y_{\text{POST}} = a_0 + a_1 \text{POSTPIF1} + a_2 \text{POSTPIF2} + a_3 \text{PRE} + E_1 \)

RM: \( Y_{\text{POST}} = a_0 + a_4 \text{PRE} + E_2 \)

Specific Hypothesis 7.1: For the Bridges group, parental involvement factors account for a significant amount of unique variance in predicting achievement gains in reading.

FM: \( Y_{\text{POSTRDG}} = a_0 + a_1 \text{POSTPIF1} + a_2 \text{POSTPIF2} + a_3 \text{PRERDG} + E_1 \)

RM: \( Y_{\text{POSTRDG}} = a_0 + a_4 \text{PRERDG} + E_2 \)

Specific Hypothesis 7.2: For the Bridges group, parental involvement factors account for a significant amount of unique variance in predicting achievement gains in math.

FM: \( Y_{\text{POSTMATH}} = a_0 + a_1 \text{POSTPIF1} + a_2 \text{POSTPIF2} + a_3 \text{PREMATH} + E_1 \)
RM: $Y_{POSTMATH} = a_0u + a_4P_{PREMATH} + E_2$

Variable List

The variables in this study were coded in the following manner:

**Independent variables**

**Student population**

- $RB$ – Students in the Bridges program if $RB = 1$; if other $= 0$
- $C$ – Students not participating in the Bridges program if $C = 1$; if other $= 0$

**Ethnicity (within Bridges group)**

- Hispanic students in the Bridges program if Hispanic $= 1$; if other $= 0$
- White students in the Bridges program if White $= 1$; if other $= 0$
- Other students in the Bridges program if other $= 1$; if other $= 0$

**SEX**

if male $= 1$; if female $= 0$

**PreSM** – Pre Bridges Student motivation

- $1 =$ strongly agree, $4 =$ strongly disagree
- $PreSM24$ – Child enjoys school
- $PreSM25$ – Child enjoys reading for pleasure
- $PreSM26$ – Child enjoys educational activities outside of school
- $PreSM27$ – Child does homework with little prompting
- $PreSM28$ – Child enjoys writing stories for pleasure
- $PreSM29$ – Child doesn’t like to be absent from school

**PreSMF1** – Academic Enjoyment (Principal component analysis of items $PreSM24$, $PreSM25$, $PreSM26$, $PreSM27$, $PreSM28$, $PreSM29$)

**PostSM** – Post Bridges Student motivation

- $1 =$ none/rarely, $5 =$ all/frequently
- $PostSM8$ – How much of the workbook did the child complete
- $PostSM9$ – How frequently did the child work on Bridges
- $PostSM10$ – How much did the child enjoy working on Bridges
- $PostSM11$ – How much did the child enjoy using the reading list/reading log
- $PostSM12$ – How much did the child enjoy using the flashcards
- $PostSM13$ – How much did the child enjoy using the contract
- $PostSM14$ – How much help did the child need to complete the activities
- $PostSM15$ – How often did the child complete activities in a quiet area

**PostSMF1** – Enjoyed Bridges Materials (Principal component analysis of items $PostSM11$, $PostSM12$, $PostSM13$)

**PostSMF2** – Works on Bridges Without Distraction (Principal component analysis of items $PostSM10$, $PostSM15$)

**PrePI** – Pre Bridges Parental involvement

- $1 =$ strongly agree, $4 =$ strongly disagree
- $PrePI17$ – Could help child with schoolwork with access to better materials

73
PrePI18 – Child visits a public library regularly
PrePI19 – Child has access to reading materials at home
PrePI20 – Have a good understanding of the level of academic work expected of child
PrePI21 – Feel equipped to help child with homework
PrePI22 – Feel equipped to help child with basic skills
PrePI23 – Purchase instructional materials to help child at home
PrePI30 – Feel that teachers have a good understanding of child’s strengths and weaknesses
PrePI31 – Contact with school officials has been positive
PrePI32 – Feel comfortable contacting child’s teachers with questions/concerns
PrePI33 – Attend events at school and meet with child’s teacher regularly
PrePI34 – Too little time at the end of the day to help with homework

PostPI – Post Parental Involvement 1 = strongly agree, 4 = strongly disagree
PostPI16 – Bridges made it easy for me to work with child
PostPI17 – Enjoyed working on Bridges with child
PostPI18 – Have a better understanding of child’s academic expectations after Bridges
PostPI19 – Have a good understanding of child’s level of work after Bridges
PostPI20 – Child is better prepared for school after Bridges
PostPI21 – Reading list/log helped select appropriate books to read
PostPI22 – Enjoyed using flashcards with child
PostPI23 – Visited public library more frequently after Bridges
PostPI24 – Feel better prepared to help child with homework after Bridges
PrePIF1 – Principal component analysis of items PrePI30, PrePI31, PrePI32
PrePIF2 – Principal component analysis of items PrePI33, PrePI34
PostPIF1 – Principal component analysis of items PostPI16, PostPI17, PostPI18
PostPIF2 – Principal component analysis of items PostPI19, PostPI20, PostPI21

BookComp = Book completion 0 = none completed
1 = less than 1/3 completed
2 = 1/3 – 2/3 completed
3 = more than 2/3 completed

GL – Grade level Scale from 1 to 6

Ethnicity
H – Hispanic students if H = 1; if other = 0
W – White students if W = 1; if other = 0
O – Other students if O = 1; if other = 0

PRERDG – Fall reading scores (New Mexico Standards-Based Assessment or DIBELS)
PREMA – Fall math scores (New Mexico Standards-Based Assessment or DIBELS)
POSTRDG – Spring reading scores (New Mexico Standards-Based Assessment or DIBELS)
POSTMA – Spring math scores (New Mexico Standards-Based Assessment or DIBELS)
RACH – Reading achievement reading posttest - pretest
MACH – Math achievement math posttest - pretest
GAINS – Achievement gains Posttest – pretest scores

PRE = Fall – Fall scores on standardized test (New Mexico Standards-Based Assessment for reading and math scores or DIBELS for reading scores at grades 1-2)
POST = Spring – Spring scores on standardized test (New Mexico Standards-Based Assessment for reading and math scores or DIBELS for reading scores at grades 1-2)

Sample of the Population

Students in the study are first grade, second grade, third grade, fourth grade, fifth grade, and sixth grade students attending a charter school in Santa Fe, New Mexico. Students and their parents were self-selected, however, all parents in the school community had the opportunity to obtain the materials free of charge and participate in the program. Factors such as parental involvement and student motivation were determined by parent questionnaires and telephone interviews. In exchange for the Bridges materials provided at no cost, the principal granted permission to participate in the study allowing access to student testing records. Student records were analyzed and classified as Bridges participants or non-Bridges participants. Students were also classified according to grade level and sex. Within the Bridges group, students were classified according to ethnicity. Initially, three classification groups were formed: Hispanic, White, and other. However, since only three students comprised the other group, that group was dropped. The subjects were ultimately classified as Hispanic and White.
Participants

This study included students from a charter school in Santa Fe, New Mexico. The entire student population was given opportunity to participate, however the students who used the Bridges materials were self-selected. The total enrollment of the school is 432 students. Sixty-eight percent of the students are Hispanic, 28% of the students are White, and 4% are classified as Asian, American Indian, or Black. Sixty-seven percent of the total school population is in the free/reduced lunch program. When the Bridges program was introduced, participants were given the books in exchange for a signed consent form and a completed pre-program questionnaire. One hundred fifty participants volunteered and provided the necessary documentation to receive the Bridges materials. However, only 73 students provided complete data sets by returning the book and the post-program questionnaire. This is a return rate of 48.6%. Within the Bridges group, 42% of the participants were males and 58% of the participants were females. Sixty-two percent of the students are Hispanic, 34% are White, and 4% are classified as other. The primary language spoken in the home was classified as English, Spanish, or both. Within the Brides group, 63% reported English, 32% reported Spanish, and 5% indicated that both English and Spanish were spoken in the home. Complete data for the control group were gathered for 261 students. Over half (51.7%) of the control group are males, and 48.3% of the control group are females. (See Tables 1-3 for the complete descriptive data of the subjects.)

Instrument

A comprehensive search of the literature was conducted to determine if instruments that measure both parental involvement and student motivation in an
elementary student population currently exist. Keywords such as student motivation, parents or parental involvement, student achievement, achievement, elementary grades, and surveys or questionnaires were used to search ProQuest Dissertations and Theses: A&I databases. PsychINFO (1967-present) and ERIC were also searched using the terms surveys and questionnaires, student motivation, parental involvement or parents. Several studies were found to measure student motivation in the upper middle grades and high school grades such as a qualitative study conducted in a metropolitan St. Louis County high school (Beatty, 1999). Beatty used interviews and surveys to capture sophomore and junior class students’ beliefs about student motivational influences. Another study conducted by Gonzalez (2005) in a southeast Texas school used self-report surveys to investigate the relations among parenting beliefs, parenting practices and student motivation. The study was limited to fourth and fifth grades students and their parents and focused on parenting styles and students motivational beliefs and attitudes including three goal orientations and self-efficacy. After further review of the Gonzalez study, it was determined that neither survey was appropriate for this study. Additionally, the researcher could find no instruments that measured student motivation in the elementary grades. One reason for this might be that it is difficult for students in the primary grades to articulate their own motivation in the form of written surveys or questionnaires. Further, parental involvement and student motivation, while correlated, measure information from two distinct populations, parents and students, and would, therefore, require two separate and distinct surveys.

Due to the nature of this study and the interest in obtaining data regarding student motivation, parental involvement, and the perceptions parents and students had
regarding the Bridges program, it was necessary to construct a pre-program and post-
program questionnaire (see Appendix B). With input from committee members, the
researcher generated a list of questions that could provide valuable insight regarding
parents’ perceptions of education, their involvement with their children’s school-
related functions and relationships with school personnel, and their ability to assist
their children with academic tasks. The pre-program questionnaire consisted of 42
questions that asked for general demographic information (child’s age, ethnicity,
contact information, home language, etc.) and information about the environmental
factors in the home such as family structure, number of siblings, computer and internet
access, etc. The pre-program questionnaire also contained questions designed to
ascertain the types of academic resources available in the home, student motivation, the
level of communication parents have with school personnel, and their perceptions of
education. The post-program questionnaire consisted of 33 questions designed to
identify the effects the Bridges program had on student motivation, parental
involvement in the at-home program, and parents’ perceptions of the usefulness of the
Bridges program in general. Parents were also invited to make any additional
comments they had about the Bridges program. These questionnaires were constructed
using the information obtained from the literature regarding parents’ perceptions of
education, attitudes toward participation in school-related events, willingness to
communicate with school personnel, and willingness and ability to assist their children
with homework. Because the researcher wanted to identify the specific aspects of the
Bridges materials that might have an impact on student motivation and parental
involvement, the pre-program questionnaire and the post-program questionnaire
contained different questions. For example, if the responses from the post-program questionnaire demonstrated that parents found the reading list valuable and visited a public library more often because they had a developmentally appropriate reading list, it would be logical to assume that children might engage in more pleasure reading. These kinds of questions could not be asked on the pre-program questionnaire since the parents and students had not yet been exposed to the Bridges program.

**Parental Involvement**

Parental involvement was measured using items from both the pre-program questionnaire and the post-program questionnaire. The items were designed to examine parents’ perceptions as to the extent of their involvement they have in the academic lives of their children. Items related to parental involvement on the pre-program questionnaire were analyzed by finding principal components and two underlying constructs were identified. Principal component 1 (PREPIF1) consisted of item PrePI30, PrePI31, and PrePI32 and identified the extent to which parents have positive interactions with school personnel. Principal component 2 (PREPIF2) consisted of items PrePI33 and PrePI34 and identified the extent to which parents support the academic activities of their children.

Items related to parental involvement on the post-program questionnaire were analyzed by finding principal components and two underlying constructs were identified. Principal component 1 (POSTPIF1 = enjoyed using Bridges with children) consisted of items PostPI16, PostPI17, and PostPI18 and identified the extent to which parents enjoyed using Bridges with their children. Principal component 2 (POSTPIF2 = found Bridges to be a helpful resource) consisted of items PostPI19, PostPI20,
PostPI21 and Post PI24 identified parents’ perceptions of the effects of Bridges related to the extent that Bridges enabled them to participate in the academic lives of their children (i.e., helping with homework, understanding academic concepts, supporting out-of-school reading, etc.).

**Student Motivation**

Student motivation was measured using items from both the pre-program questionnaire and the post-program questionnaire. The items were designed to examine student motivation in terms of how much children enjoy attending school, academic activities outside of school (i.e., reading and writing for pleasure, etc.), and doing homework without prompting from parents. Items on the pre-program questionnaire related to student motivation were analyzed by finding principal components, and one underlying construct was identified as academic enjoyment. That principal component (PreSMF1 = academic enjoyment) consisted of items PreSM24, PreSM25, PreSM26, PreSM27, PreSM28, and PreSM29. Items on the post-program questionnaire related to student motivation were also analyzed by finding principal components, and two underlying constructs were identified. Principal component 1 (POSTSMF1 = enjoys using Bridges), including PostSM10 and PostSM15, measured the extent to which students enjoyed the Bridges materials. Principal component 2 (POSTSMF2 = works without distraction) used items PostSM11, PostSM12, and PostSM13 to measure the extent to which students used the components of Bridges materials (i.e., book list, contract, flashcards, etc.).

Not all of the items on the pre- and post-program questionnaires were used in this study. Items were selected for this study that specifically related to the ideas
identified by the general research hypotheses and produced satisfactory internal consistency reliabilities above .70. Cronbach’s Alpha was used to determine reliability estimates on these variables. The pre-parental involvement items had an overall reliability score of .864, the post-parental involvement items had an overall reliability score of .847, and the post student motivation items had an overall reliability score of .810 which are listed in Table 1. (See reliability estimates in the Statistical Treatment section.)

Table 1
Chronbach’s Alpha Reliability Estimates

<table>
<thead>
<tr>
<th>Category</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Parental Involvement Items</td>
<td>.864</td>
</tr>
<tr>
<td>Pre-Parental Involvement Principal Component 1</td>
<td>.840</td>
</tr>
<tr>
<td>Pre-Parental Involvement Principal Component 2</td>
<td>.625</td>
</tr>
<tr>
<td>Post Parental Involvement Items</td>
<td>.847</td>
</tr>
<tr>
<td>Post Student Motivation Items</td>
<td>.810</td>
</tr>
<tr>
<td>Post Student Motivation Principal Component 1</td>
<td>.783</td>
</tr>
<tr>
<td>Post Student Motivation Principal Component 2</td>
<td>.823</td>
</tr>
</tbody>
</table>

Data Collection

The researcher worked closely with the school personnel to distribute informational letters explaining the program and Bridges materials. The principal and other school personnel served as cultural brokers to communicate the program, expectations, and help distribute materials to the participants. A letter was sent home with students explaining the Bridges program, and parents were invited to participate in
the program (see Appendix C, Parent Letter 1). The researcher and the principal selected a day in which school was not in session, but teachers and parents at the school for parent-teacher conferences. The researcher was present that day to distribute materials, assist parents in completing the consent forms and pre-program questionnaires, as well as to answer any questions they might have about the program. Additional materials, consent forms, and pre-program questions were available in the school office for any parent who wanted to participate, but did not attend parent-teacher conference day at the school. A final letter was sent home to parents at the end of the three-month period requesting the return of the books and the post-program questionnaire (see Appendices B and C, Parent Letter 3 and Post-program Parent Questionnaire). The researcher provided an incentive (science kit) to students who returned the Bridges books and post-program parent questionnaire. Those students not participating in the program made up the comparison group. Permission to gather data from testing records for the student population was granted by the school principal. Test scores were collected from the school administrator for all children, those in the Bridges program and those who are not in the Bridges program. Additional data was collected from telephone interviews with parents (see Appendix D).

Students’ commitment to the program was determined by the amount of the workbook that was completed by the child as well as the parents’ perceptions of student motivation as indicated on the post-program questionnaire. The workbook contains three sections. Students who completed between two and three sections of the workbook received a high student commitment score (3). Students who completed between one and two sections received a medium student commitment score (2).
Students who completed less than one section of the book received a low commitment score (1). Parental involvement was measured by factor analyzing items in the Parental Involvement portion of the post- and pre-program questionnaires. Achievement gains in reading and math were computed by calculating the difference between pretest scores and posttest scores.

Limitations

Although the research hypotheses are specific and the design allows the researcher to determine whether relationships exist between specific variables, the data collected does pose some limitations. Ex post facto research poses limitations because causal relationships cannot be inferred. The independent variables are not under the control of the researcher in this study. Additionally, the sample population in this study was representative of students enrolled in a school that was willing to participate in the Bridges program, thus the sampling is quasi-random. Furthermore, a major limitation of this study is that the subjects were self-selected. The researcher cannot assume there is any difference between the groups due only to the treatment since the subjects in the treatment group may be more motivated to improve academic performance. Additionally, while student motivation was one focus of this study, the student commitment scores were determined based upon amount of the workbook that was completed as well as the parents’ perceptions of students’ commitment to the program. Parents’ responses on the pre- and post-program questionnaire were used to determine student motivation.

Finally, another important consideration is the illiteracy rate of the parents. It is unknown in this study how many parents cannot read in English or Spanish which
would certainly impact the value of a parent resource. Additionally, while parents have indicated the primary language spoken at home, this does not take into account the time spent with family members (i.e., grandparents, aunts, etc.) who speak only Spanish. For single or working parents who rely on family members to help care for their children on a regular basis, it may not be accurate to characterize the primary language as that spoken in the home, especially if the child-care providers speak only Spanish.

**Summary**

Chapter III includes discussions of the research design used in this study. By its nature, ex post facto research is initiated after the variable of interest has occurred or is the type of variable that cannot be manipulated (i.e., age, race, socioeconomic status, etc.). For this reason, the research design presented here can only demonstrate relationships, not causation.

Parent and teacher questionnaires were utilized in this study along with the Bridges program student materials. After students completed the Bridges program, pre and post-questionnaire information were analyzed along with student demographic information to find out if a relationship exists between the Bridges program accessible during the school year, parental involvement, student motivation, sex, grade level, and student achievement, specifically reading and math achievement. Multiple linear regression was used to determine statistical significance in specific research questions. Because this study sought to determine effectiveness of Bridges as used in a manner other than it was originally intended, the study was classified as exploratory analysis.
CHAPTER IV

RESULTS OF THE STUDY

Results of the research are presented in this chapter. The chapter is organized into three sections: the demographic descriptive statistics, the results of the research hypotheses, and the qualitative findings. The demographic information describes the subjects involved in this study. Information regarding sex, ethnicity, primary language spoken in the home, and a comparison of academic achievement between the two groups is provided. The results of the research hypotheses are also presented. Multiple linear regression equations and the findings of 7 general hypotheses and 22 specific hypotheses. The qualitative information was collected from four telephone interviews with parents and additional comments on post-program questionnaires. Three major themes emerged which were identified by the frequency of the times the topics were mentioned in interviews or included in additional questionnaire comments.

Demographic Information

Demographic information from the Bridges group was obtained from the questionnaires that the participants completed prior to and at the end of the program entitled Pre-program Questionnaire and Post-program Parent Questionnaire. A total of 150 Pre-program questionnaires were collected from parents who volunteered their
children to participate in the program. Of those who initially agreed to participate, a
total of 73 complete data sets were collected.

Within the Bridges group, 42% of the participants were males and 58% of the
participants were females. 62% students were Hispanic, 34% were white, and 4% were
classified as other. The primary language spoken in the home was classified as
English, Spanish, or both. Within the Brides group, 63% reported English, 32%
reported Spanish, and 5% indicated that both English and Spanish were spoken in the
home. Complete data for the comparison group were gathered for 261 students. Over
half (51.7%) of the comparison group are males, and 48.3% of the comparison group
are females.

Fall scores on the New Mexico Standards-Based Assessment and DIBELS tests
(for reading in Grades 1-2) were used as pretest scores. Spring scores on the same
standardized tests were used as posttest scores. Participants in both groups were very
similar in academic scores on both the fall tests (pre-tests) and spring tests (posttests).
Mean scores and standard deviations in fall reading and math scores, spring reading
and math scores, as well as reading and math gains scores reflected that the two groups
were not significantly different before and after the Bridges program was implemented
(see Table 4).
Table 2

Number of Subjects in Bridges and Comparison Groups

<table>
<thead>
<tr>
<th></th>
<th>Bridges Group</th>
<th>Comparison Group</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>31 (42%)</td>
<td>135 (52%)</td>
<td>166</td>
</tr>
<tr>
<td>Females</td>
<td>42 (58%)</td>
<td>126 (48%)</td>
<td>168</td>
</tr>
<tr>
<td>Grade 1</td>
<td>17 (23%)</td>
<td>56 (21%)</td>
<td>73</td>
</tr>
<tr>
<td>Grade 2</td>
<td>10 (14%)</td>
<td>54 (21%)</td>
<td>64</td>
</tr>
<tr>
<td>Grade 3</td>
<td>14 (19%)</td>
<td>47 (18%)</td>
<td>61</td>
</tr>
<tr>
<td>Grade 4</td>
<td>12 (16%)</td>
<td>23 (9%)</td>
<td>35</td>
</tr>
<tr>
<td>Grade 5</td>
<td>13 (18%)</td>
<td>41 (16%)</td>
<td>54</td>
</tr>
<tr>
<td>Grade 6</td>
<td>2 (3%)</td>
<td>40 (15%)</td>
<td>42</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
<td>261</td>
<td>334</td>
</tr>
</tbody>
</table>

Table 3

Descriptive information of Bridges Group

<table>
<thead>
<tr>
<th></th>
<th>Bridges Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic</td>
<td>45 (62%)</td>
</tr>
<tr>
<td>White</td>
<td>25 (34%)</td>
</tr>
<tr>
<td>Other</td>
<td>3 (4%)</td>
</tr>
<tr>
<td>Primary Home Language - English</td>
<td>46 (63%)</td>
</tr>
<tr>
<td>Primary Home Language – Spanish</td>
<td>23 (32%)</td>
</tr>
<tr>
<td>Primary Home Language – Both</td>
<td>4 (5%)</td>
</tr>
<tr>
<td>Home computer access</td>
<td>49 (67%)</td>
</tr>
<tr>
<td>Internet access</td>
<td>36 (49%)</td>
</tr>
</tbody>
</table>
Table 4

PreTest and Posttest Summary of Bridges Group and Comparison Group

<table>
<thead>
<tr>
<th></th>
<th>Bridges Group</th>
<th></th>
<th>Comparison Group</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>Fall Reading</td>
<td>73</td>
<td>136.06</td>
<td>82.2</td>
<td>261</td>
</tr>
<tr>
<td>Fall Math</td>
<td>45</td>
<td>203.4</td>
<td>21.3</td>
<td>151</td>
</tr>
<tr>
<td>Spring Reading</td>
<td>73</td>
<td>150.7</td>
<td>73.3</td>
<td>262</td>
</tr>
<tr>
<td>Spring Math</td>
<td>45</td>
<td>213.4</td>
<td>21.2</td>
<td>151</td>
</tr>
<tr>
<td>Reading Gain</td>
<td>73</td>
<td>14.6</td>
<td>16.2</td>
<td>261</td>
</tr>
<tr>
<td>Math Gain</td>
<td>45</td>
<td>10.0</td>
<td>8.25</td>
<td>151</td>
</tr>
</tbody>
</table>

Note: Reading scores for students in grades 1-2 were collected from the PSF or ORF DIBLES Tests. All other scores were collected from New Mexico Standards-Based Assessment Test.

Results of Testing the Research Hypothesis

In this study, there were 7 general hypotheses and 22 specific hypotheses. The format suggested by Newman, Klein, Weis, and Benz (1979) was used to present the statistical findings of the specific research hypotheses. The tabled results for each specific research hypothesis include the following information:

1. A statement of the specific research hypothesis.
2. Full and restricted models used to test each hypothesis.
3. Squared multiple correlation coefficient ($R^2$) – the amount of variance accounted for by the model.
4. Degrees of freedom numerator and degrees of freedom denominator.

5. F ratio

6. $R^2$ change – the amount R changed between the full and restricted model

7. Significance or nonsignificance

General Hypothesis 1: The Bridges program accounts for a significant amount of unique variance in predicting academic overall gains on standardized tests independent of pretest scores.

Specific Hypothesis 1.1: The Bridges program accounts for a significant amount of unique variance in predicting academic overall gains in reading on standardized tests independent of pretest reading scores.

FM: $Y_{POSTRdg} = a_{0u} + a_{1PRERdgBr} + a_{2POSTRdgBR} + a_{3PRERdgC} + a_{4POSTRdgC} + E_1$

RM: $Y_{POSTRdg} = a_{0u} + a_{5PRERdg} + a_{6POSTRdg} + a_{7BR} + a_{8C} + E_2$

Specific Hypothesis 1.2: The Bridges program accounts for a significant amount of unique variance in predicting academic gains in reading on standardized tests independent of pretest math scores.

FM: $Y_{POSTMa} = a_{0u} + a_{1PREMaBr} + a_{2POSTMaBR} + a_{3PREMaC} + a_{4POSTMaC} + E_1$

RM: $Y_{POSTMa} = a_{0u} + a_{5PREMa} + a_{6POSTMa} + a_{7BR} + a_{8C} + E_2$

Specific Hypothesis 1.1 states that the Bridges program accounts for a significant amount of variance in predicting achievement gains in reading as determined by an increase in spring reading test scores, or post-test scores, over fall
test scores, or pretest scores. This hypothesis was found to be not significant. The calculated F score was 1.967 with df1 equal to 1 and df2 equal to 664. This produced a p value equal to .451 and an R change (R² change) equal to .000 as illustrated in Table 5.

Specific Hypothesis 1.2 stated that the Bridges program accounts for a significant amount of variance in predicting achievement gains in math as determined by an increase in spring math test scores, or post-test scores, over fall math test scores, or pretest scores. This hypothesis was found to be not significant. The calculated F score was 6.355 with df₁ equal to 1 and df₂ equal to 388. This produced a p value equal to .209 and an R change (R² change) equal to .002 as illustrated in Table 6.

Table 5
Results for Specific Hypothesis 1.1

<table>
<thead>
<tr>
<th>Model</th>
<th>R²f</th>
<th>R²r</th>
<th>R² Change</th>
<th>F</th>
<th>df1/df2</th>
<th>p</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SH1.1: Bridges accounts for a significant amount of unique variance in predicting academic gains in reading on standardized tests independent of pretest reading scores.</td>
<td>.009</td>
<td>1.967</td>
<td>1/664</td>
<td>.451</td>
<td>NS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM: YPOSTRdg = 137.845(U) - 1.777(PRERdgBr) + 12.908(POSTRdgBR) + a₃PRERdgC + a₄POSTRdgC + E₁</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RM: YPOSTRdg = 136.763(U) + 13.296(POSTRdg) -7.535(C) + E₂</td>
<td>.009</td>
<td>1.967</td>
<td>1/664</td>
<td>.451</td>
<td>NS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Alpha is <1, Significant = S, Not Significant = NS; R²f = R² of full model; R²r = R² of restricted model; R² Change = the amount R² changed between the full and restricted model.
Table 6

Results for Specific Hypothesis 1.2

<table>
<thead>
<tr>
<th>Model</th>
<th>R²f</th>
<th>R²r</th>
<th>R² Change</th>
<th>F</th>
<th>df1/df2</th>
<th>p</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SH1.2: Bridges accounts for a significant amount of unique variance in predicting academic gains in math on standardized tests independent of pretest math scores.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM: YPOSTMa = 206.970(U) + 6.497(POSTMaBR) + a3PRERdgC + a4POSTRdgC + E1</td>
<td>.047</td>
<td>.045</td>
<td>.002</td>
<td>6.355</td>
<td>1/388</td>
<td>.209</td>
<td>NS</td>
</tr>
<tr>
<td>RM: YPOSTMa = 204.789(U) + a5PREMa + 7.311(POSTMa) + a7BR –3.527(C) + E2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:* Alpha is < .1, Significant = S, Not Significant = NS; R²f = R² of full model; R²r = R² of restricted model; R² Change = the amount R² changed between the full and restricted model.

General Hypothesis 2: For students in the Bridges group, there will be a gain between pretest and posttest scores in reading and math at each grade level.

Specific Hypothesis 2.1: For first grade students in the Bridges group, there will be a gain between pretest and posttest reading scores.

FM: Y RDG(gr1) = a0u + a1PRE(gr1) + a2POST(gr1) + E1

RM: Y RDG(gr1) = a0u + E2

Specific Hypothesis 2.2: For second grade students in the Bridges group, there will be a gain between pretest and posttest reading scores.

FM: Y RDG(gr2) = a0u + a1PRE(gr2) + a2POST(gr2) + E3

91
Specific Hypothesis 2.3: For third grade students in the Bridges group, there will be a gain between pretest and posttest reading scores.

FM: \( Y_{RDG(gr3)} = \beta_0 + \beta_1 PRE_{gr3} + \beta_2 POST_{gr3} + \epsilon_5 \)

RM: \( Y_{RDG(gr3)} = \beta_0 + \epsilon_6 \)

Specific Hypothesis 2.4: For fourth grade students in the Bridges group, there will be a gain between pretest and posttest reading scores.

FM: \( Y_{RDG(gr4)} = \beta_0 + \beta_1 PRE_{gr4} + \beta_2 POST_{gr4} + \epsilon_7 \)

RM: \( Y_{RDG(gr4)} = \beta_0 + \epsilon_8 \)

Specific Hypothesis 2.5: For fifth grade students in the Bridges group, there will be a gain between pretest and posttest reading scores.

FM: \( Y_{RDG(gr5)} = \beta_0 + \beta_1 PRE_{gr5} + \beta_2 POST_{gr5} + \epsilon_9 \)

RM: \( Y_{RDG(gr5)} = \beta_0 + \epsilon_{10} \)

Specific Hypothesis 2.6: For sixth grade students in the Bridges group, there will be a gain between pretest and posttest reading scores.

FM: \( Y_{RDG(gr6)} = \beta_0 + \beta_1 PRE_{gr6} + \beta_2 POST_{gr6} + \epsilon_{11} \)

RM: \( Y_{RDG(gr6)} = \beta_0 + \epsilon_{12} \)

Specific Hypothesis 2.7: For first grade students in the Bridges group, there will be a gain between pretest and posttest math scores.

FM: \( Y_{MATH(gr1)} = \beta_0 + \beta_1 PRE_{gr1} + \beta_2 POST_{gr1} + \epsilon_{13} \)

RM: \( Y_{MATH(gr1)} = \beta_0 + \epsilon_{14} \)
Specific Hypothesis 2.8: For second grade students in the Bridges there will be a gain between pretest and posttest math scores.

FM: \[ Y_{\text{MATH(gr2)}} = \beta_0 + \beta_1 \text{PRE(gr2)} + \beta_2 \text{POST(gr2)} + \epsilon_{15} \]

RM: \[ Y_{\text{MATH(gr2)}} = \beta_0 + \epsilon_{16} \]

Specific Hypothesis 2.9: For third grade students in the Bridges group, there will be a gain between pretest and posttest math scores.

FM: \[ Y_{\text{MATH(gr3)}} = \beta_0 + \beta_1 \text{PRE(gr3)} + \beta_2 \text{POST(gr3)} + \epsilon_{17} \]

RM: \[ Y_{\text{MATH(gr3)}} = \beta_0 + \epsilon_{18} \]

Specific Hypothesis 2.10: For fourth grade students in the Bridges group, there will be a gain between pretest and posttest math scores.

FM: \[ Y_{\text{MATH(gr4)}} = \beta_0 + \beta_1 \text{PRE(gr4)} + \beta_2 \text{POST(gr4)} + \epsilon_{19} \]

RM: \[ Y_{\text{MATH(gr4)}} = \beta_0 + \epsilon_{20} \]

Specific Hypothesis 2.11: For fifth grade students in the Bridges group, there will be a gain between pretest and posttest math scores.

FM: \[ Y_{\text{MATH(gr5)}} = \beta_0 + \beta_1 \text{PRE(gr5)} + \beta_2 \text{POST(gr5)} + \epsilon_{21} \]

RM: \[ Y_{\text{MATH(gr5)}} = \beta_0 + \epsilon_{22} \]

Specific Hypothesis 2.12: For sixth grade students in the Bridges group, there will be a gain between pretest and posttest math scores.

FM: \[ Y_{\text{MATH(gr6)}} = \beta_0 + \beta_1 \text{PRE(gr6)} + \beta_2 \text{POST(gr6)} + \epsilon_{23} \]

RM: \[ Y_{\text{MATH(gr6)}} = \beta_0 + \epsilon_{24} \]

Using a nonparametric sign test, the data was analyzed to determine if there was a difference between the pretest and posttest scores for reading and math at each grade.
level for the Bridges group. For both reading and math at all grade levels, gains were in the predicted direction (posttests were higher than pretests). The probability of this occurrence is .016. Therefore the gain was not likely due to chance.

Specific Hypothesis 2.3 (reading at grade 3) indicated significance with an R² of .077 and a p value of .076. Reading scores were not significant at any other grade level. In math, however, significance was found for Specific Hypotheses 2.9, 2.10, and 2.11 at Grades 3, 4, and 5 with R² values of .122, .108, and .104, respectively. The p value at Grade 3 was .034, Grade 4 was .058, and Grade 5 was .054. Complete results for reading and math at all grade levels are listed in Tables 7 and 8.

Table 7

Results for Specific Hypotheses 2.1-2.6

<table>
<thead>
<tr>
<th>Hypotheses and Model</th>
<th>R²</th>
<th>df1/df2</th>
<th>Alpha</th>
<th>F</th>
<th>p</th>
<th>Sign.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Hypotheses 2.1-2.6: For students in the Bridges group, there will be a gain between pretest and posttest scores in reading.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Hypothesis 2.1 - Grade 1 FM: Y RDG(gr1) = 49.243(U) + 23.353(post) + E₁</td>
<td>.035</td>
<td>1/32</td>
<td>.1</td>
<td>1.174</td>
<td>.143</td>
<td>NS</td>
</tr>
<tr>
<td>RM: Y RDG(gr1) = a₀u + E₂</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Hypothesis 2.2 - Grade 2 FM: Y RDG(gr2) = 77.400(U) + 27.900(post) + E₃</td>
<td>.082</td>
<td>1/18</td>
<td>.1</td>
<td>1.617</td>
<td>.110</td>
<td>NS</td>
</tr>
<tr>
<td>RM: Y RDG(gr2) = a₀u + E₄</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Hypothesis 2.3 - Grade 3 FM: Y RDG(gr3) = 188.071(U) + 8.357(post) + E₅</td>
<td>.077</td>
<td>1/26</td>
<td>.1</td>
<td>2.176</td>
<td>.076</td>
<td>S</td>
</tr>
<tr>
<td>RM: Y RDG(gr3) = a₀u + E₆</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(table continues)
### Table 7 (continued)

<table>
<thead>
<tr>
<th>Hypotheses and Model</th>
<th>$R^2$</th>
<th>df1/df2</th>
<th>Alpha</th>
<th>F</th>
<th>p</th>
<th>Sign.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Hypothesis 2.4 - Grade 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM: $Y_{RDG(gr4)} = 206.333(U) + 4.167(post) + E_7$</td>
<td>.022</td>
<td>1/22</td>
<td>.1</td>
<td>.490</td>
<td>.245</td>
<td>NS</td>
</tr>
<tr>
<td>RM: $Y_{RDG(gr4)} = a_0u + E_8$</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Hypothesis 2.5 - Grade 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM: $Y_{RDG(gr5)} = 203.462(U) + 6.077(post) + E_9$</td>
<td>.036</td>
<td>1/24</td>
<td>.1</td>
<td>.901</td>
<td>.176</td>
<td>NS</td>
</tr>
<tr>
<td>RM: $Y_{RDG(gr5)} = a_0u + E_{10}$</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Hypothesis 2.6 - Grade 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM: $Y_{RDG(gr6)} = 210.000(U) + 8.509(post) + E_{11}$</td>
<td>.353</td>
<td>1/2</td>
<td>.1</td>
<td>1.091</td>
<td>.203</td>
<td>NS</td>
</tr>
<tr>
<td>RM: $Y_{RDG(gr6)} = a_0u + E_{12}$</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 8

Results for Specific Hypotheses 2.7 – 2.12

<table>
<thead>
<tr>
<th>Hypotheses and Model</th>
<th>$R^2$</th>
<th>df1/df2</th>
<th>Alpha</th>
<th>F</th>
<th>p</th>
<th>Sign.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Hypotheses 2.7-2.12: For students in the Bridges group, there will be a gain between pretest and posttest scores in math.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Hypothesis 2.7 - Grade 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM: $Y_{MATH(gr1)} = 218.000(U) + 6.50(post) + E_{13}$</td>
<td>.020</td>
<td>1/2</td>
<td>.1</td>
<td>.041</td>
<td>.429</td>
<td>NS</td>
</tr>
<tr>
<td>RM: $Y_{MATH(gr1)} = a_0u + E_{14}$</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Hypothesis 2.8 - Grade 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM: $Y_{MATH(gr2)} = 153.000(U) + 6.50(post) + E_{15}$</td>
<td>.011</td>
<td>1/2</td>
<td>.1</td>
<td>.023</td>
<td>.446</td>
<td>NS</td>
</tr>
<tr>
<td>RM: $Y_{MATH(gr2)} = a_0u + E_{16}$</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*(table continues)*
Table 8 (continued)

<table>
<thead>
<tr>
<th>Hypotheses and Model</th>
<th>$R^2$</th>
<th>df1/df2</th>
<th>Alpha</th>
<th>F</th>
<th>p</th>
<th>Sign.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.9 - Grade 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM: $Y_{\text{MATH(gr3)}} = 195.786(U) + 11.429(\text{post}) + E_{17}$</td>
<td>.122</td>
<td>1/26</td>
<td>.1</td>
<td>3.623</td>
<td>.034</td>
<td>S</td>
</tr>
<tr>
<td>RM: $Y_{\text{MATH(gr3)}} = a_u + E_{18}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.10 - Grade 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM: $Y_{\text{MATH(gr4)}} = 211.333(U) + 8.167(\text{post}) + E_{19}$</td>
<td>.108</td>
<td>1/22</td>
<td>.1</td>
<td>2.662</td>
<td>.058</td>
<td>S</td>
</tr>
<tr>
<td>RM: $Y_{\text{MATH(gr4)}} = a_u + E_{20}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.11 - Grade 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM: $Y_{\text{MATH(gr5)}} = 208.000(U) + 12.077(\text{post}) + E_{21}$</td>
<td>.104</td>
<td>1/24</td>
<td>.1</td>
<td>2.786</td>
<td>.054</td>
<td>S</td>
</tr>
<tr>
<td>RM: $Y_{\text{MATH(gr5)}} = a_u + E_{22}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.12 - Grade 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM: $Y_{\text{MATH(gr6)}} = 215.500(U) + 5.500(\text{post}) + E_{23}$</td>
<td>.041</td>
<td>1/2</td>
<td>.1</td>
<td>.086</td>
<td>.398</td>
<td>NS</td>
</tr>
<tr>
<td>RM: $Y_{\text{MATH(gr6)}} = a_u + E_{24}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

General Hypothesis 3: Within the Bridges group, Ethnicity accounts for a significant amount of variance in predicting post-test scores independent of pretest scores.

Specific Hypothesis 3.1: Within the Bridges group, Ethnicity accounts for a significant amount of variance in predicting post-test scores in reading independent of pretest scores in reading.

FM: $Y_{\text{POSTRdg}} = a_0u + a_1\text{PreRdg} + a_2H + a_3W + E_1$

RM: $Y_{\text{POSTRdg}} = a_0u + a_7\text{PreRdg} + E_2$
Specific Hypothesis 3.2: Within the Bridges group, Ethnicity accounts for a significant amount of variance in predicting post-test scores in math independent of pretest scores in math.

\[ \text{FM: } Y_{\text{POSTMa}} = a_0 + a_1 \text{PreMa} + a_2 H + a_3 W + E_1 \]

\[ \text{RM: } Y_{\text{POSTMa}} = a_0 + a_7 \text{PreMa} + E_2 \]

Specific Hypothesis 3.1 stated that ethnicity accounts for a significant amount of variance in predicting post-test scores in reading independent of pretest scores. This hypothesis was found to be not significant. The calculated F score was 1.811 with df1 equal to 1 and df2 equal to 67. This produced a p value equal to .183 and an R change (R^2 change) equal to .001 as illustrated in Table 9.

Table 9

Results for Specific Hypothesis 3.1

<table>
<thead>
<tr>
<th>Model</th>
<th>R^2f</th>
<th>R^2r</th>
<th>R^2 Change</th>
<th>F</th>
<th>df1/df2</th>
<th>p</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SH3.1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM: Y_{\text{POSTRdg}}= 33.413(U) + .880(PreRdg) - 4.347(H) + a_3 W + E_1</td>
<td>.970</td>
<td></td>
<td>1.811</td>
<td>1/67</td>
<td>.183</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>RM: Y_{\text{POSTRdg}}= 30.526(U) + .881(PreRdg) + E_2</td>
<td>.969</td>
<td></td>
<td></td>
<td></td>
<td>.001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Alpha is <.1, Significant = S, Not Significant = NS; R^2f = R^2 of full model; R^2r = R^2 of restricted model; R^2 Change = the amount R^2 changed between the full and restricted model.
Specific Hypothesis 3.2 stated that ethnicity accounts for a significant amount of variance in predicting post-test scores in math independent of pretest scores. This hypothesis was found to be not significant. The calculated F score was .520 with df1 equal to 1 and df2 equal to 40. This produced a p value equal to .475 and an $R^2$ change equal to .001 as illustrated in Table 10.

Table 10

Results for Specific Hypothesis 3.2

<table>
<thead>
<tr>
<th>Model</th>
<th>$R^2_f$</th>
<th>$R^2_r$</th>
<th>$R^2_{\text{Change}}$</th>
<th>F</th>
<th>df1/df2</th>
<th>$p$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SH3.2:  Within the Bridges group, ethnicity accounts for a significant amount of unique variance in predicting post-test scores on standardized tests in math independent of pre-test scores.</td>
<td>$Y_{POSTMa} = 28.469(U) + .910(\text{PreMa}) + a_2H + 1.873(W) + E_1$</td>
<td>.885</td>
<td>.520</td>
<td>1/40</td>
<td>.183</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>E_1</td>
<td>FM: $Y_{POSTMa} = 26.093(U) + .925(\text{PreMa}) + E_2$</td>
<td>.884</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Alpha is < .1, Significant = S, Not Significant = NS; $R^2_f$ = $R^2$ of full model; $R^2_r$ = $R^2$ of restricted model; $R^2_{\text{Change}}$ = the amount $R^2$ changed between the full and restricted model.

General Hypothesis 4: For the Bridges group, post motivation principal components are positively related to achievement gains on standardized tests.

FM: $YGAINS = a_0u + a_1PostSMF1 + a_2PostSMF2 + E_1$

RM: $YGAINS = a_0u + E_2$
Specific Hypothesis 4.1 For the Bridges group, post motivation principal components are positively related to achievement gains on standardized tests in reading.

FM: \( Y \text{GAINS}_{\text{RDRG}} = a_0u + a_1\text{PostSMF}_1 + a_2\text{PostSMF}_2 + E_1 \)

RM: \( Y \text{GAINS}_{\text{RDRG}} = a_0u + E_2 \)

Specific Hypothesis 4.2 For the Bridges group, post motivation principal components are positively related to achievement gains on standardized tests in math.

FM: \( Y \text{GAINS}_{\text{MATH}} = a_0u + a_1\text{PostSMF}_1 + a_2\text{PostSMF}_2 + E_1 \)

RM: \( Y \text{GAINS}_{\text{MATH}} = a_0u + E_2 \)

General Hypothesis 4 stated that for the Bridges group, post motivation principal components are positively related to achievement gains on standardized tests. In order to test this hypothesis, a principal component analysis was conducted to identify the underlying constructs of the student motivation scores for related questions in the pre- and post-program questionnaire. One underlying construct was found in the pre-student motivation scores (see Table 11). Two underlying constructs were found in the post-student motivation scores (see Table 12). This hypothesis was tested by analyzing the spring standardized test scores in reading and math separately while holding the pretest scores constant in each case. Specific Hypotheses 4.1 and 4.2 illustrate these models.

Specific Hypothesis 4.1 stated that for the Bridges group, post motivation principal components are positively related to achievement gains on standardized tests in reading. This hypothesis was found to be not significant. The calculated F score was
1.505 with \( \text{df}_1 \) equal to 2 and \( \text{df}_2 \) equal to 70. This produced a p value equal to .229 and an \( R \) change (\( R^2 \) change) equal to .041 as illustrated in Table 13.

Table 11

Principal Component Analysis for Pre Student Motivation Scores

<table>
<thead>
<tr>
<th>Variables</th>
<th>PreSMF1 - Academic Enjoyment</th>
</tr>
</thead>
<tbody>
<tr>
<td>PreSM24</td>
<td>.758</td>
</tr>
<tr>
<td>PreSM25</td>
<td>.779</td>
</tr>
<tr>
<td>PreSM26</td>
<td>.651</td>
</tr>
<tr>
<td>PreSM27</td>
<td>.814</td>
</tr>
<tr>
<td>PreSM28</td>
<td>.741</td>
</tr>
<tr>
<td>PreSM29</td>
<td>.705</td>
</tr>
</tbody>
</table>

*Note:* These values are Varimax rotated principal component loadings. See Variable List on pages 71-73 for descriptions of the variables.

Table 12

Principal component analysis for Post Student Motivation Scores

<table>
<thead>
<tr>
<th>Variables</th>
<th>PostSMF1 - enjoyed the Bridges materials</th>
<th>PostSMF2 - works without distraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>PostSM10</td>
<td></td>
<td>.851</td>
</tr>
<tr>
<td>PostSM15</td>
<td></td>
<td>.853</td>
</tr>
<tr>
<td>PostSM11</td>
<td>.755</td>
<td></td>
</tr>
<tr>
<td>PostSM12</td>
<td>.790</td>
<td></td>
</tr>
<tr>
<td>PostSM13</td>
<td>.798</td>
<td></td>
</tr>
</tbody>
</table>

*Note:* These values are Varimax rotated principal component loadings. See Variable List on pages 71-73 for descriptions of the variables.
Table 13

Results for Specific Hypothesis 4.1

<table>
<thead>
<tr>
<th>Model</th>
<th>$R^2_f$</th>
<th>$R^2_r$</th>
<th>$R^2_{\text{Change}}$</th>
<th>F</th>
<th>df1/2</th>
<th>p</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SH4.1 For the Bridges group, post motivation principal components are positively related to achievement gains on standardized tests in reading. FM: $YGAINS\text{RDG} = 13.772(U) + 1.260 \text{ (PostSMF1)} - 1.080\text{(PostSMF2)} + E_1$</td>
<td>.041</td>
<td>1.505</td>
<td>2/70</td>
<td>.229</td>
<td>NS</td>
<td>.041</td>
<td></td>
</tr>
<tr>
<td>RM: $YGAINS\text{RDG} = \text{aou} + E_2$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

Note: Alpha is < .1, Significant = S, Not Significant = NS; $R^2_f = R^2$ of full model; $R^2_r = R^2$ of restricted model; $R^2_{\text{Change}}$ = the amount $R^2$ changed between the full and restricted model.

Specific Hypothesis 4.2 stated that for the Bridges group, post motivation principal components are positively related to achievement gains on standardized tests in math. This hypothesis was found to be not significant. The calculated F score was .077 with df1 equal to 2 and df2 equal to 42. This produced a p value equal to .463 and an R change ($R^2_{\text{change}}$) equal to .004 as illustrated in Table 14.
Table 14

Results for Specific Hypothesis 4.2

<table>
<thead>
<tr>
<th>Model</th>
<th>$R^2_f$</th>
<th>$R^2_r$</th>
<th>$R^2_{\text{Change}}$</th>
<th>F</th>
<th>df1/2</th>
<th>p</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SH4.2</td>
<td>For the Bridges group, post motivation principal components are positively related to achievement gains on standardized tests in math.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM: YGAINSMATH = 8.518(U) + .034(PostSMF1) + .199(PostSMF2) + E1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RM: YGAINSMATH = a0u + E2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Alpha is <.1, Significant = S, Not Significant = NS; $R^2_f = R^2$ of full model; $R^2_r = R^2$ of restricted model; $R^2_{\text{Change}} = \text{the amount } R^2 \text{ changed between the full and restricted model.}

General Hypothesis 5: Within the Bridges group, post motivation principal components account for a significant amount of variance in predicting the completion of Bridges books independent of pre-student motivation scores.

FM: YBookComp = a0u + a1PreSMF1 + a2PostSMF1 + a3PostSMF2 + E1

RM: YbookComp = a0u + a4PreSMF1 + E2

General Hypothesis 5 stated that within the Bridges group, post motivation principal components account for a significant amount of variance in predicting the completion of Bridges books independent of pre-student motivation scores. In order to test this hypothesis, a principal component analysis was conducted to identify the underlying constructs of the student motivation scores for related questions in the pre- and post-program questionnaire. (Item 8 in the post-program questionnaire was not used in the principal component analysis. However, Item 8 and the variable that
measured the amount of the book completed, BookComp, were highly correlated indicating that the participants answered that question honestly and accurately. See Table 18 for this correlation.) One underlying construct was found in the pre-student motivation scores (see Table 16). Two underlying constructs were found in the post-student motivation scores (see Table 17). These principal components were used to test the hypothesis. This hypothesis was found to be significant. The calculated F score was 23.976 with df₁ equal to 2 and df₂ equal to 68. This produced a p value equal to .000 and an R change (R²change) equal to .456 as illustrated in Table 15.

Table 15
Results for General Hypothesis 5

<table>
<thead>
<tr>
<th>Model</th>
<th>R²f</th>
<th>R²r</th>
<th>R² Change</th>
<th>F</th>
<th>df1/df2</th>
<th>p</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GH5: Within the Bridges group, post motivation principal components account for a significant amount of variance in predicting the completion of Bridges books independent of pre-student motivation scores.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM: YBookComp = .75(U) + -.013(PreSMF1) + .141(PostSMF1) + .141(PostSMF2) + E₁</td>
<td>.514</td>
<td></td>
<td>.456</td>
<td>23.976</td>
<td>2/68</td>
<td>.000</td>
<td>S</td>
</tr>
<tr>
<td>RM: YbookComp = 2.257(U) + -.061(PreSMF1) + E₂</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.058</td>
<td></td>
</tr>
</tbody>
</table>

Note. Alpha is <.1, Significant = S, Not Significant = NS; R²f = R² of full model; R²r = R² of restricted model; R² Change = the amount R² changed between the full and restricted model.
Table 16

Principal Component Analysis for Pre Student Motivation Scores

<table>
<thead>
<tr>
<th>Variables</th>
<th>PreSMF1- Academic Enjoyment</th>
</tr>
</thead>
<tbody>
<tr>
<td>PreSM24</td>
<td>.758</td>
</tr>
<tr>
<td>PreSM25</td>
<td>.779</td>
</tr>
<tr>
<td>PreSM26</td>
<td>.651</td>
</tr>
<tr>
<td>PreSM27</td>
<td>.814</td>
</tr>
<tr>
<td>PreSM28</td>
<td>.741</td>
</tr>
<tr>
<td>PreSM29</td>
<td>.705</td>
</tr>
</tbody>
</table>

*Note:* These values are Varimax rotated principal component loadings. See Variable List on pages 71–73 for descriptions of the variables.

Table 17

Principal Component Analysis for Post Student Motivation Scores

<table>
<thead>
<tr>
<th>Variables</th>
<th>PostSMF1 - enjoyed the Bridges materials</th>
<th>PostSMF2 - works without distraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>PostSM10</td>
<td></td>
<td>.881</td>
</tr>
<tr>
<td>PostSM15</td>
<td></td>
<td>.853</td>
</tr>
<tr>
<td>PostSM11</td>
<td>.755</td>
<td></td>
</tr>
<tr>
<td>PostSM12</td>
<td>.790</td>
<td></td>
</tr>
<tr>
<td>PostSM13</td>
<td>.798</td>
<td></td>
</tr>
</tbody>
</table>

*Note:* These values are Varimax rotated principal component loadings. See Variable List on pages 71-73 for descriptions of the variables.
Table 18

Correlation Between the Amount of Book Completed and Parents’ Response on Post-Program Questionnaire Item 8

<table>
<thead>
<tr>
<th>PostSM8 (Post-program questionnaire response to question 8: How much of the book did your child complete?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book Completed – Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td>N</td>
</tr>
</tbody>
</table>

General Hypothesis 6: There is a significant difference between males and females in predicting achievement gains.

Specific Hypothesis 6.1: For the Bridges group, there is a significant difference between males and females in predicting achievement gains.

General Hypothesis 6 stated that there is a significant difference between males and females in predicting achievement gains. A point biserial correlation was conducted analyzing reading gains, math gains and sex. No significant differences were found. For reading the p value was .344 and for math, the p value was .475 (see Table 19).

Specific Hypothesis 6.1 stated that for the Bridges group, there is a significant difference between males and females in predicting achievement gains. A point biserial correlation was conducted analyzing reading gains, math gains, and sex in the
Bridges group only. No significant differences were found. For reading the p value was .980 and for math, the p value was .715 (see Table 20).

Table 19
Point Biserial Correlations Between Sex and Reading and Math Gains for All Subjects

<table>
<thead>
<tr>
<th></th>
<th>Control and Bridges Group</th>
<th>Reading Gains</th>
<th>Math Gains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Pearson Correlation</td>
<td>-.051</td>
<td>-.051</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.344</td>
<td>.475</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>344</td>
<td>196</td>
</tr>
</tbody>
</table>

*Note.* Sex is coded 1 if male and 0 if female. A point Biserial Correlation is conceptually a t-test.

Table 20
Point Biserial Correlations Between Sex and Reading and Math Gains for Bridges Group

<table>
<thead>
<tr>
<th></th>
<th>Bridges Group</th>
<th>Reading Gains</th>
<th>Math Gains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Pearson Correlation</td>
<td>.003</td>
<td>.056</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.980</td>
<td>.715</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>73</td>
<td>45</td>
</tr>
</tbody>
</table>

*Note.* Sex is coded 1 if male and 0 if female. A point Biserial Correlation is conceptually a t-test.
General Hypothesis 7: For the Bridges group, parental involvement accounts for a significant amount of unique variance in predicting achievement gains.

FM: $Y_{POST} = a_0u + a_1POSTPIF1 + a_2POSTPIF2 + a_3PRE + E_1$

RM: $Y_{POST} = a_0u + a_4PRE + E_2$

Specific Hypothesis 7.1: For the Bridges group, parental involvement accounts for a significant amount of unique variance in predicting achievement gains in reading.

FM: $Y_{POSTRDG} = a_0u + a_1POSTPIF1 + a_2POSTPIF2 + a_3PRERDG + E_1$

RM: $Y_{POSTRDG} = a_0u + a_4PRERDG + E_2$

Specific Hypothesis 7.2: For the Bridges group, parental involvement accounts for a significant amount of unique variance in predicting achievement gains in math.

FM: $Y_{POSTMATH} = a_0u + a_1POSTPIF1 + a_2POSTPIF2 + a_3PREMATH + E_1$

RM: $Y_{POSTMATH} = a_0u + a_4PREMATH + E_2$

General Hypothesis 7 stated that for the Bridges group, parental involvement accounts for a significant amount of unique variance in predicting achievement gains. In order to test this hypothesis, a principal component analysis was conducted to identify the underlying constructs of the parental involvement scores for related questions in the post-program questionnaire. Two underlying constructs (enjoyed using Bridges with children and found Bridges to be a helpful resource) were found in the post-parental involvement scores (see Table 21). This hypothesis was tested by using principal component analysis in order to analyze the fall standardized test scores in reading and math separately. Specific Hypotheses 7.1 and 7.2 illustrate these models.
Specific Hypothesis 7.1 stated that for the Bridges group, parental involvement accounts for a significant amount of unique variance in predicting achievement gains in reading. This hypothesis was found to be not significant. The calculated F score was .746 with df₁ equal to 2 and df₂ equal to 64. (see Table 22).

Table 21

Principal Component Analysis for Post Parental Involvement Scores

<table>
<thead>
<tr>
<th>Variables</th>
<th>PostPIF1 - enjoyed using Bridges with children</th>
<th>PostPIF2 - found Bridges to be a helpful resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>PostPI16</td>
<td>.745</td>
<td></td>
</tr>
<tr>
<td>PostPI17</td>
<td>.800</td>
<td></td>
</tr>
<tr>
<td>PostPI18</td>
<td>.720</td>
<td></td>
</tr>
<tr>
<td>PostPI19</td>
<td></td>
<td>.696</td>
</tr>
<tr>
<td>PostPI20</td>
<td></td>
<td>.781</td>
</tr>
<tr>
<td>PostPI21</td>
<td></td>
<td>.892</td>
</tr>
</tbody>
</table>

Note: These values are Varimax rotated principal component loadings. See Variable List on pages 71-73 for descriptions of the variables.

Table 22

Results for Specific Hypotheses 7.1

<table>
<thead>
<tr>
<th>Model and Hypothesis</th>
<th>R²f</th>
<th>R²r</th>
<th>R² Change</th>
<th>F</th>
<th>df1/2</th>
<th>p</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SH7.1 For the Bridges group, parental involvement accounts for a significant amount of unique variance in predicting achievement gains in reading.</td>
<td>.379</td>
<td>.746</td>
<td>2.64</td>
<td>.239</td>
<td>NS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FM: YPOSTRDG = 25.243(U) + 1.311(POSTPIF1) + .054(POSTPIF2) + .874(PRERDG) + E₁
RM: YPOSTRDG = 30.856(U) + .880(PRERDG) + E₂

108
Specific Hypothesis 7.2 stated that for the Bridges group, parental involvement accounts for a significant amount of unique variance in predicting achievement gains in math. This hypothesis was found to be not significant. The calculated F score was 81.938 with df₁ equal to 2 and df₂ equal to 38. This produced a p value equal to .272 and an R change (R² change) equal to .004 (see Table 23).

Table 23

Results for Specific Hypotheses 7.2

<table>
<thead>
<tr>
<th>Model and Hypotheses</th>
<th>R²f</th>
<th>R²r</th>
<th>R²_change</th>
<th>F</th>
<th>df1/df2</th>
<th>p</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SH7.2 For the Bridges group, parental involvement accounts for a significant amount of unique variance in predicting achievement gains in math.</td>
<td></td>
<td></td>
<td></td>
<td>.619</td>
<td>2/38</td>
<td>.272</td>
<td>NS</td>
</tr>
<tr>
<td>FM: POSTMATH = 27.575(U) + .931(POSTPIF1) + - .872 (POSTPIF2) + - .911(PREMATH) + E₁</td>
<td></td>
<td></td>
<td>.004</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RM: YPOSTMATH = 27.285(U) + .914(PREMATH) + E₂</td>
<td></td>
<td></td>
<td>.862</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Alpha is <.1, Significant = S, Not Significant = NS; R²f = R² of full model; R²r = R² of restricted model; R²_change = the amount R² changed between the full and restricted model.

Qualitative Analysis

The study also included qualitative information gathered from telephone interviews and additional comments on post-program questionnaires. The post-program questionnaire included a place for parents to indicate their willingness to participate in a telephone interview and their telephone number. Of the completed post-program questionnaires, 24 parents noted that they would be willing to participate
in post-program telephone interviews and provided contact information. The researcher attempted to reach all 24 parents who provided contact information. Several phone numbers provided had been disconnected, many calls were unanswered, and of the voicemail messages that were left, only one call was returned. Ultimately, only four parents could be reached. The researcher conducted four telephone interviews with parents that participated in the Bridges program and additional comments were collected from 22 post-program questionnaires. The researcher spoke with four mothers who agreed to answer additional questions about the Bridges program and their perceptions of their children’s motivation to complete the program.

The descriptive data gathered from each of the mothers was very different even though they gave similar responses. Three of the women are Latino, two of whom are single parents, and the fourth woman is married to a Latino, however, English was the primary language spoken in the home. All four mothers indicated that they chose to participate in the program because they felt their children would benefit from additional practice at home or because their child’s teacher suggested that the child would benefit from the program. Interestingly, all four women had very different perspectives, yet three main themes emerged from the telephone conversations. These themes are: (a) Time, (b) Prioritization of Teacher-assigned Tasks, and (c) Value and Respect for Teacher Expertise.

All four mothers indicated that time is an issue demonstrated by comments such as “after the homework was completed there really wasn’t time for other work,” and “materials would be more helpful over the summer when the schedules weren’t so busy.” Additionally, there was an overlap between the issue of time and regular
Parents really prioritized “regular” schoolwork as demonstrated by comments like “the teacher’s work came first,” “My children know that they have to finish their homework before they can play or do anything else after school,” and “Whatever the teacher wants has to come first.” Even though homework seemed to be highly related to the issue of time, these comments were separated into two themes because many of the comments related to homework indicated that parents were very conscientious about teachers’ expectations for homework. Despite the busy after-school schedules and time constraints, parents communicated a high priority for making sure their children were prepared for class daily.

Also, these parents held teacher recommendations and suggestions to participate in the program in very high regard. Several parents indicated that they really hadn’t considered participating in the program until the teacher recommended it. Comments such as “My son’s teacher said that Bridges would be good for him,” and “I was at the school the day the materials were handed out for my son’s conference, and his teacher recommended that I consider using the program with him” were coded in the category of value and respect for teacher expertise. They seemed very involved in knowing the academic expectations of their children at school. These three main themes, time, prioritization of teacher assigned tasks, and value and respect for teacher expertise, are examined further in the following section.

Time

Rosa is a Latino mother of three children, two of whom are school-age. She indicated that she is very involved with her children’s education, and she works only part time so that she can support their academic endeavors. She admitted that the
materials made it easy to work with the children because so much information was in both Spanish and English. Rosa insisted that she would use the materials again, but felt that they would be more helpful over the summer when the children’s schedules were not so busy.

 Hughes: How did you use the materials?

 Rosa: The children usually do their homework at the kitchen table while I’m preparing dinner. It was hard to find extra time in the evenings. Nicholas has more homework than Marissa, so he didn’t want to work on the workbook very much. Marissa liked to do it while her brother was doing his homework.

 Hughes: Would you use the books again?

 Rosa: It would be better to use the books in the summer when the children don’t have all their regular schoolwork. I think Marissa would really enjoy working together on this again.

 When asked if her children’s participation in the program changed her opinion of how to assist them in academic activities, she responded:

 Change my opinion of how to help? No, but I think the program made me realize how important it is to take the time just sit with them and work with them. My daughter more than my son. She really liked the time that we spent together on the book. She liked being able to show me what she could do, and I think it made her feel like she was like her brother. I really like the books, but there just wasn’t enough time during the week after all of the homework.

 Another mother, Jane, felt that the Bridges program was difficult for her to maintain with her children during the school year. Even with her mother’s help, she said she struggled to fit everything in.
Hughes: How did you use the materials?

Jane: I tried to have a schedule like the one (contract) in the book, but it was too hard to fit everything in. I’m a single mother and my mother helps me with the children, so she helped them sometimes when they would go to her house after school. But the rule was that the teacher’s work came first. If there was time after that, they worked in the Bridges books.

Hughes: So the lack of time was the biggest obstacle?

Jane: Yes, I liked the books and so did the children, but it was difficult to work on them regularly during the school year. Even with my mother’s help, it is difficult to fit everything in now, without adding one more thing. I really think we would enjoy working on the books more on the weekends or during the summer.”

She did say that she felt she and her children would be able to enjoy working on the materials together on the weekends or during the summer. Jane added that she felt the Bridges could really help her as well. “As the children get older and their work gets harder, it gets harder for me to help them. The Spanish instructions and glossary made it easier. It would be good for me to be able to help them better.”

Susan also indicated that time was an issue. She and her husband have two children in school. Both parents work, but both find time to help the children with schoolwork. Susan is White and her husband is Latino, and while the primary language spoken in the home is English, all of the father’s extended family speaks Spanish. Susan indicated that the books were used as an “extra activity” that both
children seemed to enjoy. However, as in the case with the other parents interviewed, time was a factor. Susan said that she and her husband feel it is very important for the children to be involved in a variety of activities. Both children are involved in extra-curricular activities, and homework is prioritized after dinner.

Hughes: How did you implement the program?

Susan: Neither of the kids finished the books but they worked on them periodically. They worked on them when they could, but sometimes there just wasn’t time. My husband and I think it is very important that the children are involved in many different activities. Both of the children are involved in extra-curriculars and homework comes first after dinner. By that time, the children have had a full day and they have little energy for extra homework.

Hughes: So time was a real obstacle in completing the program?

Susan: Yes. We help our kids with regular homework until it is done. Sometimes that means they don’t go to bed until 9:30 or 10:00 at night. There is only so much time in the day.

Susan reported that when the children did have time to work with the materials, the flashcards were useful for her son, and her daughter used the book list to select free reading materials.

Miranda indicated that she tried to implement the program with her struggling third grader, but he got frustrated with Bridges on top of his assigned school work.

Miranda: My son struggles with schoolwork and I thought that Bridges would be a good way for him to get caught up. But he was frustrated by more homework.
His regular homework is a struggle and I make him sit at the kitchen table and work on it. His younger brother doesn’t have homework so he is usually playing when Jacob is doing homework.

Hughes: Did you modify the program so that Jacob might not be so frustrated?

Miranda: …I encouraged him to do the book with his grandmother. He goes to his grandmother’s house on the weekends when I have to work.

Hughes: Did that work better?

Miranda: He seemed to enjoy working on the book with his grandmother. They weren’t so pressed for time with all of his other homework so they could do a little each day on the weekends.

Additional comments included on the post-program questionnaire regarding the lack of time to engage in “extra academic work” are:

“"My child did not complete the book before the deadline, but she really enjoyed working on it. I feel it is a good tool for students and would be more effective in the summer.”"

“"Very sorry for not following through with completing the program. Classroom homework, extra curricular activities and parent schedules conflicted with our participation in the program.”"

“I’m very involved with her teacher and knowing her reading level at school enabled me to help her select appropriate books, etc. Her current teacher and other work at home seem to have her well-prepared in all subjects. The assignments in the book seemed to easy. But it would be good to have a book like this, more challenging, over the summer instead of using it during the busy school year.”

“Great book, great idea, but too busy with sports and homework during the year – better for summer break.”
“Thank you for the opportunity to participate. My son benefited from the book and I liked using it with him. It was hard to work on it every night but we worked on it when we could and we liked to use the contract to keep track.”

“Thank you for letting my children into the program. It was too hard to fit in with all of the other things we have to do, but I am saving the books for the summer. We will work on them then.”

“Too many after-school activities. Not enough time, but a good idea for summer vacation.”

_Prioritization of Teacher-Assigned Tasks_

Rosa indicated that she really felt the book was a helpful resource for both her and her children, but it was difficult to maintain with children who had regular homework to complete. She maintained that “regular schoolwork” came first.

Hughes: Did you view the Bridges program as an important academic activity?

Rosa: Yes, it was a helpful resource for me and a good way for my children to practice the basics, but it was hard to do after all of the regular homework was finished. Regular schoolwork has to come first. By the time the homework is finished, the children do not have much interest in the Bridges books.

Jane also maintained that regular classroom assignments had to come first. A single Latino mother of three Jane depends on her mother for help with the children during the week. Jane found the materials to be useful, but said it was difficult to find the time and energy for her children to complete additional academic work after the homework was done. Jane said that often her mother would also assist the children in
the Bridges books, but homework had to come first. By the time the homework was finished, the children had lost interest in completing the Bridges books.

Jane: I tried to have a schedule like the one (contract) in the book, but it was too hard to fit everything in. I’m a single mother and my mother helps me with the children, so she helped them sometimes when they would go to her house after school. But the rule was that the teacher’s work came first. If there was time after that, they worked in the Bridges books.

Jane: My children know that they have to finish their homework before they can play or do anything else after school. We try to eat together as a family and by that time it is late. After the meal, the children have to get ready for bed and make sure that everything is ready for school the next day.

Hughes: Did you view the Bridges materials as an important academic activity?

Jane: Yes, but they were an extra. Whatever the teacher wants has to come first.

Miranda is a single mother of two sons. “Jacob” is in third grade and the other son is not yet in school. Miranda said that Jacob did seem to enjoy working in the Bridges book with his grandmother, and his grandmother felt comfortable using the book with him because it contained an answer key. Eventually, Jacob left the book at his grandmother’s house and Jacob and his grandmother used it regularly on the weekends.
Miranda: I know I didn’t use the book the way I should have, but I stopped forcing him to use it during the week when he had so much regular homework. During the week, Jacob’s homework had to come first and he was tired of schoolwork after that. I encouraged him to do the math sections of the book with his grandmother. He goes to his grandmother’s house on the weekends.

Miranda felt that working on it on the weekend was beneficial and added that her mother was learning from the book by helping Jacob and using the English and Spanish instructions and glossary.

Rosa stated that her son, Nicholas, did have quite a bit more homework to complete than Marissa. While Marissa was able to finish her book, Nicholas completed less than half of his. Rosa felt that by the time Nicholas completed his regular homework, he was less interested in working on the Bridges materials.

Hughes: What parts of the program were difficult to implement?

Rosa: The books were easy to use because the instructions and other information is given in Spanish, and it was hard to find time after their regular homework. Nicholas wasn’t interested in doing more after that. He didn’t even finish half of the book. At first, I tried to persuade Nicholas to work on Bridges every day, but his homework is most important. I let him decide how much would work on the book after he finished his homework.

Additional comments from the post-program questionnaires confirmed that many parents prioritized teacher-assigned academic tasks.
“After homework it was hard to do another assignment but we like working in the book when there was time.”

“I think this is a good book and would like to keep it for the summer. Having 3 children and a lot of other homework, it was hard to do every night. With 3 children, homework time is from 5:30 pm til 9:00 pm before all three kids are done. My first grader enjoyed doing it on her own.”

“This is a good book for the summer. Too bad we had a lot of homework that we couldn’t finish much of it. We would like to purchase one for the summer.”

These comments were related to time, but clearly the parents demonstrate a prioritization of time and teacher-assigned tasks thus supporting the division into two separate themes.

Value and Respect for Teacher Expertise

Rosa initially agreed to participate in the program because her second grade daughter’s teacher suggested that the program would be good for Marissa. Rosa decided to try Bridges with both Marissa and her fourth grade son, Nicholas. Rosa reported that she found the materials easy to use with both of her children, and she enjoyed the interaction. She said that Marissa was much more engaged in the program, but Rosa wondered if it was the one-on-one time spent with her that Marissa enjoyed. Regardless, Rosa maintained that Marissa would complete the Bridges materials with very little prompting, and then go over her work with Rosa before bedtime. Marissa had little classroom homework to complete, and Rosa found that while Nicholas was completing his homework, Marissa would work at the kitchen table next to him and work on the Bridges materials. They went over Marissa’s work at bedtime.

Hughes: Why did you decide to participate in the program?
Rosa: My daughter’s teacher suggested that the books would be good for Marissa. She said that it would help her with her basic math facts and it would be easy to do at home. I decided to try it with both Marissa and my son, Nicholas.

Hughes: What parts of the program did you find useful?

Rosa: The books were easy to use and Marissa especially liked working in the books with me. She completed the activities without complaining then I would go over her work with her before bedtime. She really liked the one-on-one time. I felt like it was a good thing to do and Marissa would take her book in to show her teacher sometimes.

Miranda also expressed value in the teacher’s recommendation to participate in the program. Her son’s teacher recommended that he use the Bridges materials to reinforce basic skills, especially in math. Jacob struggles with schoolwork, and Miranda felt that the Bridges program would be a good way for him to get caught up. This is Jacob’s first year at this school, and Miranda knows that Jacob is behind the other students. She said she stopped pushing him to use the materials during the week, but she encouraged him to use the math parts of the book when he went to his grandmother’s house on the weekends as his teacher recommended.

Miranda: My son’s teacher said that Bridges would be good for him. He struggles in math and his teacher said this might help him get caught up.

Hughes: What parts of the program did you find useful?
Miranda: I liked that the sections were divided by reading, writing, math, and so on. It was hard to find time to do everything so I encouraged Jacob to do just the math sections like the teacher said. I know I didn’t use the book the way I should have, but I stopped forcing him to use it during the week when he had so much regular homework. During the week, Jacob’s homework had to come first and he was tired of schoolwork after that. I encouraged him to do the math sections of the book with his grandmother. He goes to his grandmother’s house on the weekends when I have to work.

Susan said she was hesitant at first to participate in the program and use the materials with her children since she and her husband did not really see the need for a bilingual parent resource. They are both very involved in their children’s education and attend school frequently for various functions and parent-teacher conferences. However, when Susan was at the school the day the researcher was distributing the materials, her son’s teacher recommended that she consider the program.

Hughes: Why did you choose to participate in the program?

Susan: At first I didn’t think my kids needed to use the books because we don’t need a bilingual resource and we are very involved in our children’s schooling. But, I was at the school the day the materials were handed out for my son’s conference, and his teacher recommended that I consider using the program with him. I decided to sign both of my kids up for the program.
Hughes: Did you find it enjoyable to work with your children on the program?

Susan: I did enjoy using the materials. Neither of my children finished the books, but they did use them on their own now and then. I’m glad the teacher suggested it because I probably wouldn’t have used them otherwise. It made it easy for me to really understand what the was expected of my children, especially my third grader.

Hughes: What parts of the program were easy or hard to implement?

Susan: Nothing was too hard to do with the kids. The flashcards were really helpful for my son and the teacher said it would be good for him to practice. My daughter used the book list to help her pick out books from the library.

Another comment on the post-program questionnaire indicated participation based on a teacher recommendation:

“Thank you for giving us the chance to do the program. Sarah’s teacher said it would be good for her to do and it was. We liked doing it together.”

Additional comments on the post-program questionnaire indicated that parents viewed the program favorably and appreciated the opportunity. Several Spanish-speaking parents noted that the bilingual resource was valuable and enabled them to better help their children at home. The additional questionnaire comments include:

“Fue de gran ayuda y poder trabajar you con el porque tambien venia en Espanol.” (Was of great aid and to be able to work you with the because it was in Spanish.)
“Este program fue util para mi hijo porque le ayudo aa a aprender mas y circo que es in bien programa para que los estudiantes apiendan.” (This program was good for my son because I could help him …)

‘Mi comentario es que este programa es muy bueno para mi hija y todos los ninos. Gracias.” (My comment is that this program is very good for my daughter and all the children. Thanks.)

“Es una buena oportunidad para que el nino tenga mejores perpectivas y alcance el nivel academic deacuado a su grado. Gracias!” (It was a good one opportunity for the child to have better perspectives and reach the academic grade level. Thanks!)

“Les agradesco por tomarse el tiempo para hacer un libro tan bueno y educativo. Realmente nos gusto mucho y ayudo mucho a mi hija pues la vi muy alegre y motivada y al final ella ya no necesito ayuda de verdad. Mil Gracias.” (… taken the time to do an educational and such a good book. It really helped us alot and I helped my daughter a lot therefore I saw her happy and motivated… Thousand Thanks.)

“Lo que puedo comentar que el programa bridges is muy bueno.” (The Bridges program is very good.)

“Me parecio muy bien que las intrucciones estuvieran en igles y espanol. eso me ayudo much para poder trabajar con ella.” (It was good that the instructions were in Spanish and English because it helped me work with her.)

“I think it would be great for the summer. I try to buy workbooks and games so my children go back to school ready.”

“The books are easy to use and appear well designed. They were a bit too easy for my kids who are currently working above grade level.”

The additional comments on the questionnaires and the interviews with parents were consistent with the qualitative data collected with regards to the Bridges program, student motivation, and parental involvement. Overall, parents seem very involved and interested in providing a variety of out-of-school learning activities for their children. From the conversations and additional comments, the researcher concluded that parents viewed classroom homework as the first priority and made time to assist their children.
or made sure that their children completed that first. Several indicated that they chose to participate in the program because the teacher recommended it. Parents seemed to view the Bridges program favorably and found the bilingual resources helpful. Most indicated that their children enjoyed using the materials even if not on a regular basis.

These findings are consistent with the overall post-program questionnaire results regarding student motivation and parental involvement. (See Appendix E for a complete summary of the pre- and post-program questionnaire results.) Table 24 provides a summary of parents’ responses with regard to their overall perceptions of the Bridges Program. Of the parents who completed post-program questionnaires, 89% reported (strongly agreed or agreed) Bridges made it easy to work with their children, and 93% of the parents surveyed reported (strongly agreed or agreed) that they enjoyed working on Bridges with their children. Furthermore, 93% indicated with a score of 1 or 2 (strongly agree or agree) that they have a better understanding of their child’s academic work level after using Bridges, and 88% reported with a score of 1 or 2 (strongly agree or agree) that they have a better understanding of grade level expectations after using Bridges, and 86% indicated with a score of 1 or 2 (strongly agree or agree) that they feel better equipped to assist their children with academic tasks after using Bridges. When asked if they would use Bridges again, 86% reported they would with a score of 1 or 2 (strongly agree or agree).

Parents also reported on their perceptions of student motivation. Table 25 provides a summary of parents’ perceptions of student motivation as it relates to their commitment to the Bridges program. While only 32% indicated scores of 4 or 5 (high or frequently) regarding how often/frequently the child worked on Bridges, 54%
reported a score of 4 or 5 on the question that asked how much the child enjoyed working on Bridges. This is also consistent with the findings gathered from the telephone interviews indicating that while the children did not have the time to work on the program regularly, they did seem to enjoy the books. It is important to note that the program questionnaires report the parent perceptions of student motivation rather than the students’ perceptions of their motivation to work on the program.

Table 24

Post-Program Questionnaire Responses Regarding Bridges

<table>
<thead>
<tr>
<th>Bridges</th>
<th>1 Strongly agree</th>
<th>2 Agree</th>
<th>3 Disagree</th>
<th>4 Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Br25 - Instructions were easy to understand</td>
<td>47%</td>
<td>44%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Br27 - Answer pages were helpful</td>
<td>47%</td>
<td>44%</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>Br28 – Materials were at the appropriate academic level</td>
<td>31%</td>
<td>48%</td>
<td>16%</td>
<td>1%</td>
</tr>
<tr>
<td>Br29 – Incentive contract was helpful</td>
<td>27%</td>
<td>52%</td>
<td>16%</td>
<td>0%</td>
</tr>
<tr>
<td>Table 24 (continued)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Br30 – Would use Bridges again</td>
<td>37%</td>
<td>49%</td>
<td>8%</td>
<td>3%</td>
</tr>
<tr>
<td>Br33 – Would urge the school to purchase Bridges</td>
<td>56%</td>
<td>38%</td>
<td>3%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Table 25
## Post-Program Questionnaire Responses Regarding Student Motivation

<table>
<thead>
<tr>
<th>Student Motivation</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>PostSM8 – How much of the workbook did the child complete</td>
<td>10%</td>
<td>29%</td>
<td>27%</td>
<td>16%</td>
<td>18%</td>
</tr>
<tr>
<td>PostSM9 – How often/frequently did the child work on Bridges</td>
<td>10%</td>
<td>21%</td>
<td>37%</td>
<td>15%</td>
<td>17%</td>
</tr>
<tr>
<td>PostSM10 – How much did the child enjoy Bridges</td>
<td>10%</td>
<td>11%</td>
<td>26%</td>
<td>28%</td>
<td>26%</td>
</tr>
<tr>
<td>PostSM11 – How much did the child enjoy using the reading list/log</td>
<td>34%</td>
<td>18%</td>
<td>29%</td>
<td>14%</td>
<td>6%</td>
</tr>
<tr>
<td>PostSM12 – How much did the child enjoy using the flashcards</td>
<td>35%</td>
<td>15%</td>
<td>39%</td>
<td>8%</td>
<td>3%</td>
</tr>
<tr>
<td>PostSM13 – How much did the child enjoy using the incentive contract</td>
<td>30%</td>
<td>15%</td>
<td>46%</td>
<td>6%</td>
<td>3%</td>
</tr>
<tr>
<td>PostSM14 – How much help did the child need to complete</td>
<td>32%</td>
<td>23%</td>
<td>29%</td>
<td>14%</td>
<td>3%</td>
</tr>
<tr>
<td>PostSM15 – How often did the child complete activities in a quiet area</td>
<td>14%</td>
<td>10%</td>
<td>29%</td>
<td>19%</td>
<td>29%</td>
</tr>
</tbody>
</table>

While several of the hypotheses indicated that the Bridges did not account for a significant amount of variance in student performance, the qualitative data provided insight as to why the program did not demonstrate effectiveness. The two sets of qualitative data, the data gathered from the questionnaires completed by the parents and the data collected from the telephone interviews, supported one another. Even
though significant achievement gains were not demonstrated among the Bridges group, parents did view the program as valuable and indicated that they and their children enjoyed using the materials. However, time constraints, regular classroom homework, and other after-school activities prevented students and parents from utilizing the program on a regular basis as it was intended. These findings indicated a value for the program as well as provided an explanation for why the program did not demonstrate the effectiveness that one would expect when implemented during the academic school year. These findings lead to the conclusion that while the Bridges program did not demonstrate significant effectiveness as a program implemented during the school year, it may be a valuable resource if implemented during the summer months as originally designed. Additionally, comments such as: “This is a good book for the summer. Too bad we had a lot of homework that we couldn’t finish much of it. We would like to purchase one for the summer” lend strong credence to the presumption that the Bridges program would be most effective if implemented in the manner that it was originally intended.

Summary

Chapter IV presented the findings of the data. Demographic statistics were presented to show the actual participation of students and parents (as demonstrated by the number of completed and returned questionnaires). Other statistics provided include ethnicity and the number of students in each treatment group. Results of the general and specific hypotheses were presented. The researcher found significance in only two hypotheses. Hypothesis 2 (For students in the Bridges group, there will be a gain between pretest and posttest scores at each grade level.) was significant at Grade 3
in reading and at Grades 3, 4, and 5 in math. Hypothesis 5 (Within the Bridges group, post motivation principal components account for a significant amount of variance in predicting the completion of the Bridges books independent of pre-student motivation scores.) was also found to be significant. Finally, data collected from the telephone interviews were also analyzed and three themes emerged. Parents indicated that time was a factor in their ability to complete the program. However, despite their busy schedules, parents valued and respected teacher recommendations to participate in the Bridges program. Additionally, the qualitative data suggested that parents prioritized teacher-assigned tasks over “extra” academic activities. This data supported the quantitative data regarding student motivation and parental involvement despite the findings with respect to academic achievement that were not significant. The telephone interviews and comments on the post-program questionnaires confirmed that parents found value in the program, as well as provided an explanation for why the program did not demonstrate the effectiveness that one would expect when implemented during the school year. Additionally, parents’ comments expressed a strong interest in pursuing the program during the summer months.
CHAPTER V
SUMMARY, CONCLUSIONS, AND IMPLICATIONS
FOR FURTHER RESEARCH

This chapter includes summary of the study, conclusions drawn from the analysis of the data, and practical implications of the study relevant to programs and strategies that could increase parental involvement, student motivation, and student achievement in the Latino student population. It concludes with recommendations for future research and a summary. This mixed methods study brought to light several important findings which support the existing literature regarding Latino parental involvement. In addition, it lends support for the intended implementation of the Bridges program during the summer months when students are not in school.

Summary of the Study

The dissertation is a mixed methods study to investigate whether a relationship exists between the implementation of the Bridges during the school year and academic achievement gains in a largely Latino student population. Parental involvement and student motivation were also important components in this study. The Bridges program was developed by teachers to provide grade level exercises and activities for the purpose of assisting parents in engaging their children over the summer months to decrease summer learning loss. Instructions and additional resources (i.e., glossary,
etc.) are written in both Spanish and English to serve both populations. Each book presents materials that should serve as a review of the skills acquired over the previous academic year and expose students to new skills to which students will be introduced in the upcoming academic year. The purpose of this study was to determine if Bridges would serve as an effective tool for parents to assist their children during the academic year and to determine if it increases student achievement.

Statement of the Purpose

As the cultural composition of our country becomes more and more diverse, so do our student populations. Due to the data collection measures implemented by recent legislative mandates, educators are examining student achievement differences among different ethnic backgrounds. Reports indicate that Latino students not only score well below their peers on standardized tests, but they are more likely to enter kindergarten unprepared to learn, have higher suspension, expulsion, and drop-out rates, and are only half as likely to earn a college degree as white students (Educational Commission of the States, 2004; National Center for Educational Statistics, 2003; ThinkProgress.org, 2006; U.S. Department of Education, 2000). The dramatic increase in the Latino population requires a relentless reevaluation of the manner in which we are educating this growing minority. Demographic projections predict that by the year 2050, Latinos will comprise 25% of our population (U.S. Census, 2005). Given that today’s first grade students will enter the labor force in the next 12 to 16 years, notably when the retirement of the baby boom generation will be peaking, Latino students will comprise a significant percentage of our work force. To ensure that they are prepared
to contribute to society with the necessary skills, we must find strategies to better meet their educational needs.

Statement of the Problem

As the number of Latino students continues to rise, the issue of the achievement gap with our minority students has even greater significance. It is inaccurate to characterize the Latino population as low-achievers. Therefore, educational experts have examined the reasons why some students perform well and others do not, as well as interventions designed to narrow the achievement gap (Chavkin & Gonzalez, 1995; Delgado-Gaitan, 2001; Inger, 1992; Jimenez, 2000, 2001; Schmid, 2001; Scribner et al., 1999; Thomas & Collier, 1997; Trumbull et al., 2001). Several key factors have emerged. One appears to be an effective home-school connection, in which important aspects include access to learning materials in the home, out-of-school learning opportunities, respect and acknowledgement for the language and cultural differences, and parental support. As more and more districts are evaluating programs designed to meet the needs of their low-performing students, this study serves as an investigation of one informal at-home learning opportunity that would provide students with access to academic materials, foster parental support and student motivation, and improve students’ basic skills.

Statement of the Procedures

Parents and their children attending a charter school in New Mexico were asked to participate in the study that provided the families with the Bridges materials at no cost. Data were collected from 73 students that participated in the Bridges program, and 261 students who did not. The New Mexico Standards-based Assessment Tests and
DIBELS fall and spring scores (for reading in Grades 1-2) were used to evaluate student achievement as pretest and posttest measures for all of the subjects in the study. A pre-program questionnaire and a post-program questionnaire were created under the guidance of committee members to obtain information regarding parental involvement, student motivation, environmental factors, and attitudes toward education. Parents of the students in the Bridges group completed the questionnaires before they began the program and after they submitted the Bridges materials back to the researcher at the end of the program. The questionnaires were hand scored by the researcher and the data from the questionnaires were entered into SPSS for analysis. Full and restricted models were tested to support or reject the research hypotheses. Multiple Linear Regression was used and each specific hypothesis was analyzed and interpreted separately. An alpha level of .1 was set for the two-tailed tests. Additionally, qualitative data was collected through telephone interviews and open comments on post-program questionnaires. This data was analyzed to add heuristic value to the investigation by providing insight as to how the program was implemented and an understanding of those factors that contributed to why the program was or wasn’t used in the home. Telephone interviews were conducted with four parents of students involved in the program. The information gathered from the interviews was combined with the additional comments collected from the post-program questionnaires and analyzed to find common themes.

Conclusions and Discussion

Inferential statistics were generated from testing general and specific hypotheses identified in Chapter III. Achievement scores on the New Mexico
Standards-Based Assessment Test for reading and math and the DIBELS Test (for reading Grades 1-2) in the spring and fall of the academic school year were used to determine gains. Parental involvement was determined using principal component analysis of specific items on the pre-program questionnaire and the post-program questionnaire. Two underlying constructs were identified in the pre-program questionnaire responses with respect to parental involvement. These were labeled “positive interactions with school personnel” (PREPIF1) and “the extent to which parents support the academic activities of their children” (PREPIF2). Two underlying constructs were found in the post-program questionnaire with regard to parental involvement in the Bridges program. These were labeled “the extent to which parents enjoyed using Bridges with children” (POSTPIF1) and “found Bridges to be a helpful resource” (POSTPIF2) identifying the extent to which Bridges enabled them to participate in the academic lives of their children.

Student motivation was also determined using principal component analysis on both the pre-program questionnaire and the post-program questionnaire. One underlying construct labeled “academic enjoyment” was identified on the pre-program questionnaire. Two underlying constructs were found in the post-program questionnaire related to student motivation. These were labeled “enjoys using the Bridges program,” and “works on Bridges without distraction.” Cronbach’s Alpha was used to determine reliability estimates on these variables and produced satisfactory reliability estimates that ranged between .626 and .864.

General Hypothesis 1: The Bridges program accounts for a significant amount of variance in predicting achievement gains as determined by the increase in posttest
scores over pretest scores in reading and math. The multiple linear regression analysis indicated that it was not significant in Specific Hypothesis 1.1 or 1.2 examining reading and math independently. However, it is important to note that the mean scores of the students in the Bridges group were slightly higher than the comparison group on both pretest scores and posttest scores. (See summary of pretest and posttest scores on page xx.)

More importantly, the Bridges group produced gain scores between pretest (fall) and posttest (spring) in both reading and math that were higher than the gains achieved by the comparison group, as well. While it is unlikely that the increase in scores is solely attributed to the Bridges program, they did achieve higher scores than the comparison group.

General Hypothesis 2: For students in the Bridges group, there will be a gain between pretest and posttest scores in reading and math at each grade level. Data analysis indicated that significance was found only at Grades 3, 4, and 5 in math and Grade 3 in reading. However, for both reading and math, gains were in the predicted direction at all grade levels. The probability of this occurrence is .016, therefore this gain is not likely due to chance. While the hypothesis was found to be nonsignificant, the fact that posttests were higher than pretests at every grade level might be an indicator that Bridges is likely to have contributed to student achievement gains. There are other possible explanations, such as differences in teacher effectiveness across grade levels. Further research is needed with a larger sample size to rule out alternative explanations such as teacher effectiveness and selection bias and to state with confidence that Bridges contributes to achievement gains at all grades levels.
General Hypothesis 3: Within the Bridges group, ethnicity accounts for a significant amount of variance in predicting post-test scores independent of pretest scores. This was found to be not significant for both reading and math. However, through the telephone interviews and responses provided on the post-program questionnaires, there were strong indications that Latino parents found the bilingual features of the book to be of value in assisting their children with the program, understanding grade level expectations, and equipping them to assist students with homework. One might assume that given the opportunity to complete the program during the summer as the program was intended, Latino parents, especially those that speak little or no English, may be better able to work with their children on academic tasks more effectively thereby reducing summer learning loss and improving student achievement. This assumption is supported by the literature regarding summer learning loss. Cooper and Sweller (1987) maintain that the long summer break has a greater negative impact on students who live in non-English speaking homes. Alexander and Entwisle (1982) also concluded that children in non-English speaking homes have minimal opportunities to practice language development skills, are exposed to fewer learning materials, and ultimately lose ground when school is not in session. Furthermore, according to a report prepared by the Pew Latino Center (2004), students with parents born in Mexico, the Dominican Republic, and Puerto Rico scored substantially lower on standardized tests than their peers with parents born in the U.S. Therefore, while the inferential statistics did not show significance with regard to ethnicity and the effectiveness of the Bridges program, the qualitative data and the literature support the assumption that it would be of greater value to Latino parents and
students. From the comments collected from the post-program questionnaires and the telephone interviews, parents indicated that they saw value in the bilingual features of the book, viewed the program favorably and said that the program enabled them to better help their children at home. Furthermore, 86% of the parents surveyed rated question 24 on the post-program questionnaire (“After using the Bridges program, I feel better equipped to help my child with school work.”) with a score of 4 (strongly agree) or 5 (agree). The conclusion that the Bridges program would be of more value to Latino parents would be a stronger statement if we could compare these findings with non-Latino parents who have participated in the program. Further research is needed.

General Hypothesis 4: For the Bridges group, post motivation factors are positively related to achievement gains on standardized tests. This was found to be not significant. It is important to note that the student motivation was determined by parents’ perceptions of their children’s commitment to the program. A more accurate investigation would include students’ own indications of the their motivation to complete the Bridges materials. Additionally, since the completion rate of the program was low due to time constraints and regular classroom homework, it is reasonable to assume that the findings might be different if students had the opportunity to work on the program regularly and complete it. Several interview responses and questionnaire comments demonstrated that parents felt their children enjoyed working on the materials because it provided them one-on-one time with the parents. The research clearly supports that how parents interact with their children at home and the kinds of academic activities they expose their children to outside of school is the one of the
greatest predictors of student achievement (Catsambis, 1998; Cotton & Wikelund, 1989; Early Childhood Longitudinal Study-Kindergarten Cohort of 1998-99; Epstein, 1996; Izzo, 1999; Walberg, 1984). Henderson and Berla (1994) maintain that the extent to which a family is able to create a home environment that promotes learning is one of the most accurate predictors of student achievement. Because the students enjoyed working on the Bridges program with their parents, it is logical to assume the program may promote quality educational practice at home thereby improving student achievement.

General Hypothesis 5: Within the Bridges group, post motivation components account for a significant amount of variance in predicting the completion of Bridges books independent of pre-student motivation components. This hypothesis was found to be significant. Correlation analysis produced an r score of .675 and a p value of .000. This was an important finding because it indicated that the student motivation scale used was an effective measure, and that student motivation principal components were predictive of students’ completion of the book.

It was important to run a reliability check to verify that parents’ perceptions regarding completion of the book were in alignment with the investigator’s assessment of book completion. The fact that there was a high correlation between item 8 in the post-program questionnaire that measured parents’ perceptions of the amount of the book completed and the researcher’s assessment of the amount of the book completed indicates that the parents responded in a reliable and valid manner.

General Hypothesis 6: There is a significant difference between males and females in predicting achievement gains in reading and math. No significant
differences were found for the Bridges group indicating that the program materials present no evidence of gender bias. This is an important finding since many experts maintain that gender has an impact on student achievement within racial groups, and that gender bias is imbedded in many educational materials (Bailey, 1992; Brown & Gilligan, 1993; Orenstein, 1991; Schmid, 2006). Schmid has conducted research to determine the factors affecting achievement of Latino students. She says that Latina girls are more likely than Latino boys to be bilingual, earn higher grade point averages, and graduate from high school. Moreover, Schmid claims that Latino boys are more likely to be assigned to remedial classes and have discipline problems than girls. Conversely, Brown, and Gilligan (1993) found that race and class impact girls’ interpretation of in-school activities and out-of-school activities. Their study shows an overall decline in Latinas’ academic confidence and interest in educational tasks as they progress through school. Furthermore, Orenstein (1991) claims that Latinas drop out of school at a greater rate than any other ethnic group. According to Bailey (1992), we must work toward establishing a “gender-equitable” curriculum with materials that address the needs, interests, and experiences of both males and females.

General Hypothesis 7: There is a relationship between parental involvement and achievement gains within the Bridges group. The resulting gains for both reading and math were shown to be not significant. One possible reason for this is that the program may have long-term effects on increased parental involvement rather than those that are apparent within a few months. Additionally, while it is generally accepted that student success and parental involvement go hand in hand, parents and school personnel often have different definitions of parental involvement (Berla &
Henderson, 1994; Catsambis, 1998; Cotton & Wikelund, 1989; Epstein, 1996; Izzo, 1999; Walberg, 1984). Even though the multiple regression analysis did not show a significant relationship between parental involvement and achievement gains within the Bridges group, the qualitative data collected presented some interesting points to consider.

From the telephone interviews and the comments provided on the post-program questionnaires, parents clearly indicated that they are deeply involved with their children’s education and academic activities. Time was identified as an obstacle in completing the program. Closer examination of the qualitative data indicated that time and homework were highly related themes. Parents communicated that the lack of time after all “regular schoolwork” was completed was the issue rather than simply a lack of time to be involved with their children on academic tasks. This prioritization of teacher-assigned tasks suggests that parents are not only willing to help their children with homework, but that they place a high value on education.

Additionally, they placed a high value and respect for their children’s teachers as demonstrated by the attitudes that “what the teachers want has to come first” and many of the reasons given for choosing to participate in the program. This finding is supported by the literature (Chavkin & Gonzalez, 1995; Delgado-Gaitan, 1994; Smrekar & Cohen-Vogel, 2001; Trumbull et al., 2000). Teachers are highly respected in the Latino community, and it is often this sociocultural value and respect for educators that keep parents from “interfering in the schooling process” and perpetuate the inaccurate perception that parents are not involved. The overwhelming number of parents’ responses regarding the concern for completing homework first and making
sure that the children were academically prepared for school, well-rested and fed, and engaged in other extra-curricular activities supports the view that parents see their roles in education in a much more global sense of the child’s well-being (Scribner, Young & Pedroza, 1999). However, the qualitative data presented a clear indication for the value and respect parents have for teachers’ direction, suggestions, and expertise.

Parents’ responses on the post-program questionnaire regarding their opinions about the materials were overwhelmingly positive. On a four-point scale, 89% of the parents surveyed responded with a score of 4 (strongly agree) or 3 (agree) to the statement, “Bridges made it easy for me to work with my child.” 93% responded with a score of 4 or 3 to the statements, “I enjoyed working on Bridges with my child” and “After using the Bridges program, I better understand my child’s academic work.” Given the majority of positive comments, one could logically presume that the low completion rate of the program was not due to parents’ inability, disinterest, or unwillingness to help their children. Rather, this suggests that these parents are highly aware of teacher’s expectations and committed to making sure their children are completing regular homework first. The fact that so many parents commented that Bridges would be better used during the summer substantiates not only the manner in which the program was originally intended to be implemented, but also parents’ willingness to support their children’s academic growth outside of the classroom.

Implications

Based on the literature review, there is clearly an achievement gap in minority populations from pre-kindergarten through Grade 12. This is an even greater concern due to the growing Latino population in this country. As this minority group continues
to grow, the educational community is looking for ways to better meet the needs of these students. The focus of this study was to determine if the Bridges program is an effective strategy to reduce the achievement gap and improve student achievement when implemented during the academic year. In this study, multiple regression analysis was employed to test hypotheses and qualitative data was collected to add heuristic value to the empirical findings. This study was exploratory because the program was used in a manner other than it was originally intended. Bridges is a bilingual parent resource designed specifically to be used in the summer months to foster parental support, reduce summer learning loss, and improve student achievement. This study examined the use of Bridges during the academic year. The study was limited to one school population with a high number of Latino families. Additionally, the students who participated in the program were self-selected.

Research of the investigation did not show that the use of Bridges during the school year accounts for a significant variance in predicting total achievement. However, this study supports the conclusion that many Latino parents are conscientious about the out-of-school experiences to which their children are exposed and place a high value on their academic expectations held by educators. Their qualitative responses demonstrate a strong interest in using the Bridges program during the summer when the time demands of school and homework are less. The nonsignificance can be explained to some extent by the possibility that parents were more concerned in assisting their children with teacher-assigned tasks and regular classroom homework than completing the Bridges program that they viewed as an “extra” activity to be completed if time allowed. This prioritization of after-school
activities indicates that parents indeed value and respect the formal educational experiences provided by the school. This might also imply that if Bridges were provided during the summer as a school-sanctioned program, parents would prioritize it as an out-of-school learning experience.

The low completion rate of the materials affected the fidelity of the study which makes it difficult to make strong conclusions as to the effectiveness of the program. However, the consistency of the comments provided on both the questionnaires and the telephone interviews indicate that even with a larger sample size, the findings would have revealed that students struggled to complete the program in addition to busy after-school schedules and regular classroom homework. There is a possibility that there would be a more distinct difference in academic gains given a larger sample size. Further research would need to be done to determine this.

A further examination of variables that may impact the effectiveness of the program includes grade level, gender, ethnicity, student motivation, and parental involvement. While the results of the regression models examining academic gains at each grade level did not demonstrate significance at every grade level, gains were in the predicted direction at every grade level. These gains are not likely due to chance. However, additional research would need to be done with a larger sample size to determine the effect of Bridges on student achievement with respect to grade level. No significance difference was found between males and females in predicting student achievement. This is a important finding due to the emphasis in the literature that educators must be aware of the potential gender-bias in instruction and curricular materials. Ethnicity was also tested within the Bridges group to determine if race
accounts for a significant amount of variance in predicting post-test scores independent of pretest scores. No significant difference was found. The ethnic groups were classified as White or Latino since only three students fell into the “other” category. Additional research would need to be conducted to state with confidence that there is no significant effect of ethnic or cultural bias in the program. Since the program is designed to be a bilingual program for Spanish-speaking parents and students, the findings do support the statement that there is no significant effect of cultural or ethnic bias in the Bridges program with regard to the Latino population.

The results regarding student motivation were not significant at the .1 alpha level. While parents’ comments and questionnaire responses seemed to indicate that overall the children enjoyed working on the program, post-motivation principal component analysis showed no significance in relation to achievement gains. It is important to note that the pre-program questionnaires and the post-program questionnaires were used to examine student motivation levels. Parents completed the questionnaires, therefore student motivation was determined by parents’ perceptions of the students’ commitment to the program. Additionally, many responses communicated the fact that students did not have the time or energy to work on the materials after regular homework. The fact that students did not have time to establish a routine to work on the program regularly and that the researcher did not obtain student comments about their commitment to the program limits the confidence in these findings. There was a correlation between the post motivation principal component analysis and the completion rate of the Bridges books indicating that student motivation is predictive of student performance. However, it is possible that
student achievement is a long-term effect and not a short-term effect that could be measured in this study. More research needs to be done to support the claim that Bridges increases student motivation and if gains in achievement increase over time.

Regarding parental involvement, the hypotheses that parental involvement accounts for a significant amount of unique variance in predicting achievement gains in reading and math were found to be not significant. However, parents did state that they found value in the program and indicated that the bilingual features of the book made it easier for them to work with their children. Furthermore, a large percentage of the parents surveyed after the program (86%) claimed that they feel better able to help their children with schoolwork and have a better understanding of grade-level expectations after using the Bridges program. In addition, the literature strongly suggests that parental involvement does have positive effects on achievement gains. The qualitative data and the literature support the conclusion that an increase in parental involvement using the Bridges program would, in fact, impact student success even though students in this study did not demonstrate significant achievement gains. One possible reason for this discrepancy is that the large number of students that did not complete the program affected the fidelity of the program. It is possible that had the students worked on the program with regularity, their achievement gains would have been more significant. Additionally, it is quite possible that an increase in parental involvement has positive affects on student achievement, but achievement gains may not be immediate. As with student motivation, the positive results attributed to parental involvement are more likely to be long term rather than short term.
Other possible influencing variables which were not investigated include socioeconomic status (with regard to students’ access to educational materials in the home), parental work schedules as it relates to the amount of time parents have to establish an effective routine for an after-school, at-home learning program, support and encouragement to complete the program from school personnel, and frustration level caused by additional homework for struggling students.

Suggestions for Further Research

In conducting this study, a variety of unanswered questions regarding the Bridges program came to light. The following questions may be important in further examinations of the Bridges program and it’s effectiveness with the Latino population:

1. Does the achievement gap in mathematics and reading narrow with students who use the Bridges program with regularity over the summer months?

2. Does the achievement gap in mathematics and reading narrow with students who continue to use Bridges over consecutive summers?

3. Do teachers find parents more willing to participate in school-related activities after participating in the Bridges program?

4. Is there an interaction between content area and ethnicity in predicting summer loss or gains after completing the Bridges program?

5. Is the Bridges program an effective out-of-school program if presented to parents as a school-sponsored summer program?

6. Is the Bridges program more effective with students whose parents have had little formal education?
7. Does the Bridges program increase student motivation due to an increase in quality one-on-one time with parents?

8. Is there a more effective way to measure student motivation based on their own perceptions, rather than the perceptions of their parents?

Based on the findings of this study, the researcher recommends the following additional considerations for future studies related to the Latino achievement gap:

1. There is very little research on students that are in ESL/ELL programs long term. Additionally, the literature suggests that teacher preparation programs are insufficient in terms of providing instructional strategies that prepare tomorrow’s teachers for multicultural classrooms. More research is needed on how to better prepare teachers to acknowledge, respect, and integrate the cultural differences of these students in the classroom as well as how to build on the funds of knowledge that they bring in order to best help these students succeed.

2. Much of the research conducted on the Latino student population focuses on what happens within the school walls. The strong sense of family and community within the Latino culture instills social goals and value systems that are in sharp contrast to the mainstream cultural values of our educational system such as competition, autonomy, and independence. More research must be conducted to further investigate the different family and social structures which produce different adaptive strategies including adapting to the mainstream public education system. Further research is needed to examine the ways in which Latino students learn at home and in their community, as well as ways in which educators can incorporate those learning experiences in the classroom.
3. In this study, the concept of parental involvement was examined. The literature confirms that school personnel and parents view “involvement” differently. We must better understand and address the disconnect between parents’ perceptions and parents’ perceptions of involvement so that parents and teachers are both supporting the academic lives of the students. More studies are needed to examine how the educational community can create warm, inviting, culturally sensitive environments that will empower parents as partners in education.

4. Educators must learn about gender equity as it relates to their own classrooms and instructional practice. In so doing, they need to examine their own belief systems and expectations, and how they affect their decision-making process and the way they interact with male and female students. More research is needed to determine the role that gender plays in the instruction of English Language Learners as well as Latinas perceptions of their future selves and how that impacts their academic achievement.

5. This study investigated student motivation based on parents’ perceptions of their children’s commitment to the program. More studies need to be conducted to determine effective methods of increasing motivation and the academic confidence of Latino students. It is also important to find effective, accurate methods to measure student motivation.

6. More research is needed to determine what parents need in order to support the academic growth of their children. Perhaps by educating the parents, we can better educate the students.
7. This study was conducted in a charter school. It would be interesting to analyze the level of parental participation of an at-home resource or program such as the Bridges program in public school populations.

8. The qualitative data of this study suggests that parents value education and the educational success of their children. More qualitative studies need to be conducted to dispel the myth that Latino parents do not care about educational opportunity. It would be valuable to take this qualitative research to the next level and look for significant characteristics with regard to time and respect for teachers, time and homework, and homework and respect for teachers. Additionally, the qualitative data collected in this study was gathered from telephone interviews. Interviewees may be more receptive to talk more candidly (with a sense of “personalismo”) if the interviews were conducted in person.

Summary

This chapter began with a summary of the research including a statement of the problem, statement of the purpose, and statement of the procedures. The purpose of this study was to determine the effectiveness of the Bridges program as an intervention designed to narrow the achievement gap in the Hispanic population. The study focused on the effectiveness of Bridges when implemented during the academic year rather than during the summer months as the program was originally intended. As language, sociocultural factors, parental involvement, and access to educational materials at home have emerged as contributing factors to the gap between subgroups of students, the question of the effectiveness of an informal, at-home program, such as Bridges, was
addressed. The researcher demonstrated that while overall achievement gains were not evident, the qualitative data indicated a value and a need for bilingual parent resources like the Bridges program. The implication of this study is that while the Bridges program may not be conducive to implementation during the school year, parents and students would most likely find value in the program and students might experience greater academic benefits if implemented during the summer months as intended.
REFERENCES


No Child Left Behind, United States Senate. (2002). U.S. Department of Education. Washington, DC.


The quiet crisis: Major achievement gaps between minority and white high school graduates. Available online at: http://thinkprogress.org/2006/05/26/achievement-gaps/


U.S. Department of Education (20xx). *Reaching out…. Raising Hispanic Achievement*.


APPENDICES
APPENDIX A

BRIDGES BILINGUAL RESOURCES
Parents’ Guide

“Getting the Most from Bridges”

You are the most important teacher your child will ever have. Bridges is a guided daily workbook to help you succeed in this role.

Studies indicate that basic learning skills are more easily acquired early in life, and small successes can have a lifelong effect on a child's accomplishments. In fact, the more often you tell your children they are intelligent, the more likely they are to become just that. Chances to make such comments present themselves every day, especially during summer or off-track breaks.

You can encourage your children's intellectual development by involving them in things you do. When you cook, point out what ingredients you use and what effect they have on the meal—your vocabulary and science. Take time to explain the news—your social studies. Take your child shopping and point out price, brand, and weight differences—you've taught math, economics, and consumer skills.

Of course, you can also encourage your children to learn by getting directly involved in their schoolwork with a book like Bridges. This workbook contains:

- Over 200 specially designed, self-motivating activities to keep your child busy, happy, and learning. Each day includes an activity in reading, writing, arithmetic, and language. There are forty-five days in all.
- A Parents' Guide containing ideas for getting the most out of Bridges.
- A carefully selected book list full of works children love to read.
- An Incentive Contract to motivate and reward your child's efforts.
- “Try Something New” lists of creative ideas for when your child says, “What can I do? I'm bored.”
- High-Frequency Word Lists with vocabulary to sound out, read, and spell.
- A frameable Official Certificate for successfully completing the workbook activities.
- A Spanish Glossary of terms used in the book. (Glossary words are marked with a ‡.)
- Instructions translated into Spanish to help you help your child.

Bridges is packed with ideas for extracurricula activities, as well as fun and challenging math, reading, writing, spelling, and identification exercises that will take your children a step ahead and help them reach for the stars.
**Bridges Blueprint for Success**

**Summer Reading**
- There is a suggested reading list on pages xiv–xv.
- Experts recommend that you read to your pre-kindergarten through first grade children 5–10 minutes each day and ask questions about the story. For older children, the recommended daily reading times are—
  - Grades 1–2, 10–20 minutes; Grades 2–3, 20–30 minutes; Grades 3–4, 30–45 minutes;
  - Grades 4–5, 45–60 minutes; and Grades 5–6, 45–60 minutes.
- You and your child should decide the length of reading time and fill it in on the Incentive Contract Calendar.

**Summer Activity Calendar**
- An Incentive Contract Calendar is located at the beginning of each section.
- You and your child should sign an agreement for an incentive or reward before your child begins each section.
- When your child completes one day of *Bridges*, he/she colors or initials the ⭐ (star).
- When your child completes the agreed reading time each day, he/she colors or initials the 📚 (book).
- Let your child explore and experiment with the “Try Something New” activities lists.

**Sections of Bridges**
- There are three sections in *Bridges*.
- Each section becomes progressively more challenging.
- There are four activities each day.
- Your child will need a pencil, eraser, ruler and crayons to complete the activities.

**Words to Sound Out, Read, and Spell**
At the end of each book (except Pre–K and K–1) are lists of words to sound out, read, and spell. You can use these for a number of activities and word games you can play with your child:
- Choose your child’s favorite words, make two sets of flash cards, and play the matching game (in order to keep the two matching cards, you have to know their meaning or spelling).
- Draw pictures of exciting words.
- Use as many words as you can from the list to make up five questions, statements, or explanations.
- Write a story using as many words as you can from the word list.
- Write a list of words you have a hard time spelling.
- Write a list of action verbs.
- Close your eyes, try to remember as many words as you can from the word list, and write them down.
- Practice writing each word five times.
- Write a list of words you find while traveling to the mountains, on vacation, or on the way to a friend’s house.

© Federal Education Publishing  Level Green
10 Hints on How to Maximize Bridges

1. Let your child explore the book by flipping through the pages and looking at the activities.

2. Help select a good time for reading or working on the activities. Suggest a time before your child has played outside and becomes too tired to do their work.

3. Provide any necessary materials. A pencil, ruler, eraser, and crayons are all that are required.

4. Offer positive guidance. Children need a great deal of guidance. Remember, the activities are not meant to be tests. You want to create a relaxed and positive attitude toward learning. Work through at least one example on each page with your child. “Think aloud” and show your child how to solve problems.

5. Give your child plenty of time to think. You may be surprised by how much children can do on their own.

6. Stretch your child’s thinking beyond the page. If you are reading a storybook, you might ask, “What do you think will happen next?” or “What would you do if this happened to you?” Encourage your child to name objects that begin with certain letters, or count the number of items in your shopping cart. Also, children often enjoy making up their own stories with illustrations.

7. Reread stories and occasionally flip through completed pages. Completed pages and books will be a source of pride to your child and will help show how much he/she accomplished over the summer.

8. Read and work on activities while outside. Take the workbook out in the backyard, to the park, or to a family camp out. It can be fun wherever you are!

9. Encourage siblings, baby-sitters, and neighborhood children to help with reading and activities. Other children are often perfect for providing the one-on-one attention necessary to reinforce reading skills.

10. Give plenty of approval! Stickers and stamps, or even a hand-drawn funny face are effective for recognizing a job well done. At the end of the summer, your child can feel proud of his/her accomplishments and will be eager for school to start.
Guía para los padres

“Obteniendo el mayor beneficio de Bridges”

Los padres son los maestros más importantes que los niños tendrán en su vida. Bridges ofrece un cuaderno guía de ejercicios diarios para que usted tenga éxito en este papel.

Hay estudios que indican que las habilidades básicas de aprendizaje se obtienen con mayor efectividad durante los años formativos de la persona. Los pequeños triunfos pueden producir efectos permanentes en los logros de los niños. Mientras más a menudo les diga usted a sus hijos que son inteligentes, mayores son las posibilidades de que se conviertan justamente en ello.

Las oportunidades para hacerles tales comentarios a sus hijos se presentan a diario, especialmente durante las vacaciones de verano o los descansos entre periodos de estudio.

Puede motivar el desarrollo intelectual de sus niños al permitirles participar en actividades que usted hace. Por ejemplo, muestreles los ingredientes que use y enseñele el efecto que tienen en las comidas y les habrá enseñado vocabulario y ciencias. Toma tiempo para explicarles las noticias y les habrá enseñado ciencias sociales. Lléve a sus hijos de compras y enseñele sobre las diferencias de precios, marcas y medidas, y les habrá enseñado matemáticas, economía y habilidades del consumidor.

Este cuaderno de ejercicios contiene:

- Más de 200 actividades especialmente diseñadas para incentivar a los niños a que se motiven a sí mismos y se mantengan ocupados y felices a medida de que aprenden. Esta guía está dividida en cuatro actividades diarias: lectura, escritura, aritmética y uso del idioma. La guía presenta un programa de 45 días; cada página con el número del día pertinente.
- Una Guía para los padres que contiene pautas útiles sobre cómo usar mejor el libro.
- Una lista de libros cuidadosamente seleccionados de obras que a los niños les encanta leer.
- Un Contrato de Incentivo para motivar y premiar los esfuerzos de los niños.
- Una lista de ideas creativas “Trata Algo Nuevo” para cuando los niños pregunten: “¿Qué puedo hacer?, estoy aburrido”.
- Listas de palabras, con vocabulario para pronunciar, leer y escribir.
- Un Certificado Oficial para cuando el niño haya completado exitosamente todas las actividades del libro.
- Un Glosario en español de términos utilizados en el libro. (Las palabras que se encuentran en el glosario están marcadas con una *).
- Instrucciones traducidas al español para ayudarlo a usted y a su niño.

Bridges contiene muchísimas ideas para actividades extracurriculares, así como también divertidos y desafiantes ejercicios de matemáticas, lectura, escritura, ortografía e identificación, que harán progresar a su niño y lo ayudarán a obtener las estrellas.

© Federal Education Publishing

vii

Level Green
Bridges Blueprint para el éxito

Lectura para el verano

- En la página XIV encontrará una lista de sugerencias para lectura.
- Los expertos recomiendan que se lea al niño entre edad preescolar y 1er grado, por 5 a 10 minutos diarios y que se le haga preguntas acerca de la historia. Para niños de mayor edad se recomienda una lectura diaria de:
  - Grados 1–2: 10–20 minutos; Grados 2–3: 20–30 minutos; Grados 3–4: 30–45 minutos
  - Grados 4–5: 45–60 minutos; Grados 5–6: 45–60 minutos.
- Usted y su niño deberán pactar el tiempo que dedicarán a la lectura y completar el Calendario de Incentivo de Actividades.

Contrato de Incentivo

- Al principio de cada sección se encuentra un Contrato de Incentivo.
- Usted y su niño deberán firmar un acuerdo de incentivo o recompensa antes de que el niño comience cada sección.
- Cuando el niño complete un día de Bridges, coloreará o escribirá sus iniciales en la ★ (estrella).
- Cuando su niño complete el tiempo diario de lectura pactado, coloreará o escribirá sus iniciales en el ☐ (libro).
- Deje que el niño explore y experimente la lista de actividades Trata Algo Nuevo.

Secciones de Bridges

- Bridges contiene 3 secciones.
- Cada sección se torna progresivamente más desafiante.
- Cada día consta de cuatro actividades.
- El niño necesitará un lápiz, una goma, y lápices de colores para completar las actividades.

Palabras para pronunciar, leer y deletrear

Después de la última sección figuran palabras para pronunciar, leer y deletrear. Usted puede utilizar estas palabras para muchas actividades y juegos de palabras que realice con su niño:

- Elija las palabras favoritas de su niño, prepare dos juegos de tarjetas y juegue al Juego de la Memoria. Ponga las tarjetas boca abajo y dé vuelta de a dos a la vez, tratando de recordar las coincidencias a medida que avance (para quedarse con las dos tarjetas que coinciden, se debe saber o el significado o cómo se escriben).
- Haga dibujos de las palabras interesantes.
- Utilice la mayor cantidad posible de palabras de la lista para inventar cinco preguntas, oraciones declarativas o explicaciones.
- Escriba una historia utilizando la mayor cantidad posible de palabras de la lista.
- Escriba una lista de las palabras que más le cuesta deletrear.
- Haga una lista de verbos activos.
- Cierre los ojos, trate de recordar la mayor cantidad posible de palabras de la lista y escribálas.
- Escriba cada palabra cinco veces.
- Haga una lista de palabras que encuentre mientras viaja a las montañas, vacaciona o se dirige a la casa de un amigo.
10 sugerencias para obtener el mayor beneficio de Bridges

1. Deje que su niño explore el libro, hojando las páginas y mirando las actividades.

2. Seleccione un buen momento para la lectura y la realización de actividades. Sugiera un momento luego de que su niño haya jugado al aire libre y antes de que se encuentre demasiado cansado.

3. Facilite el material necesario, generalmente todo lo que necesitará será: un lápiz, una regla, una goma y lápices de colores.

4. Ofrezca una guía positiva. Los niños necesitan guía permanente. Recuerde que las actividades no son exámenes. Cree una actitud relajada y positiva hacia el trabajo escolar. Realice con el niño por lo menos un ejemplo de cada página. “Piense en voz alta” y muéstrele al niño cómo resolver los problemas.

5. Déle al niño mucho tiempo para pensar. Se sorprenderá de cuánto pueden realizar los niños por sí solos.

6. Extienda el pensamiento del niño más allá de las actividades de la página. Si está leyendo una historia puede preguntarle: “¿Qué crees que sucederá ahora?” o “¿Qué harías si te sucediera a ti?” Incentive a su niño a nombrar objetos que comiencen con ciertas letras o a que cuente los objetos de su carrito de compras. Muchas veces los niños también disfrutan inventando sus propias historias con ilustraciones.

7. De vez en cuando, revise páginas ya finalizadas. Las páginas ya terminadas y los libros ya leídos serán una fuente de orgullo para su niño y lo ayudarán a demostrar lo mucho que ha logrado a través de las semanas.

8. Lea y realice las actividades al aire libre. Lleve el libro de actividades al aire libre al jardín, al parque o a un campamento. ¡Puede ser divertido!

9. Incentive a los hermanos, niñas y niños del vecindario a que ayuden a su niño en las actividades y la lectura. Muchas veces otros niños son perfectos para proporcionar la atención recíproca que necesitan los lectores principiantes.

10. Muestre aprobación! Las calcomanías, las etiquetas y hasta una cara divertida dibujada por usted es un reconocimiento efectivo de un trabajo realizado satisfactoriamente. Cuando su niño haya completado el libro, cuelgue el certificado de logro en un lugar donde todos puedan verlo.
Using the Spanish Instructions in Bridges

Basic instructions in Spanish for each activity are provided in red underneath the English instructions. These are to help you as a parent understand the overall nature of the assignment and what tasks your child is supposed to complete. On pages 99–100, Bridges also includes a Spanish glossary of grammatical and mathematical terms which may be unfamiliar. All words included in the glossary are marked with a ‡. For example, one instruction reads:

Write adjectives in the blanks.
Escribe adjetivos en los espacios en blanco.

The ‡ tells you that you will find an explanation for the word adjective in the glossary:

Adjetivo (adjective) — una palabra que califica a un sustantivo o pronombre. Los adjetivos pueden describir cuántos, de qué tipo o cuál. En la oración “El hombre delgado cepillaba tres perros con un peine azul”, tres, delgado y azul son adjetivos.

Note: Once he or she is old enough, your child should read the complete instructions in English. The English paragraphs sometimes contain additional information your child will need to complete the assignment. While this may be challenging at first, it will help your child develop important educational skills. As children work to understand the English instructions, they will not only strengthen their English skills; they will also develop strategies for learning, such as using context clues, a dictionary to look up unfamiliar terms, and a glossary. These are skills all students need, regardless of their native language.

Uso de las instrucciones en español en Bridges

Debajo de las instrucciones en inglés para cada actividad, encontrará instrucciones básicas en español escritas en rojo. El objetivo de estas instrucciones es ayudarlo a usted, como padre, a comprender la naturaleza general del trabajo y las tareas que se supone que su niño debe realizar. En las páginas 99–100, Bridges también incluye un glosario en español de términos gramaticales y matemáticos que podrían resultarle poco comunes. Todas las palabras incluidas en el glosario se encuentran marcadas con una ‡. Por ejemplo, una de las instrucciones dice:

Write adjectives in the blanks.
Escribe adjetivos en los espacios en blanco.

El ‡ le indica que encontrará una explicación de la palabra adjetivo en el glosario:

Adjetivo (adjective) — una palabra que califica a un sustantivo o pronombre. Los adjetivos pueden describir cuántos, de qué tipo o cuál. En la oración “El hombre delgado cepillaba tres perros con un peine azul”, tres, delgado y azul son adjetivos.

Nota: Una vez que el niño tenga la edad apropiada, deberá leer las instrucciones solamente en inglés. Muchas veces los párrafos en inglés contienen información adicional que su niño necesitará para completar la tarea. Aunque al principio esto puede resultar un desafío, ayudará a que su niño desarrolle habilidades educativas importantes. Al mismo tiempo que los niños trabajan para comprender las instrucciones en inglés, no solamente refuerzan sus habilidades con respecto al idioma, sino que también desarrollan estrategias de aprendizaje, como por ejemplo, el uso de pistas de contexto, de un glosario y de un diccionario para buscar términos desconocidos. Estas son habilidades que todos los estudiantes necesitan, sin importar cuál sea su lengua nativa.

Level Green

Bridges™

168
Match the problems that have the same sum.
Une las sumas que tengan el mismo resultado.

```
10 + 3  9 + 2
5 + 6  8 + 8
8 + 4  7 + 7
9 + 7  8 + 5
4 + 5  3 + 6
5 + 9  6 + 6
```

```
4 + 6  4 + 2
6 + 9  5 + 13
9 + 8  8 + 2
6 + 0  3 + 9
9 + 9  7 + 8
7 + 5  14 + 3
```

Answer the questions below and complete the calendar.
Contesta las preguntas a continuación y completa el calendario.

1. Starting on the proper day of the week for this year, write in the numbers for each day of July.
2. July always has _____________ days.
3. Which day of the week is Independence Day? ________________
4. July comes in what season? ________________
5. How many Saturdays are in July? ________________
6. Draw a flag on the Fourth of July.

<table>
<thead>
<tr>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

© Federal Education Publishing

43

Level Green
Day 5

Read the stories. Decide what will happen next. Underline your answer.
Lee las historias. Decide qué pasará después. Subraya tu respuesta.

1. Holly was about to take a big bite out of her ice cream. Brenda bumped her arm. What will happen next?
   Holly will drink some milk.
   Holly will yell at Brenda.
   Holly will get ice cream on her shorts.

2. Mike was playing tennis with Griffin. The sun was very hot. The boys' faces were getting too much sun. What will happen next?
   Griffin's and Mike's faces will get red.
   Mike will go home.
   Mike and Griffin will get cold.

Look at the pictures. Read the sentences below. Write the sentence number in the box of the matching picture.
Escribe en el recuadro del dibujo el número de la oración que le corresponda.

1. I am very hot and dry. Sometimes in the spring I have flowers.
2. People can go anywhere if they come to me first.
3. Here you can see many animals and people doing fun things.
4. You come to me on some days and learn.
5. This is something that every living thing needs.
6. I am a very special day in July.

Level Green 44 Bridges™
APPENDIX B

LETTERS TO PARENTS REQUESTING PARTICIPATION

Dear Parents,

Your child has the opportunity to participate in a program called Bridges. The Bridges workbooks have been developed by classroom teachers, and are designed to provide grade level activities that are fun and engaging. This program will be a great way for you to understand your child’s curriculum and reinforce basic skills with him or her at home.

Research shows that when parents assist their children with their school work, children are more successful in school. Bridges is designed to make it easy for parents to work with their children. Each lesson has instructions in both Spanish and English, so you can help them if they do not understand what to do. You can encourage them to work on a regular basis since there is a “contract” to which you will both agree. You can decide together what the reward will be for completing the work.

The book is structured to provide a reading assignment each day. Some days they will also do math and other language skills. You will understand from the instructions what they need to do. There are answers in the back of the book that you may use to review your child’s work. At the end of January, the entire book should be completed. We are asking that you return the completed book to school at that time.

This opportunity is made possible through a research study on the achievement gap and at-home learning experiences. The workbooks are provided to you at no cost. In order to complete the research study, the researcher is requesting your help. Two brief questionnaires will be provided to you in order to gain additional information about the program and your opinions about education. Standardized test scores will also be analyzed.

I hope you will participate in this valuable study. Participation is voluntary and refusal will have no impact on your child’s regular classroom education. Please note that all data collected will be kept strictly confidential and used for this study only. If you have any questions, please feel free to call me at 330-354-6713 or 330-699-7083 or e-mail me at melissahughes@sbcglobal.net.

Sincerely,

Melissa Hughes

Yes, I would like to receive the free Bridges materials. I agree to complete the parent questionnaires about the program, and give permission for the researcher to have access to my child’s standardized test scores.

No, I do not agree to participate in the research study.

Name

Signature

171
Estimados padres,

Nos emociona que su hijo(a) tiene la oportunidad de participar en el programa Bridges este verano. Los libros de trabajo de Bridges fueron ideados por maestros y están diseñados para ofrecer actividades divertidas y atractivas, apropiadas para cada nivel educativo. Este programa será una forma excelente para que ustedes entiendan mejor los cursos de estudios de su hijo(a), y que su hijo(a) refuerce sus aptitudes básicas.

Las investigaciones han demostrado que cuando los padres ayudan a sus hijos con la tarea, los niños tienen más éxito en la escuela. Bridges está diseñado para facilitar a los padres el trabajo con sus hijos. Cada lección tiene instrucciones en español y en inglés para que usted pueda ayudar a sus hijos si ellos no entienden lo que tienen que hacer. Usted puede animarlos a trabajar regularmente ya que hay un “Contrato” que tienen que concordar todos. Ustedes pueden decidir juntos cual será la recompensa por el trabajo terminado.

El libro está estructurado para ofrecer una tarea de lectura diaria. Algunos días ellos deberán hacer tareas de matemáticas y otras tareas de lenguaje. Usted entenderá lo que ellos deberán hacer, al leer las instrucciones. Hay respuestas al final del libro que usted podrá utilizar para revisar el trabajo de su hijo(a). Todo el libro deberá estar completo... Le pedimos que usted devuelva a la escuela el libro lleno. Usted se dará cuenta de que su hijo(a) estará más listo para el aprendizaje en ese momento.

Esta oportunidad fue posible a través de un estudio de investigación sobre las diferencias en éxito de estudiantes, y las experiencias aprendizajes en la casa. Los libros de trabajo son suplidos sin costo. Para completar este estudio de investigación, los investigadores necesitan su ayuda. Dos breves cuestionarios serán suplidos a usted para obtener información adicional acerca del programa, y sus opiniones acerca de la educación. Las calificaciones de los exámenes estandarizados serán analizadas.

Espero que usted participe en este estudio valioso. Sepa que toda la información obtenida será estrictamente confidencial y se usará solamente para los objetivos de este estudio. Si tiene alguna pregunta, por favor, llame a mi asistente, Anna Sanchez al teléfono 505-428-3900 o a la dirección e-mail asanchez@carondellosa.com.

Sinceramente,

Melissa Hughes

_______Sí, me gustaría recibir los materiales Bridges por gratis. Estoy de acuerdo para completar los cuestionarios acerca del programa, y dar permiso para los estudios de investigación que tengan acceso de las calificaciones de los exámenes estandarizados de mi hijo(a)

_______No, yo estoy desacuerdo de participar en el estudio de investigación.

Name

Signature
Thank you Letter to Parents for Participating

Dear Parents,

We hope you have enjoyed working with your child on the Bridges program! As we gear up for testing week, we want to thank you for your participation in this valuable research study. It is our hope that the students who completed the books have benefitted from the additional preparation on basic skills.

As you may recall, the Bridges materials were provided to us at no cost in exchange for our participation in a research study on the achievement gap. To assist the researcher in the data collection process, we will be collecting the workbooks during the week of February 21-24. You can help by:

1. completing the attached post-program questionnaire. Your opinions of the program are valuable in this study. Place the questionnaire inside the workbook.
2. clearly marking your child’s name on the front of the workbook.
3. sending the completed questionnaire and the workbook to school with your child. Collection boxes will be located in the front office. The researcher is requesting all of the books be returned regardless of how much of the workbook has been completed by the student.

To acknowledge those students who participated in the program and return the books and questionnaires to school, we will be announcing their names during morning announcements and rewarding them with a certificate and a special gift from Carson-Dellosa Publishing Company.

Parental involvement is so important in the academic success of children. We hope that you enjoyed working with your child on the Bridges program, and we thank you for your continued support! Together we can make a difference for our children!

Sincerely,
APPENDIX C

LETTER TO EDUCATORS DESCRIBING THE STUDY

Dear Educator,

I am a doctoral student at the University of Akron, and I need your help in collecting data for a dissertation titled:

Closing the Achievement Gap:
An Investigation of the Effectiveness of Bridges Summer Program.

I am asking you to consider participating in the Bridges research study. The purpose of this research study is to investigate the effectiveness of Bridges, a bilingual parent resource designed to build learning partnerships between home and school. A pilot study was conducted this summer with two groups in Ohio using Bridges to promote student achievement and minimize learning loss many students experience over the summer months. While the research study of the summer program has not been completed yet, the students and parents were overwhelmingly positive about the Bridges book.

Many students have access to little or no academic experiences during out-of-school time. Furthermore, across the country, there is a notable gap in achievement between minority and disadvantaged students and their white counterparts. Although schools can do much to improve student performance, studies show that minority/disadvantaged students are exposed to fewer out-of-school learning experiences that contribute to the achievement gap. Specifically, Hispanic students, the nation’s fastest growing minority group, are notably behind their white counterparts in the core academic areas. Additionally, various socio-cultural factors contribute to the level at which many parents are involved in their children’s education. Many parents want to help their children, but may not have the skills or resources necessary to do so effectively. Extensive research exists which supports the idea that parental involvement has a great impact on students’ academic success. Furthermore, programs that foster parental involvement are likely to strengthen the home-school connection intended to support the whole child.

As a growing number of districts are reevaluating compensatory and voluntary summer programs and remediation efforts to comply with NCLB guidelines, schools need to choose programs that help students achieve competencies as outlined by national standards and include parental involvement strategies. The Bridges program was developed by classroom teachers and is designed to provide grade level curriculum exercises and activities to engage students over the summer. It was written to foster parental involvement for the English or Spanish parent by providing instructions in both languages. It is also used in many summer school programs as the complete lesson plan or as a supplement to daily activities. The curriculum is all correlated to National Standards. The Bridges series covers all grades from Pre-K to 6th grade. It provides some review of the skills they have just completed in math, reading, writing, and language arts for the previous grade level and then introduces some skills of the next grade level. A contract is provided as an incentive for both the child and parent to
commit to use the Bridges program. Also included in each book are grade-appropriate
reading lists to encourage free reading, a glossary of terms, answer sheets for all the
assignments, and flash cards for additional practice.

I will assist from school personnel with the following:

**Administering the Pretest:** A teacher must give a short pretest at the outset of the
program as a diagnostic evaluation. Students are assigned the appropriate grade level
books according to their performance on the pretests. The pretests will be collected and
provided to the researcher to be used as baseline scores.

**Distributing Books:** Ideally, the books should be distributed to parents in a forum
where the program can be explained to them and they have opportunities to ask questions
and review the books. The Bridges books and an informative letter can be sent home
with the students if a parent meeting isn’t possible. Parents are also asked to complete a
pre-program questionnaire at this point to gather additional data.

**Administering the Posttest:** Each book is designed to provide reinforcement activities
for approximately three months. If the books are distributed in the beginning of the
academic year, the students will need to return the books to school by the end of
December. The posttest will be given by the classroom teacher. The books and the
posttests will be collected at that time.

**Access to standardized test scores:** To assess the impact on student achievement with
a high degree of validity, test scores other than the Bridges pretest and posttest will be
included in the data. Standardized tests, diagnostic tests, or district tests may be used.

If I have your permission to administer the study with your student population, I will
make all arrangements through you as to time, place, and location for distribution and
collection of materials. There will be no charge for the student materials.
At the completion of the study, you will be provided with the final research report written
in dissertation format.

If you will graciously allow me to collect this data, please sign and date the form on the
attached page and return to me as soon as possible. Your help in this process is greatly
appreciated. Let me thank you in advance for your willingness to add to the body of
knowledge dealing with the Hispanic achievement gap and parental involvement. If you
have any questions or concerns about this study, please don’t hesitate to call me at 330-
354-6713.

Thank you in advance for your help with this important research study.
Best regards,

Melissa Hughes
APPENDIX D

SCHOOL’S AGREEMENT TO PARTICIPATE IN THE BRIDGE RESEARCH STUDY

Agreement to Participate in the Bridge Research Study

Thank you for agreeing to participate in the Bridges research study. Please sign and date this form and return it to the researcher as soon as possible. You may fax this form to Melissa Hughes at 330-699-7083. If you have any questions or concerns about the study or the materials, you may reach Melissa at 330-354-6713.

Yes, we are interested in participating in the research study. We agree to assist in the distribution and collection of Bridges summer materials with those members of our school community who are willing to participate. We will also provide student information regarding standardized test scores, contact information, etc. necessary to complete the study. We understand that the scope and design of the research study has been approved through the IRB board at the University of Akron. We also understand that all of the information we provide will be held strictly confidential, shared with no parties outside the scope of the study, and used for this research study only.

Name Sandra B. Davis Date 9/1/05
Signature Sandra Bradic

176
APPENDIX E

SUMMARY OF PRE- AND POST-PROGRAM QUESTIONNAIRE RESULTS

Six questions on the pre-program questionnaire dealt with parents’ perceptions of student motivation. Parents were asked to answer rate each statement based on a scale of 1 to 4 whereas 1 indicates that the parent strongly agrees with the statement and 4 indicates that the parent strongly disagrees with the statement. These responses were collected and entered into SPSS. Table 26 provides a summary of the responses.

Table 26

Pre-Program Questionnaire Responses Regarding Student Motivation

<table>
<thead>
<tr>
<th>Pre Student Motivation</th>
<th>1 Strongly agree</th>
<th>2 Agree</th>
<th>3 Disagree</th>
<th>4 Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>PreSM24 – My child enjoys school</td>
<td>47%</td>
<td>39%</td>
<td>11%</td>
<td>3%</td>
</tr>
<tr>
<td>PreSM25 – My child enjoys reading for pleasure</td>
<td>43%</td>
<td>42%</td>
<td>14%</td>
<td>1%</td>
</tr>
<tr>
<td>PreSM26 – My child enjoys educational activities outside of school</td>
<td>53%</td>
<td>42%</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>PreSM27 – My child does homework with little prompting</td>
<td>29%</td>
<td>40%</td>
<td>21%</td>
<td>10%</td>
</tr>
<tr>
<td>PreSM28 – My child enjoys writing stories for pleasure</td>
<td>28%</td>
<td>28%</td>
<td>34%</td>
<td>10%</td>
</tr>
<tr>
<td>PreSM29 – My child doesn’t like to be absent from school</td>
<td>42%</td>
<td>47%</td>
<td>6%</td>
<td>6%</td>
</tr>
</tbody>
</table>
Eight questions on the post-program questionnaire dealt with parents’ perceptions of student motivation with regards to their commitment to the Bridges program. Parents were asked to answer rate each statement based on a scale of 1 to 5 whereas 1 indicates a response of low/infrequent and 5 indicates a response of high/frequently. These responses were collected and entered into SPSS. Table 27 provides a summary of the post-program questionnaire responses involving student motivation.

Table 27

Post-Program Questionnaire Responses Regarding Student Motivation

<table>
<thead>
<tr>
<th>Student Motivation</th>
<th>1 Low</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 High</th>
</tr>
</thead>
<tbody>
<tr>
<td>PostSM8 – How much of the workbook did child complete</td>
<td>10%</td>
<td>29%</td>
<td>27%</td>
<td>16%</td>
<td>18%</td>
</tr>
<tr>
<td>PostSM9 – How often/frequently did child work on Bridges</td>
<td>10%</td>
<td>21%</td>
<td>37%</td>
<td>15%</td>
<td>17%</td>
</tr>
<tr>
<td>PostSM10 – How much did child enjoy Bridges</td>
<td>10%</td>
<td>11%</td>
<td>26%</td>
<td>28%</td>
<td>26%</td>
</tr>
<tr>
<td>PostSM11 – How much did child enjoy using the reading list/log</td>
<td>34%</td>
<td>18%</td>
<td>29%</td>
<td>14%</td>
<td>6%</td>
</tr>
<tr>
<td>PostSM12 – How much did the child enjoy using the flashcards</td>
<td>35%</td>
<td>15%</td>
<td>39%</td>
<td>8%</td>
<td>3%</td>
</tr>
<tr>
<td>PostSM13 – How much did the child enjoy using the incentive contract</td>
<td>30%</td>
<td>15%</td>
<td>46%</td>
<td>6%</td>
<td>3%</td>
</tr>
</tbody>
</table>

(table continues)
Table 27 (continued)

| PostSM14 – How much help did child need to complete | 32% | 23% | 29% | 14% | 3% |
| PostSM15 – How often did child complete activities in a quiet area | 14% | 10% | 29% | 19% | 29% |

Twelve questions on the pre-program questionnaire dealt with parents’ attitudes and opinions regarding parental involvement. Parents were asked to answer rate each statement based on a scale of 1 to 4 whereas 1 indicates that the parent strongly agrees with the statement and 4 indicates that the parent strongly disagrees with the statement. These responses were collected and entered into SPSS. Table 28 provides a summary of the responses.

Table 28

<table>
<thead>
<tr>
<th>Pre-Parental Involvement</th>
<th>1 Strongly agree</th>
<th>2 Agree</th>
<th>3 Disagree</th>
<th>4 Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>PrePI17 – Could help child more with access to better learning materials at home</td>
<td>32%</td>
<td>35%</td>
<td>20%</td>
<td>13%</td>
</tr>
<tr>
<td>PrePI18 – Visit a public library or book van regularly</td>
<td>33%</td>
<td>6%</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>PrePI19 – Child has access to reading books at home</td>
<td>30%</td>
<td>58%</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>PrePI20 – Have a good understanding of level of academic work expected of my child</td>
<td>43%</td>
<td>43%</td>
<td>12%</td>
<td>1%</td>
</tr>
</tbody>
</table>

*(table continues)*
Eleven questions on the post-program questionnaire dealt with parents’ attitudes and opinions regarding parental involvement. Parents were asked to answer rate each statement based on a scale of 1 to 4 whereas 1 indicates that the parent strongly agrees with the statement and 4 indicates that the parent strongly disagrees with the statement. These responses were collected and entered into SPSS. Table 29 provides a summary of the responses.

<table>
<thead>
<tr>
<th>Question</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>PrePI21 – Feel equipped to help child with homework during the year</td>
<td>43%</td>
</tr>
<tr>
<td>PrePI22 – Feel equipped to help child practice basic skills</td>
<td>45%</td>
</tr>
<tr>
<td>PrePI23 – Purchase instructional materials to help child at home</td>
<td>39%</td>
</tr>
<tr>
<td>PrePI30 – Teachers have a good understanding of child’s strengths and weaknesses</td>
<td>40%</td>
</tr>
<tr>
<td>PrePI31 – Contact with school officials is generally positive</td>
<td>44%</td>
</tr>
<tr>
<td>PrePI32 – Feel comfortable contacting child’s teachers with questions/concerns</td>
<td>54%</td>
</tr>
<tr>
<td>PrePI33 – Attend events at school and meet with teachers regularly</td>
<td>39%</td>
</tr>
<tr>
<td>PrePI34 – There is often too little time at the end of the day to help with homework</td>
<td>6%</td>
</tr>
</tbody>
</table>
Post-Program Questionnaire responses regarding Parental Involvement

<table>
<thead>
<tr>
<th>Parental Involvement</th>
<th>1 Strongly agree</th>
<th>2 Agree</th>
<th>3 Disagree</th>
<th>4 Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>PostPI16 – Bridges made it easy to work with child</td>
<td>44%</td>
<td>45%</td>
<td>10%</td>
<td>1%</td>
</tr>
<tr>
<td>PostPI17 – enjoyed working on Bridges with child</td>
<td>43%</td>
<td>50%</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>PostPI18 – after Bridges, have a better understanding of grade level expectations</td>
<td>30%</td>
<td>58%</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>PostPI19 – after Bridges, better understand my child’s academic work</td>
<td>33%</td>
<td>60%</td>
<td>6%</td>
<td>0%</td>
</tr>
<tr>
<td>PostPI20 – after Bridges, my child is better prepared for school</td>
<td>32%</td>
<td>49%</td>
<td>13%</td>
<td>1%</td>
</tr>
<tr>
<td>PostPI21 – Bridges reading list was helpful/enjoyable</td>
<td>26%</td>
<td>45%</td>
<td>19%</td>
<td>4%</td>
</tr>
<tr>
<td>PostPI22 – Flashcards were helpful/enjoyable</td>
<td>23%</td>
<td>50%</td>
<td>21%</td>
<td>4%</td>
</tr>
<tr>
<td>PostPI23 – After Bridges, visited the public library more frequently</td>
<td>20%</td>
<td>44%</td>
<td>27%</td>
<td>9%</td>
</tr>
<tr>
<td>PostPI24 – After Bridges, I feel better equipped to help my child with school work</td>
<td>34%</td>
<td>52%</td>
<td>10%</td>
<td>1%</td>
</tr>
<tr>
<td>PostPI17 – I enjoyed using Bridges to work with my child</td>
<td>41%</td>
<td>48%</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>PostPI16 – Bridges made it easy to work with my child on basic skills</td>
<td>43%</td>
<td>44%</td>
<td>10%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Eight questions on the pre-program questionnaire dealt with parents’ attitudes and perceptions of education. Parents were asked to answer rate each statement based on a scale of 1 to 4 whereas 1 indicates that the parent strongly agrees with the statement and 4 indicates that the parent strongly disagrees with the statement. These
Responses were collected and entered into SPSS. Table 30 provides a summary of the responses.

Table 30

Pre-Program Questionnaire Responses Regarding Parents' Perceptions of Education

<table>
<thead>
<tr>
<th>Pre-Program Perceptions of Education</th>
<th>1 Strongly agree</th>
<th>2 Agree</th>
<th>3 Disagree</th>
<th>4 Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percep35 – It is important for my child to have learning experiences outside of school</td>
<td>60%</td>
<td>36%</td>
<td>9%</td>
<td>1%</td>
</tr>
<tr>
<td>Percep36 – It is important for my child to be involved in school programs</td>
<td>51%</td>
<td>40%</td>
<td>7%</td>
<td>1%</td>
</tr>
<tr>
<td>Percep37 – It is important for my child to have educational activities outside of school</td>
<td>40%</td>
<td>49%</td>
<td>10%</td>
<td>1%</td>
</tr>
<tr>
<td>Percep38 – Parent-teacher conferences are usually informative and helpful</td>
<td>63%</td>
<td>36%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Percep39 – I have a lot of influence over my child’s attitude toward school</td>
<td>46%</td>
<td>52%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Percep40 – In general, standardized tests are a good measure of a student’s abilities</td>
<td>29%</td>
<td>47%</td>
<td>22%</td>
<td>3%</td>
</tr>
<tr>
<td>Percep41 – Overall, schools have improved over the last ten years</td>
<td>33%</td>
<td>32%</td>
<td>31%</td>
<td>4%</td>
</tr>
<tr>
<td>Percep42 – Overall, the quality of education in our nation is good</td>
<td>15%</td>
<td>44%</td>
<td>35%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Six questions on the post-program questionnaire dealt with parents’ attitudes and perceptions of the Bridges program. Parents were asked to answer rate each statement based on a scale of 1 to 4 whereas 1 indicates that the parent strongly agrees with the statement and 4 indicates that the parent strongly disagrees with the statement.
These responses were collected and entered into SPSS. Table 31 provides a summary of the responses.

Table 31

Post-Program Questionnaire Responses Regarding Bridges

<table>
<thead>
<tr>
<th>Bridges</th>
<th>1 Strongly agree</th>
<th>2 Agree</th>
<th>3 Disagree</th>
<th>4 Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Br25 - Instructions were easy to understand</td>
<td>47%</td>
<td>44%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Br27 - Answer pages were helpful</td>
<td>47%</td>
<td>44%</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>Br28 – Materials were the at the appropriate academic level</td>
<td>31%</td>
<td>48%</td>
<td>16%</td>
<td>1%</td>
</tr>
<tr>
<td>Br29 – Incentive contract was helpful</td>
<td>27%</td>
<td>52%</td>
<td>16%</td>
<td>0%</td>
</tr>
<tr>
<td>Br30 – Would use Bridges again</td>
<td>37%</td>
<td>49%</td>
<td>8%</td>
<td>3%</td>
</tr>
<tr>
<td>Br33 – Would urge the school to purchase Bridges</td>
<td>56%</td>
<td>38%</td>
<td>3%</td>
<td>1%</td>
</tr>
</tbody>
</table>
APPENDIX F

CODING OF PARENT INTERVIEW RESPONSES

Time

Hughes: How did you use the materials?

Rosa: The children usually do their homework at the kitchen table while I’m preparing dinner. It was hard to find extra time in the evenings. Nicholas has more homework than Marissa, so he didn’t want to work on the workbook very much. Marissa liked to do it while her brother was doing his homework.

Hughes: Would you use the books again?

Rosa: It would be better to use the books in the summer when the children don’t have all their regular schoolwork. I think Marissa would really enjoy working together on this again.

Hughes: Did this program change your opinion of how to assist your children in academic activities?

Rosa: Change my opinion of how to help? No, but I think the program made me realize how important it is to take the time to just sit with them and work with them. My daughter more than my son. She really liked the time that we spent together on the book. She liked being able to show me what she
could do, and I think it made her feel like she was like her brother. I really like the books, but there just wasn’t enough time during the week after all of the homework.

Hughes: How did you use the materials?

Jane: I tried to have a schedule like the one (contract) in the book, but it was too hard to fit everything in. I’m a single mother and my mother helps me with the children, so she helped them sometimes when they would go to her house after school. But the rule was that the teacher’s work came first. If there was time after that, they worked in the Bridges books.

Hughes: So the lack of time was the biggest obstacle?

Jane: Yes, I liked the books and so did the children, but it was difficult to work on them regularly during the school year. Even with my mother’s help, it is difficult to fit everything in now, without adding one more thing. I really think we would enjoy working on the books more on the weekends or during the summer. As the children get older and their work gets harder, it gets harder for me to help them. The Spanish instructions and glossary made it easier. It would be good for me to be able to help them better.”

Susan: Neither of the kids finished the books but they worked on them periodically. They worked on them when they could, but sometimes there just wasn’t time. My husband and I think it is very important that the children are involved in many different activities. Both of the children are involved in
extra-curriculars and homework comes first after dinner. By that time, the
children have had a full day and they have little energy for extra homework.

Hughes: So time was a real obstacle in completing the program?

Susan: Yes. We help our kids with regular homework until it is done. Sometimes
that means they don’t go to bed until 9:30 or 10:00 at night. There is only
so much time in the day.

Miranda: My son struggles with schoolwork and I thought that Bridges would be a
good way for him to get caught up. But he was frustrated by more
homework. His regular homework is a struggle and I make him sit at the
kitchen table and work on it. His younger brother doesn’t have homework
so he is usually playing when Jacob is doing homework.

Hughes: Did you modify the program so that Jacob might not be so frustrated?

Miranda: I know I didn’t use the book the way I should have, but I stopped forcing
him to use it during the week because he didn’t have time after all of his
homework was finished. During the week, Jacob’s homework had to come
first and he was tired of schoolwork after that. I encouraged him to do the
book with his grandmother. He goes to his grandmother’s house on the
weekends when I have to work.

Hughes: Did that work better?

Miranda: He seemed to enjoy working on the book with his grandmother. They
weren’t so pressed for time with all of his other homework so they could do
a little each day on the weekends.
Hughes: Did Jacob’s grandmother seem to enjoy working on the program with him?

Miranda: She did like it. It was a way for her to help him and learn from the book, too. She speaks some English, but the Spanish instructions and dictionary in the back (glossary) were good for her.

Additional open comments from post-program questionnaires:

“My child did not complete the book before the deadline, but she really enjoyed working on it. I feel it is a good tool for students and would be more effective in the summer.”

“Very sorry for not following through with completing the program. Classroom homework, extra curricular activities and parent schedules conflicted with our participation in the program.”

“I’m very involved with her teacher and knowing her reading level at school enabled me to help her select appropriate books, etc. Her current teacher and other work at home seem to have her well-prepared in all subjects. The assignments in the book seemed to easy. But it would be good to have a book like this, more challenging, over the summer instead of using it during the busy school year.”

“Great book, great idea, but too busy with sports and homework during the year – better for summer break.”

“Thank you for the opportunity to participate. My son benefited from the book and I liked using it with him. It was hard to work on it every night but we worked on it when we could and we liked to use the contract to keep track.”

“Thank you for letting my children into the program. It was too hard to fit in with all of the other things we have to do, but I am saving the books for the summer. We will work on them then.”

“Too many after-school activities. Not enough time, but a good idea for summer vacation.”
Prioritization of teacher-assigned tasks

Hughes: Did you view the Bridges program as an important academic activity?

Rosa: Yes, it was a helpful resource for me and a good way for my children to practice the basics, but it was hard to do after all of the regular homework was finished. Regular schoolwork has to come first. By the time the homework is finished, the children do not have much interest in the Bridges books.

Jane: I tried to have a schedule like the one (contract) in the book, but it was too hard to fit everything in. I’m a single mother and my mother helps me with the children, so she helped them sometimes when they would go to her house after school. But the rule was that the teacher’s work came first. If there was time after that, they worked in the Bridges books.

Jane: My children know that they have to finish their homework before they can play or do anything else after school. We try to eat together as a family and by that time it is late. After the meal, the children have to get ready for bed and make sure that everything is ready for school the next day.

Hughes: Did you view the Bridges materials as an important academic activity?

Jane: Yes, but they were an extra. Whatever the teacher wants has to come first.

Miranda: I know I didn’t use the book the way I should have, but I stopped forcing him to use it during the week when he had so much regular homework.
During the week, Jacob’s homework had to come first and he was tired of schoolwork after that. I encouraged him to do the math sections of the book with his grandmother. He goes to his grandmother’s house on the weekends.

Hughes: What parts of the program were difficult to implement?

Rosa: The books were easy to use because the instructions and other information is given in Spanish, and but it was hard to find time after their regular homework. Nicholas wasn’t interested in doing more after that. He didn’t even finish half of the book. At first, I tried to persuade Nicholas to work on Bridges every day, but his homework is most important. I let him decide how much would work on the book after he finished his homework.

Additional comments from the post-program questionnaires confirmed that many parents prioritized teacher-assigned academic tasks.

“After homework it was hard to do another assignment but we like working in the book when there was time.”

“I think this is a good book and would like to keep it for the summer. Having 3 children and a lot of other homework, it was hard to do every night. With 3 children, homework time is from 5:30 pm til 9:00 pm before all three kids are done. My first grader enjoyed doing it on her own.”

“This is a good book for the summer. Too bad we had a lot of homework that we couldn’t finish much of it. We would like to purchase one for the summer.”
Value and Respect for Teacher Expertise

Hughes: Why did you decide to participate in the program?

Rosa: My daughter’s teacher suggested that the books would be good for Marissa. She said that it would help her with her basic math facts and it would be easy to do at home. I decided to try it with both Marissa and my son, Nicholas.

Hughes: What parts of the program did you find useful?

Rosa: The books were easy to use and Marissa especially liked working in the books with me. She completed the activities without complaining then I would go over her work with her before bedtime. She really liked the one-on-one time. I felt like it was a good thing to do and Marissa would take her book in to show her teacher sometimes.

Miranda: My son’s teacher said that Bridges would be good for him. He struggles in math and his teacher said this might help him get caught up.

Hughes: What parts of the program did you find useful?

Miranda: I liked that the sections were divided by reading, writing, math, and so on. It was hard to find time to do everything so I encouraged Jacob to do just the math sections like the teacher said. I know I didn’t use the book the way I should have, but I stopped forcing him to use it during the week when he had so much regular homework. During the week, Jacob’s homework had to come first and he was tired of schoolwork after that. I encouraged
him to do the math sections of the book with his grandmother. He goes to
his grandmother’s house on the weekends when I have to work.

Hughes: Why did you choose to participate in the program?

Susan: At first I didn’t think my kids needed to use the books because we don’t
need a bilingual resource and we are very involved in our children’s
schooling. But, I was at the school the day the materials were handed out
for my son’s conference, and his teacher recommended that I consider using
the program with him. I decided to sign both of my kids up for the
program.

Hughes: Did you find it enjoyable to work with your children on the program?

Susan: I did enjoy using the materials. Neither of my children finished the books,
but they did use them on their own now and then. I’m glad the teacher
suggested it because I probably wouldn’t have used them otherwise. It
made it easy for me to really understand what the was expected of my
children, especially my third grader.

Hughes: What parts of the program were easy or hard to implement?

Susan: Nothing was too hard to do with the kids. The flashcards were really
helpful for my son and the teacher said it would be good for him to practice.
My daughter used the book list to help her pick out books from the library.

Another comment on the post-program questionnaire indicated participation based on a
teacher recommendation:
“Thank you for giving us the chance to do the program. Sarah’s teacher said it would be good for her to do and it was. We liked doing it together.”

“I’m glad the teacher told me about the program. I liked working with my son and he looked forward to doing it with me.”

Additional comments on the post-program questionnaire indicated that parents viewed the program favorably and appreciated the opportunity. Several Spanish-speaking parents noted that the bilingual resource was valuable and enabled them to better help their children at home. The additional comments include:

“Fue de gran ayuda y poder trabajar you con el porque tambien venia en Espanol.” (Was of great aid and to be able to work you with the because it was in Spanish.)

“Este program fue util para mi hijo porque le ayudo aa apiender mas y circo que es in bien programa para que los estudiantes apiendan.” (This program was good for my son because I could help him study better.)

‘Mi comentario es que este programa es muy bueno para mi hija y todos los ninos. Gracias.” (My comment is that this program is very good for my daughter and all the children. Thanks.)

“Es una buena oportunidad para que el nino tenga mejores perpectivas ys alcance el nivel academico deacuado a su grado. Gracias!” (It was a good one opportunity for the child to have better perspectives and reach the academic grade level. Thanks!)

“Les agradesco por tomarse el tiempo para hacer un libro tan bueno y educativo. Realmente nos gusto mucho y ayudo mucho a mi hija pues la vi muy alegre y motivada y al final ella ya no necesito ayuda de verdad. Mil Gracias.” (… taken the time to do an educational and such a good book. It really helped us alot and I helped my daughter a lot therefore I saw her happy and motivated... Thousand Thanks.)

“Lo que puedo comentor que el programo bridges is muy bueno.” (The Bridges program is very good.)

“Me parecio muy bien que las intrucciones estuvieran en igles y espanol. eso me ayudo much para poder trabajar con ella.” (It was good that the instructions were in Spanish and English because it helped me work with her.)
“I think it would be great for the summer. I try to buy workbooks and games so my children go back to school ready.”

“The books are easy to use and appear well designed. They were a bit too easy for my kids who are currently working above grade level.”

“I think the books are okay, but a bit too easy for my daughter. I might use them again but only if I could choose a higher level and only on summer vacation.”
APPENDIX G

INSTITUTIONAL REVIEW BOARD APPROVAL

July 17, 2006

Melissa Andrick-Hughes
2538 Connecticut Court
Urbana, Ohio 43405

Ms. Andrick-Hughes:

The University of Akron’s Institutional Review Board for the Protection of Human Subjects (IRB) processed your Application for Continuing Review of the research project entitled: "An Investigation of the Effectiveness of the Bridges Bilingual Resources". This project was reviewed on July 14, 2006. The IRB application number assigned to this project is 20060702.

This protocol was reviewed according to 45 CFR 46 Subpart D, “Additional DHH Protections for Children Involved asSubjects in Research.” The IRB has determined that the study represents research permissible under 45 CFR 46.404.

(7) Research on individual or group characteristics or behavior or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation or quality assurance methodologies

Your research is now approved without further qualifications until July 14, 2007. Per federal guidelines, if you wish to continue the project beyond one year, you must submit a request for continuing review to the IRB. Any changes in the original research protocol must be approved by the IRB prior to implementation.

Enclosed are copies of the informed consent documents which the IRB has approved for your use in this research. Copies of these documents must be submitted with any application for the continuation of this protocol.

Please note that within one month of the expiration date of this approval, the IRB will forward an annual review reminder notice to you by email as a courtesy. Nevertheless, please note that it is your responsibility as principal investigator to remember the renewal date of your protocol’s review.

If your project terminates prior to the annual renewal date, please complete the Final Report Form in order to complete your IRB file.

Please retain this letter for your files. If this research is being conducted for a master’s thesis or doctoral dissertation, you must file a copy of this letter with the thesis or dissertation. If you should have any questions, please do not hesitate to contact me.

Good luck with your research!

Sincerely,

Sharon McWalter
Interim Director

CC: Denise Stuart, Advisor
    Phil Allen, IRB Chair