Hispanic participation in an extended-day program

Rebecca A. Truelove

The University of Montana

Let us know how access to this document benefits you.
Follow this and additional works at: https://scholarworks.umt.edu/etd

Recommended Citation
Truelove, Rebecca A., "Hispanic participation in an extended-day program" (2004). Graduate Student Theses, Dissertations, & Professional Papers. 9504.
https://scholarworks.umt.edu/etd/9504

This Dissertation is brought to you for free and open access by the Graduate School at ScholarWorks at University of Montana. It has been accepted for inclusion in Graduate Student Theses, Dissertations, & Professional Papers by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact scholarworks@mso.umt.edu.
Permission is granted by the author to reproduce this material in its entirety, provided that this material is used for scholarly purposes and is properly cited in published works and reports.

**Please check "Yes" or "No" and provide signature**

Yes, I grant permission  

No, I do not grant permission

Author's Signature:  

Date:  

Any copying for commercial purposes or financial gain may be undertaken only with the author's explicit consent.
Hispanic Participation In An Extended Day Program

This study examined the relationship between participation of Hispanic elementary and secondary students in extended day programs and achievement, as measured by the Comprehensive Test of Basic Skills (CTBS) scores in reading and mathematics and teacher-assigned scores in reading and mathematics. The sample for the mixed methodology was comprised of 140 Hispanic students in grades 3-5 and 10-11. The t-tests employed to determine experimentally important or consistent differences showed experimentally important gains in achievement in CTBS mathematics scores of .02 for the grades 3-5 treatment group and .05 for the grades 10-11 treatment group. The level of significance for the grades 3-5 treatment group CTBS reading scores of .07 was not experimentally consistent above the .05 level of confidence; however, these gains are important indicators of changes in student achievement.

The study also examined the results of the state mandated high school competency exam. The average passing rate for the New Mexico High School Competency Exam indicated 88% of participants passed all subtests on the first attempt while only 69% of non-participants passed. Sixteen percent of the grades 10-11 comparison group students dropped out or were seeking their GEDs while the entire treatment group was still enrolled in high school.

Qualitative data collected through interviews with six elementary and six high school students indicated they attended because they choose to attend and all had positive responses to participation in extended day programs. All of the elementary students stated that they felt more confident solving mathematics problems and felt more confident as readers. They expressed the opinion that extended day programs helped them to understand concepts and complete their homework, which positively influenced their attitudes. Extended day programs were one aspect of the district’s efforts to combat low student achievement and provide the enrichment necessary to ameliorate the effects of inadequate funding and isolation.
ACKNOWLEDGMENTS

The original impetus for this study of Hispanic participation in extended day programs is the awareness that minority students are not achieving as well as their White peers. The successful culmination of this study of Hispanic participation in extended day programs is due to the support of individuals who are concerned about minority educational issues.

I wish to express appreciation to the members of my committee—Dr. David Moore, Dr. Merle Farrier, Dr. Stephanie Wasta, Dr. Rhea Ashmore, and the chair of the committee, Dr. David Erickson. Your support and encouragement made it possible for this investigation of Hispanic participation in extended day programs to be completed. Thank you for your questions, your answers, and your advocacy.

I wish to thank my husband, Jim Brown, for his unconditional patience and understanding during the preparation of this manuscript. The love and affirmation of my parents and children have been immeasurable. I also appreciate the cooperation of the administration at the research site for providing access to student records and confidential files. And a special thank you for my secretary, Deluvina Martinez, for her continuing support and technical assistance. And to Jayme Vigil, who said so often I was his inspiration, he became mine.
# TABLE OF CONTENTS

ABSTRACT ........................................................................................................................... ii

ACKNOWLEDGMENTS .................................................................................................... iii

TABLE OF CONTENTS ..................................................................................................... iv

LIST OF TABLES ................................................................................................................ vi

LIST OF FIGURES ............................................................................................................. vii

CHAPTER PAGE

I. THE PROBLEM STATEMENT AND ORGANIZATION OF THE STUDY ...... 1
   Background ....................................................................................................................... 1
   The Dropout Crises among Minority Students .............................................................. 1
   Standardized Testing and the Minority Student ............................................................ 3
   Standards and Benchmarks .............................................................................................. 5
   Extended Day Programs ................................................................................................. 6
   Statement of the Problem ................................................................................................. 6
   Research Questions ......................................................................................................... 7
   Statement of the Purpose ................................................................................................. 8
   Definition of Terms ......................................................................................................... 9
   Limitations of the Study ................................................................................................. 11
   Organization of the Remainder of the Study ............................................................... 12

II. REVIEW OF THE RELEVANT LITERATURE ........................................................ 14
   Minority Educational Issues ......................................................................................... 14
   Deficit Theory ................................................................................................................ 15
   Teachers of Minority Students ...................................................................................... 17
   Educational Environment .............................................................................................. 19
   Hispanic Achievement ................................................................................................... 20
   Standardized Tests......................................................................................................... 20
   Hispanic Education in New Mexico ............................................................................. 22
   The Dropout Crises among Minority Students in New Mexico ................................ 24
   Extended Day Programs ................................................................................................. 25
   No Child Left Behind ..................................................................................................... 28
   Effective Extended Day Programs ............................................................................... 30
   Mathematica Policy Research Report ........................................................................ 32
   Research Site Extended Day Programs ................................................................... 34
   Program Objectives ....................................................................................................... 34
   Summer Programs ......................................................................................................... 35
   After-School Extended Day Programs ........................................................................ 36

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary</td>
<td>38</td>
</tr>
<tr>
<td>III. METHODOLOGY</td>
<td>41</td>
</tr>
<tr>
<td>Subjects and Setting</td>
<td>41</td>
</tr>
<tr>
<td>Setting</td>
<td>42</td>
</tr>
<tr>
<td>Background</td>
<td>43</td>
</tr>
<tr>
<td>New Mexico High School Competency Exam</td>
<td>44</td>
</tr>
<tr>
<td>Methodology</td>
<td>50</td>
</tr>
<tr>
<td>Hypotheses</td>
<td>51</td>
</tr>
<tr>
<td>Procedures</td>
<td>53</td>
</tr>
<tr>
<td>Protocols</td>
<td>54</td>
</tr>
<tr>
<td>Summary</td>
<td>56</td>
</tr>
<tr>
<td>IV. PRESENTATION AND ANALYSIS OF THE DATA</td>
<td>57</td>
</tr>
<tr>
<td>Plan of Data Treatment</td>
<td>57</td>
</tr>
<tr>
<td>Subjects</td>
<td>58</td>
</tr>
<tr>
<td>t-tests of Experimental Consistency</td>
<td>58</td>
</tr>
<tr>
<td>New Mexico High School Competency Exam Results</td>
<td>64</td>
</tr>
<tr>
<td>Treatment and Comparison Group Relationships</td>
<td>65</td>
</tr>
<tr>
<td>Qualitative Data</td>
<td>69</td>
</tr>
<tr>
<td>Elementary Interview Responses</td>
<td>72</td>
</tr>
<tr>
<td>Grade 10-11 Student Characteristics</td>
<td>76</td>
</tr>
<tr>
<td>Grade 10-11 Interview Responses</td>
<td>78</td>
</tr>
<tr>
<td>Summary</td>
<td>82</td>
</tr>
<tr>
<td>V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS</td>
<td>85</td>
</tr>
<tr>
<td>Summary of the Study</td>
<td>85</td>
</tr>
<tr>
<td>Procedures</td>
<td>86</td>
</tr>
<tr>
<td>Findings</td>
<td>86</td>
</tr>
<tr>
<td>Conclusions</td>
<td>89</td>
</tr>
<tr>
<td>Qualitative Data Results</td>
<td>95</td>
</tr>
<tr>
<td>Implications</td>
<td>103</td>
</tr>
<tr>
<td>Recommendations for Further Research</td>
<td>104</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>105</td>
</tr>
<tr>
<td>APPENDICES</td>
<td></td>
</tr>
<tr>
<td>A  LITERACY EDUCATIONAL PLAN FOR STUDENT SUCCESS</td>
<td>113</td>
</tr>
<tr>
<td>B  MATHEMATICS EDUCATIONAL PLAN FOR STUDENT SUCCESS</td>
<td>115</td>
</tr>
<tr>
<td>C  TECHNOLOGY EDUCATIONAL PLAN FOR STUDENT SUCCESS</td>
<td>117</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Language and Mathematics Achievement in State Standards-Based Tests</td>
<td>24</td>
</tr>
<tr>
<td>2. New Mexico High School Competency Exam and District Rank</td>
<td>46</td>
</tr>
<tr>
<td>3. ACT Scores and State Quartile Rankings</td>
<td>48</td>
</tr>
<tr>
<td>4. Student Characteristics of Treatment and Comparison Groups for Elementary Grades 3-5 and High School Grades 10-11</td>
<td>59</td>
</tr>
<tr>
<td>5. t-test Results for Treatment and Comparison Groups on the CTBS for Elementary and High School Reading and Mathematics</td>
<td>60</td>
</tr>
<tr>
<td>6. t-test Results for Extended Day Program Participants on the CTBS Pre-test 3/02 and Posttest 3/03 in Reading and Mathematics</td>
<td>61</td>
</tr>
<tr>
<td>7. t-test Results for Teacher-assigned Grades in Reading and Mathematics from the Second Semester 2002-03 School Year</td>
<td>63</td>
</tr>
<tr>
<td>8. Grades 3-5 Gain/Loss on CTBS Scores and Reading and Mathematics Teacher-assigned Grades from 2001 to 2003</td>
<td>71</td>
</tr>
<tr>
<td>9. Grades 10-11 Gain/Loss on CTBS Scores and Reading &amp; Mathematics Teacher-assigned Grades from 2001 to 2003</td>
<td>77</td>
</tr>
<tr>
<td>10. Grades 3-5 Interview Responses</td>
<td>99</td>
</tr>
<tr>
<td>11. Grades 3-5 Interview Responses II</td>
<td>100</td>
</tr>
<tr>
<td>12. Grades 10-11 Interview Responses I</td>
<td>101</td>
</tr>
<tr>
<td>13. Grades 10-11 Interview Responses II</td>
<td>102</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. New Mexico High School Competency Exam Results in 2003 of Treatment and Comparison Groups</td>
<td>66</td>
</tr>
<tr>
<td>2. Comparisons by Characteristics (Free/Reduced Lunch, English Language Proficiency, and Gender) of Treatment and Comparison Groups on CTBS Scores in Reading and Mathematics for Grades 3-5</td>
<td>67</td>
</tr>
<tr>
<td>3. Comparisons by Characteristics (Free/Reduced Lunch, English Language Proficiency, and Gender) of Treatment and Comparison Groups on CTBS Scores in Reading and Mathematics for Grades 10-11</td>
<td>68</td>
</tr>
</tbody>
</table>
CHAPTER I
THE PROBLEM STATEMENT AND ORGANIZATION OF THE STUDY

Background

Racism, discrimination, and low expectations are controversial issues surrounding the education of students of color. Additionally, minority students frequently reside in communities with high rates of poverty. Poverty, as a social condition, limits the ability of parents and the school to provide diverse educational opportunities. "Poverty is the major variable predicting low educational achievement" (Futrell & Rotberg, 2002, p. 34). School districts in low-income areas expend less money per student than in middle class or affluent areas. The facilities are often inferior, the access to technology inadequate, and educational materials outdated. A compounding problem is the ability of these communities to attract and retain quality instructional staff. Teacher shortages are common in rural and low-income areas. An additional problem is the concern of teachers teaching out of their endorsed fields (Futrell & Rotberg, 2002).

The Dropout Crises among Minority Students

As early as the mid 1980s, Mann (1986) and Rumberger (1987) speculated that 25% of fifth grade students would not graduate from high school. These figures, in conjunction with current statistics that indicate 70% of inner city fourth graders are incapable of reading at a basic level (Langenberg, 2000), cast a dismal projection for the future of many students. A disparate number of these students are Black, Hispanic, and Native American.

"Cultural discontinuity," claimed Garrett (1995), is "when two worlds collide"
This is the most common explanation for dropout rates among students of color. Dropout occurs when “the inherent differences lead to conflict, and ultimately to high rates of dropout among minority culture students” (Reyhner, 1992, p. 41).

According to a United States Department of Education (1998) report titled, *No More Excuses: The Final Report of the Hispanic Dropout Project*, “a student who drops out of high school is more likely to be unemployed, more likely to earn less when employed, and more likely to raise a family in poverty, thus putting the next generation at risk of dropping out, and repeating this cycle” (p. 6). Although recent national attention focused on the condition of poverty inner city children experience, rural child poverty rates are consistently higher than those of urban areas. A compounding problem is these children often do not have access to the social services available in an urban setting (Nadel & Sagawa, 2002).

However, the emphasis on deficits does not explain the failure of accepted educational practice. Educational research should focus on successes rather than failures.

Instead of focusing on educational and social barriers, educators and administrators are eager for information about best practices. Programs, pedagogy, and curricula need to be systematically studied to identify both what is and is not successful as part of a larger school reform and improvement effort. (Hammer, Stang, & von Glatz, 2002, p. 2)

Schools for poor and minority students must offer the opportunity for these children to change “the social and economic legacy they inherit” (Greer, 1994, p. 15).

Current reform targets student achievement scores at both the state and national levels. This emphasis on “high stakes” standardized tests is widening the achievement

*Standardized Testing and the Minority Student*

Nieto (1996) claimed, “The standardized test is fast replacing teacher creativity as the basis for the curriculum” (p. 103). The standardized test, which was originally used to identify mentally handicapped children, has become the standard evaluative tool to determine student achievement levels. According to Banks (1997), “The lack of recognition and response to the connection between assessment and performance, perhaps more than any other aspect of the standards movement, raises historic and troubling concerns related to fairness, justice, and educational equality” (p. 159). Wesson (2000) agrees when he claims standardized test scores are “more honestly reflections of the economic advantages and disadvantages seen in American society” (p. 35).

Long before the current focus on testing at the state and national levels, Hoffman (1962) expressed his concern that, “Human abilities and potentialities are too complex, too diverse, and too intricately interactive to be measured satisfactorily by present techniques. There is reason to doubt even that they can be meaningfully measured at all in numerical terms” (p. 30).
Despite concerns about high stakes testing, more than 50% of states utilized standardized test scores to assess student achievement, graduation, and promotion prior to the No Child Left Behind (NCLB) legislation (Futrell & Rotberg, 2002). NCLB mandated that every state in conjunction with local education agencies implement a set of high-quality, yearly student academic assessments that include, at a minimum, academic assessments in mathematics, reading or language arts, and science that will be used as the primary means of determining the yearly performance of the State and of each, local educational agency and school in the State in enabling all children to meet the State’s challenging student academic achievement standards. (U.S. Department of Education, 2002b, 115 STAT. 1449)

The unfortunate consequence of this form of assessment is that minority and poverty students are evaluated on tests designed for children who have been exposed to diverse educational opportunities. Test results are used to identify academic inadequacies and place these students into remedial classes. Wesson (2000) claimed “standardized tests were never intended to measure educational quality, nor to serve as gauges for teaching excellence” (p. 35). The results of high stakes testing will cause more children to be retained, thus, exacerbating the dropout rate for students of color. Students whose home language is other than English invariably score lower on reading and language fluency tests. On mathematics tests, they may perform well on computational portions but demonstrate more difficulty with word problems. When students cannot reduce a particular word problem to the same computation form in which they have already demonstrated proficiency, it is clear that language background interferes with problem solving. (Wesson, 2000, p. 36)

Futrell and Rotberg (2002) questioned whether it is “logical to expect a test to overcome the accumulated challenges facing children from low-income families” (p. 35). An additional concern is whether the increased focus on testing will have a
detrimental impact on minority, at-risk students who are already struggling to succeed in mainstream education (Butler & Druian, 1987). Regardless of educators’ concerns about testing, Hoffman (1962) stated, “Two facts dominate the problem. One is that testing must take place. And the other is that, except in the simplest situations, there is no satisfactory method of testing—nor is there likely to be” (p. 30). Despite the concerns and problems surrounding educational testing, it is one form of accountability that is and will continue to be mandated at both the state and national levels. Another form of accountability is the adoption of state and national standards and benchmarks.

Standards and Benchmarks

In response to the nationwide emphasis on accountability, the National Educational Goals panel convened in 1991 to address state efforts to improve education, assessment, and accountability. The panel’s efforts stressed elevated academic standards as crucial for implementing lasting change (Butler, 2000). President George W. Bush continued the focus on rigorous standards with enactment of the No Child Left Behind (NCLB) Act early in his presidency. In his report to congress, he claimed children in the United States “have fallen victim to the soft bigotry of low expectations” (Bush, 2002, ¶ 117). Standards are deemed critical for providing academic direction to ensure all school age children achieve high academic standards.

The standards most states embrace are content standards and performance standards. Content standards are based on core curriculum and outline what students should know and what teachers should teach. Performance standards delineate what students should be able to do to demonstrate proficiency in a given subject area. While
state standards and benchmarks focus on student achievement, they fail to address the
cultural knowledge of minority students in the educational system. One effort to
ameliorate the effects of an educational system that does not recognize the cultural
knowledge of minority students is extended day school programs.

Extended Day Programs

Extended day schooling is a nationwide initiative designed to help inner city, rural, and minority children compete in mainstream educational institutions. According to Delpit (1995), “school failure results from inadequate access to the rules of the ‘culture of power’ and the lack of awareness on the part of those in the dominant culture of the existence and meaning of these power differences” (p. 4). Irvine (1990) suggested that when there is “cultural incongruity between the school and the student, miscommunication and confrontation often occur among students, teachers, and families, resulting in hostility, alienation, and eventual dropping out” (p. 87). One projected benefit to extended day programs is the flexibility to design activities and classes that acknowledge the cultural heritage of students who attend, thereby, providing a venue for these students to feel academically successful.

Statement of the Problem

As described, Hispanic students traditionally score below White students on standardized achievement tests. They are more likely to dropout of school, and fewer attend institutions of higher education. To understand the relationship between Hispanic achievement and participation in extended day programs, this investigation focused on experimentally important and consistent differences between the standardized test
scores in reading and mathematics, and teacher-assigned reading and mathematics letter
grades of students who participated in extended day programs and those who did not.
Additionally, investigation compared the New Mexico High School Competency Exam
(NMHSCE) pass/fail rates of students who participated to those who did not.
Comparisons were made for the grades 3-5 and grades 10-11 treatment groups to
determine whether eligibility for free or reduced lunch, identification as Limited
English Proficient (LEP), or gender impacted mean Comprehensive Test of Basic Skills
(CTBS) scores in mathematics or reading. It is also important to understand students’
perceptions toward involvement in extended day programs and whether they feel
participation has a positive impact on their attitudes toward school or their achievement.
Data indicated some of the relationships between achievement and participation in
extended day programs.

Research Questions

To determine the relationship between achievement, as measured by CTBS
scores in reading and mathematics, and teacher-assigned grades in reading and
mathematics, this study answered the following questions. Is there a relationship
between participation in extended day programs and academic achievement, as
measured by CTBS scores in reading and mathematics and teacher-assigned reading
grades and mathematics grades, among Hispanic elementary and high school students
who attend a rural public school in New Mexico? In addition to the achievement
measures for the CTBS and teacher-assigned grades in reading and mathematics, the
pass/fail rates for students in grades 10/11 will be analyzed to determine if there is a
relationship between participation in extended day programs and the pass/fail rates for Hispanic students in grades 10-11 who complete the six subtests of the New Mexico High School Competency Exam. Is there a relationship between achievement and designation as a Limited English Proficient (LEP) student, qualifying for free or reduced lunch, or being male or female? To obtain answers to qualitative data, students were interviewed to answer the question, do students believe participation in extended day programs had an impact on their achievement or their perceptions toward school?

Statement of the Purpose

The purpose of this study was to discover relationships between participation in extended day programs and Hispanic achievement. Standardized test scores in reading and mathematics and teacher-assigned grades in reading and mathematics for program participants were compared to those of non-participants. The treatment groups’ (pre-test and posttest) CTBS scores were compared for the 2002 and 2003 school years. Experimental importance and consistency for treatment and comparison group CTBS scores and teacher-assigned grades was computed using an independent two-sample, pooled variance t-test. Pre- and posttest scores were computed using a correlated t-test. The New Mexico High School Competency Exam pass/fail rates for participants were compared to those of non-participants. Mean CTBS reading and mathematics scores of LEP students were compared to non-LEP students, scores for students who qualify for free or reduced lunches were compared to those who do not, and scores for males were compared to scores for females. Selected students were interviewed to search for common themes related to participation in extended day programs.
Definition of Terms

This study used the following definitions.

Community Learning Center is a location that assists students in meeting state and local academic subjects, such as reading and mathematics, by providing the students with opportunities for academic enrichment activities and a broad array of other activities (such as drug and violence prevention, counseling, art, music, recreation, technology, and character education programs) during nonschool hours or periods when school is not in session (such as before and after school or during summer recess) that reinforce and complement the regular academic programs of the school attended by the students served. (U.S. Department of Education, 2002c, ¶ 1)

Extended day schools are programs that serve students after school, in the evenings, on weekends, holidays, and during summer vacations. These programs target students during the hours they would otherwise be alone. They provide an array of benefits including improved learning, reduced risk-taking behaviors, and increased safety (Disney Learning Partnership, 2002).

Culture is the ever changing values, traditions, social and political relationships, and worldview created and shared by a group of people bound together by a combination of factors (which can include a common history, geographic location, language, social class, and/or religion), and how these are transformed by those who share them. (Nieto, 1996, p. 390)

Deficit theories are theories that hypothesize that some people are deficient in intelligence and/or achievement either because of genetic inferiority (because of their racial background) or because of cultural deprivation (because of their cultural background and/or because they have been deprived of cultural experiences and activities deemed by the majority to be indispensable for growth and development). (Nieto, 1996, p. 390)
Dropout is a student who terminates formal education before earning a high school diploma.

**Limited English Proficient** includes:

- Students whose home language is other than English
- Students from heritage language groups needing enrichment and further development of academic English, some of whom maintain degrees of fluency in their heritage language, and
- Any other student needing enrichment and further development of academic English. (New Mexico State Department of Education, 2003, p. 12)

**Minorities:**

Involuntary minorities are groups assimilated into a society by encroachment or enslavement. This historically includes African Americans, Puerto Ricans, and American Indians.

Voluntary minorities include groups who emigrate and join a society by choice. This historically includes Irish, German, European, and Mexican-American immigrants.

**Multicultural Education** is a system of basic, yet comprehensive education for all students that rejects discrimination and racism in both the school and society (Banks, 1994).

**Normal Curve Equivalents** are “normalized standard scores” (RMC Corporation, 1976, p. 2). They have a mean of 50 and have the identical range (1-99) and midpoint (50) as percentiles.

**Standardized Test** is the CTBS5/TerraNova Survey Plus (CTBS) that is mandated by the state and given annually in March. The test is norm-referenced and
includes subtests in mathematics, social studies, reading and language arts, and science. (McGraw-Hill, 2002).

Limitations of the Study

Threats to external validity include limits to the generalizability of results to settings, populations, or treatment variables (Campbell & Stanley, 1963, p. 175) other than the Hispanic students who participated in extended day programs in a rural New Mexico school district. Results cannot be generalized to students who attended other extended day programs, to the Hispanic population as a whole, or to any students other than those who participated in the study.

Additional threats to external validity include the quasi-experimental research design. Because students attended regular day and extended day programs at different locations with different instructors, the content or quality of academic programs and differences among the teachers on educational viewpoints or differences in training that affected instructional quality may impact student performance. Also, because extended day programs are voluntary, and not mandated by state or district guidelines, parent participation and attitudes toward extended day school programs may be a confounding factor. The researcher did not attempt to ascertain the level of parental involvement with students who attended extended day programming as opposed to those who did not.

Threats to internal validity “created by uncontrolled extraneous variables that are confounded with the manipulation of the independent variable” (Campbell & Stanley, 1963, p. 175) include the maturation of students over the year of the study, psychological changes, testing: “the effects of taking a test upon the scores of a second
testing" (Campbell & Stanley, 1963, p. 175), and changes in participant motivation. Biases were eliminated through selection methodology that included all students who met the study criteria (having CTBS scores in reading and mathematics for 2002 and 2003, and teacher-assigned grades in reading and mathematics for the 2002 and 2003 school years) in either the treatment or comparison groups. Another threat to validity is the research site’s mandated focus on standardized test preparedness. Since teachers received professional development in preparing students to take tests effectively, these test preparations may have impacted students’ scores on standardized tests. However, this investigation sought to answer the question of Campbell & Stanley (1963), “Did in fact the experimental treatments make a difference in this specific experimental instance?” (p. 175).

**Organization of the Remainder of the Study**

This research on the relationship of Hispanic student achievement to participation in extended day programs is contained in five chapters. Chapter I presents the problem, the purposes for the study, relates the limitations of the study, and provides definitions of terms deemed necessary for satisfactory communication with the reader.

The second chapter reviews the relevant literature regarding the status of research on the education of minority students at the national level and the condition of Hispanic education in New Mexico along with issues affecting low-income students who attend a rural public school. The design of the study and methods of statistical analysis are described in Chapter III. Chapter IV presents the findings from the study;
and conclusions, recommendations, and implications are summarized in Chapter V.

References and Appendices complete the presentation.
CHAPTER II
REVIEW OF THE RELEVANT LITERATURE

This chapter first reviews the literature that focuses on the education of minority students at the national level. Next, the condition of Hispanic education nationally and in the state of New Mexico is investigated. Other points of discussion include the federal legislation which led to the after school initiative known as the 21st Century Community Learning Centers Grant program (21st CCLC), the No Child Left Behind Act, and an examination of effective extended day practices. Next, an analysis of the results of the United States Department of Education (2003a) study commissioned to examine 21st CCLC program implementation to determine whether programs positively impacted student achievement as measured by standardized test scores, teacher-assigned mathematics grades, and teacher-assigned reading grades is discussed. The final point of discussion is an investigation of educational issues affecting impoverished students who attend a small, rural public school in mountainous New Mexico and the extended day program implemented in that district.

Minority Educational Issues

At the national level, there are a number of educational practices that negatively impact minority students. According to Feinberg (1996), “Equality of educational opportunity is intended to compensate for inequalities of opportunities” (p. 36). The current focus on individual freedoms functions as a mechanism that limits the freedoms of children of color who are most often also children of poverty (Feinberg, 1996). Along with the increasing diverse ethnic population of public schools, the “widening
gap between rich and poor students is creating more social class diversity” (Banks, 1994, p. 78).

According to Nieto (1996),

school failure is believed to be the fault either of the students themselves, who are genetically inferior, or of the social characteristics of their communities, which suffer from economic and cultural disadvantages and thus are unable to provide their children with the necessary preparation. (p. 229)

**Deficit Theory**

Deficit theory, popularized in the 1920s, still impacts education in the United States. Belief in inferior genetics and deprivation suffered by cultures other than the mainstream European culture distort the perspective of the predominantly Euro centric professionals who are teaching minority students. Ryan (1972) disputed the theory of cultural deprivation when he stated:

We are dealing, it would seem, not so much with culturally deprived children as with culturally depriving schools. And the task to be accomplished is not to revise, amend, and repair deficient children, but to alter and transform the atmosphere and operations of the schools to which we commit these children. (p. 172)

Freire (1971) contended the structure of schools is historically to maintain the status quo of the dominant culture. He claimed in the “banking concept of education, knowledge is a gift bestowed by those who consider themselves knowledgeable upon those whom they consider to know nothing” (Freire, 1971, p. 72). In addition to educational considerations, the dominant culture’s worldviews conflict with the “cultural context” of minority groups (Freire, 1971, p. 74).

This leads to another reason for minority children to fail in mainstream
education—the school environment creates cultural incompatibility. The home culture
and the school culture function to create a “cultural clash” that negatively impacts
minority students’ achievement (Nieto, 1996, p. 235). Students of color often have
different life experiences, values, and objectives. These, in conjunction with the often-
deprived social demographics of the communities themselves, are considered
explanations for school failure. School failure is viewed as, “a form of resistance to
school knowledge, to class and other forms of social mobility” (Aronowitz, 1994, p.
40). Viadero (1996) asserted White educators have minimized the effects of culture in
the process of attaining knowledge. Eshelman, Mathias, and Schaffer (1997) contended,
“rather than validate non-traditional ways of knowing, thinking, and behaving, these
students have been labeled as deficient by uninformed educators” (p. 1).

Nieto (1996) stressed,

there is not simply a causal effect between these characteristics and school
failure. Instead, it is the school’s perception of students’ language, culture, and
class as inadequate and negative, and the subsequent devalued status of these
characteristics in the academic environment, that help to explain school failure.
(p. 230)

Researchers now recognize that it is possible to identify students who are
potential dropouts as early as elementary school (McDill, Natriello, & Pallas, 1986).
Hodgkinson (1986) expressed the concern that educators “intervene too late in the
course of a student’s development, that certain parts of the profile of a dropout-prone
student may be visible as early as the third grade” (p. 12).

There are a number of conditions associated with identifying these at-risk
students. The conditions that correlate with high rates of low achievement and dropout
are socioeconomic and demographic. These include:

- Living in high-growth states
- Living in unstable school districts
- Being a member of a low-income family
- Having low academic skills (though not necessarily low intelligence)
- Having parents who are not high school graduates
- Speaking English as a second language
- Being single-parent children
- Having negative self-perceptions; being bored or alienated; having low self-esteem
- Pursuing alternatives: males tend to seek paid work as an alternative; females may leave to have children or get married. (Butler & Druian, 1987, p. 3)

Students who are educationally disadvantaged have unique needs that are often further challenged by general educational reforms. These reforms, contended Levin (1986), may be necessary and advantageous for mainstream students but “should not be viewed as a substitute for direct and comprehensive strategies to solve the problems of the disadvantaged” (p. 13).

Teachers of Minority Students

Another problem inherent in educating minority student populations is the discrepancy in the number of non-minority professionals who teach children of color. Banks (1997) expressed the concern that “because of the changing characteristics of the nation’s student population, a large percentage of teachers will be working with students who differ from them racially, culturally, and in social class status” (p. 102). School age enrollment dynamics continue to shift as the ethnicity of the nation’s population changes. “In the United States the population of students of color reached 30% in 1990, 34% in 1994, and will grow to 40% or more by 2010” (Hodgkinson,
1991, p. 2). McDill, Natriello, & Pallas (1986) predicted 46% of students ages birth to 18 will be minorities by the year 2018. However, in 1993, 90% of public school teachers were White (Delpit, 1995). The discrepancy in the numbers of minority teachers who work in increasingly multicultural classrooms perpetuates an unfortunate dilemma in American classrooms—teachers who are not trained to be multiculturally aware and competent in cultures other than their own (Howard, 1999). Banks (1997) stated that mainstream White teachers must “acquire the attitudes, skills, and knowledge needed to work effectively with students of color” (p. 102).

According to Bartolome and Trueba (1997),

the design, selection, and use of particular teaching methods arise from teachers’ perceptions of the academic ability and worth of students. However, even the most pedagogically advanced strategies are ineffective in the hands of educators who believe that ethnic, racial, and linguistic minority students are at best culturally disadvantaged and in need of fixing, or at worst, culturally or genetically inferior, and consequently beyond help. (p. 1)

Freire (1998) contended educators must be cognizant of “the concrete conditions of their world, the conditions that shape them” (p. 58) to understand how minority students process reality and learn. He claimed there are explicit and implicit issues inherent in educating students of color that teachers of a different cultural identity do not understand (Freire, 1998). According to Banks (1997), teachers who are effective in multicultural classrooms must have three kinds of knowledge:

1) Social science knowledge about the nature of their societies and about the diverse cultural and ethnic groups that make up their societies.
2) Pedagogical knowledge to help them make effective instructional
decisions and become skillful in the classroom.
3) Subject matter content knowledge. (p. 103)

In addition, teachers must have the professional development requisite to create
educational environments where disadvantaged students can feel successful.

*Educational Environment*

Since minority children attend schools designated high poverty more often than
White children, society must scrutinize the educational environment in both low poverty
and high poverty schools. The discrepancy between what is offered to high income and
low income schools including technology, Internet hookups, gifted and talented
programs, and extended day activities, negatively impacts the students who attend the
schools with fewer resources (United States Department of Education, 1997).

According to Howard (1999),

the conserving function of education is to inculcate into the minds and hearts of
each new generation those fundamental values and principles that define our
unique character as a nation. The transforming function of education, on the
other hand, is to critically interpret those founding values in the light of ever-
changing social realities and to continually challenge the discrepancies between
our stated beliefs and our national behavior. (p. 5)

Another issue in minority education is the educational level of parents. Parents
who have some higher education have children who exhibit higher levels of academic
achievement. In a study conducted in 1994, the 13 and 17 year-old students who had
parents with some college education scored higher in mathematics and science on
CTBS tests than students whose parents had no college (United States Department of
Education, 1997). The resulting cycle of illiteracy among minority students is
perpetuated from one generation to the next. The cycle of illiteracy among Hispanics did not begin to be broken until after World War II when significant numbers of Hispanic males continued their educations beyond high school. The GI Bill gave veterans of color the opportunity to attend trade schools and colleges (Lind, 2000).

**Hispanic Achievement**

Research on Hispanic achievement at the national level indicates these students have the lowest educational achievement of all groups, especially when they are compared to other student groups on standardized tests (Nieto, 1996). One aspect of low standardized test scores, according to Gould (1981), is that “all forms of human mental measurement are fragile and problematic” (p. 21). Additionally, Bodoo, et al. (1996) claimed “At their best, for example, psychometric tests account for a modest 25-35 percent of the variance of what they predict” (p. 87). Test makers have not been able to surmount this “technical ceiling” since standardized testing was first utilized (Figueroa & Hernandez, 2000, p. 1).

**Standardized Tests**

One major concern with standardized testing is the basic assumption that “the normative framework (psychometric, criterion, or rubrics-based) on which the test scores are based assumes a high degree of experiential homogeneity, cultural/linguistic similarity and equity in learning opportunities among test takers” (Figueroa & Hernandez, 2000, p. 1). Based on this precept, tests to measure Hispanic achievement defy the basic assumptions of standardized tests.

Hispanic students present a unique testing challenge because,
their cultural experiences in the United States are multigenerational and reflect a broad range of acculturation levels, socioeconomic differences, and political power. So vast is their heterogeneity, that the assumptions of tests about homogeneity may well be untenable. Yet, Hispanic students and Hispanic citizens are tested every day and are compared to middle class America in the unique reification of democracy and assimilation that tests impose. (Figueroa & Hernandez, 2000, p. 1)

Critical concerns have been expressed about these comparisons since the 1920s. Brigham (1922) examined intelligence data collected from World War I soldiers. His analysis indicated that proficiency in a home language other than English consistently produced intelligence scores lower than those of White American soldiers. Sanchez (1934) reiterated the concerns about the impact of culture or home language on test scores when he questioned:

Is the fact that a child makes an inferior score on an intelligence test prima facie evidence that he is dull? Or is it the function of the test to reflect the inferior or different training and development with which the child was furnished by his home, his language, the culture of his people, and by his school? (p. 768)

Figueroa and Hernandez (2000) echoed these apprehensions: “The test results of bilingual individuals compared to those of monolinguals, for all age groups, consistently produced a profile of lower (English) test scores regardless of the test being used” (p. 3). These lower test scores resulted in what has come to be recognized as a “language handicap” for bilingual students; however, according to Smith (1942), this handicap is not as systematically reflected in school grades as in standardized tests (Smith, 1942).

Standardized tests ostensibly serve two functions. One is to evaluate individual student progress and another is to determine gaps in student knowledge for remedial or
curricular purposes. However, Figueroa and Garcia (1994) contended,

Invalid inferences are highly probable when tests are used on Hispanic children with varying degrees of exposure to a language other than English. The tests measure something other than what they intend to measure. Predictive validity studies that control for language background strongly indicate that psychometric bias is a real possibility in the testing of students from diverse linguistic backgrounds. (Figueroa & Garcia, 1994, p. 12)

In response to nationwide concerns about the widening gap in minority achievement, President William Clinton convened a White House Strategy Session that focused on Hispanic achievement. As a result of that session, the Clinton administration released five goals designed to close the achievement gap in Hispanic students:

Goal One: Ensure that Hispanic American children have access to high quality early childhood education and development programs and enter school prepared to succeed by increasing the Hispanic participation rate to the national participation rate in high quality programs by 2010.

Goal Two: Respecting the importance of multi-lingualism, age-specific learning needs, research-based instructional approaches, and the variety of developmental levels at which LEP children enter school, by 2010 all states and school district will provide appropriate language instruction to ensure that all students graduate from high school having demonstrated proficiency in English.

Goal Three: Provide a high quality education with appropriate resources and support to ensure equal opportunity for all students in order to eliminate the achievement gap between Hispanic students and other students on appropriate state assessments and other indicators by 2010

Goal Four: Increase the high school completion rate to 90 percent by 2010.

Goal Five: Double the percentage of Hispanic Americans who earn Associate’s and Bachelor’s degrees by 2010. (Figueroa & Hernandez, 2000, p. 3)

Hispanic Education in New Mexico

Students in grades 4 and 8 took New Mexico’s first standards-based test in the
2002-2003 school year. The test is the first phase of the state’s move away from the norm-referenced CTBS tests that have been used to compare New Mexico students’ achievement against national achievement scores. The standards-based tests compared student achievement scores to the New Mexico standards.

The New Mexico Public Education Department (PED) reported approximately half of the state’s fourth and eighth graders are proficient in language arts and mathematics with minorities consistently scoring lower than the state’s White students. The PED released scores indicating 53% of fourth graders and 46% of eighth graders tested at the proficient or above level in mathematics. The results for language arts indicate 45% of fourth graders and 51% of eighth graders score proficient or above. (see Table 1).

State Education Secretary, Garcia reported, “In both mathematics and language arts, those students who are economically disadvantaged face the greatest challenges” (as cited in Contreras, 2004, p. 2). The results indicate a disparity between the scores of White students and those of most minority groups. The 51% of White students in the fourth grade who scored at the proficient level in language arts surpasses the 34% of Hispanic students who scored at that level. At the eighth grade level, 33% of Hispanic students scored proficient in mathematics compared to the 51% of White students who scored at mastery level. According to the Dropout Study (2002), consistently lower achievement scores are a contributing factor to the dropout crises among minority students.
Table 1: Language and Mathematics Achievement in State Standards-Based Tests

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Grade Four Language Arts</th>
<th>Grade Eight Language Arts</th>
<th>Grade Four Math</th>
<th>Grade Eight Math</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Advanced/Proficient</td>
<td>Advanced/Proficient</td>
<td>Advanced/Proficient</td>
<td>Advanced/Proficient</td>
</tr>
<tr>
<td>White</td>
<td>13%</td>
<td>51%</td>
<td>48%</td>
<td>15%</td>
</tr>
<tr>
<td>Black</td>
<td>4</td>
<td>35</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Hispanic</td>
<td>4</td>
<td>34</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Asian</td>
<td>11</td>
<td>50</td>
<td>27</td>
<td>25</td>
</tr>
<tr>
<td>American Indian</td>
<td>2</td>
<td>22</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>


The Dropout Crises among Minority Students in New Mexico

In a report jointly sponsored by the University of New Mexico College of Education, the New Mexico Research and Study Council, the New Mexico Coalition of School Administrators, the New Mexico School Boards Association, and the State Department of Education, researchers Kitchen and Velasquez (1999) examined dropout rates in New Mexico by ethnicity in 1995 and 1996. They found Native American and Hispanic students leave school in numbers out of proportion to other ethnic groups.

New Mexico, with 7,500 students who leave school each year, ranks third in the United States in dropout rates (Abeyta & Borgrink, 1997). Not only are Hispanic and Native American students leaving school at disturbing rates, they are dropping out earlier. Some students are dropping out as early as junior high or middle school (Kitchen & Velasquez, 2001). The dropout rate of Hispanic ninth graders in 1995-96 was eight percent compared to six percent for White students. Hispanic tenth graders dropped out...
at a rate of ten percent compared to ten percent for Native Americans, six percent for
Whites, and five percent for Asians. The dropout rate decreases for students of all ethnic
groups in their junior and senior years. In the 1998-1999 school year, nine percent of
Hispanic students registered in grades 9-12 dropped out of school before receiving their
high school diploma (Kitchen & Velasquez, 2001). That rate dropped to 6.7% during
the 2000-2001 school year, although Hispanics still had the highest dropout rate of any
ethnic group (Abeyta & Borgrink, 2002).

One issue that compounds educational failure among Hispanics is the use of
standardized tests to measure student performance. To further the national goals of
improving achievement in Hispanic students, the United States Department of
Education (2000) released an idea book to guide administrators and teachers in
designing culturally appropriate instructional programs. One targeted area is increasing
academic time by extending the school day (Funkhouser, Leighton, & Weiner, 2000).

Extended Day Programs

Extending the school day “effectively extends learning time for minority
students who require extra time to develop the academic skills necessary for them to
succeed in the regular day setting” (Funkhouser, Leighton, & Weiner, 2000, p. 46).
Abrams, et al. (1997) found Hispanic students who attend extended day programs that
focus on core curriculum subjects, such as literacy and mathematics, show significant
achievement gains. In addition to providing additional learning time, extended day
programs provide safe environments for children who would otherwise be home alone.
The dynamic of the latchkey child has been problematic in American society since women entered the work force in large numbers after World War II. According to The United States Department of Education (2000), there are in excess of 28 million school-age children who have parents working outside the home. The United States Census Bureau projected that the number of latchkey children who return to a home with no adult supervision ranges from seven million to as high as 15 million (U.S. Census Bureau, 2000). These numbers translate to 25 to 54% of children with working parents spending time alone every day. The hours immediately after school are the times when children are most likely to either be victims or victimize someone else or experiment with alcohol, sex, smoking, or illegal drugs. Adolescents who are 16 and 17 year olds are more likely to be involved in automobile accidents. Even children without adult direction who do not engage in at risk behaviors most often spend their time watching unsupervised television programming (U.S. Census Bureau, 2000). This becomes problematic with the availability of programs with graphic sexual or violent content.

Funding after school programs is an initiative of the federal government to combat the growing problem of latchkey children. These programs are designed to provide a safe, secure environment that sponsors structured educational, recreational, and enrichment activities for children from pre-school through high school. These programs are emerging as alternatives for improving students' level of academic performance (Miller, 2001). The 21st Century Community Learning Centers Initiative provides funding in all 50 states, the District of Columbia, and the majority of U.S.
territories. By the end of 2000, the initiative served “1.2 million children and 400,000 adults in 6,800 schools in almost 1,600 communities” (U.S. Department of Education, 2000, ¶5). Funding increased from $1 million in 1997 to $800 million in 2001 (Miller, 2001). The increased funding was the result of efforts by the Clinton administration to address the declining academic performance of minority students. Current federal funding allocates one billion dollars annually to subsidize extended day programs (Afterschool Alliance, 2004).

William Clinton, as then governor of Arkansas, attended President George Bush’s 1989 education summit. The current focus on standards-based education is the result of that summit. The meeting was held in Charlottesville, Virginia and attended by governors of the 50 states (Banks, 1997). According to Banks (1997), “The lack of discourse about the multiple interpretations of student performance and the realities of U.S. schools resulted in a national obsession about fixing the nation’s schools” (p. 157). This obsession was the result of the report, A Nation in Crises. The education summit included politicians, but no educators were invited to attend (Banks, 1997).

When Clinton later became President, he initiated the program known as Goals 2000 that continued the emphasis on standards. The state governors, business leaders, and Clinton joined in 1996 to deliver a statement urging educators to focus on performance and academic standards (Banks, 1997). As a result of this emphasis, the Clinton administration joined with the Charles Stewart Mott Foundation to generate thousands of after school initiatives in inner city and rural public schools over a 5-year period (Mott Foundation, 2000).
Clinton, in his speech announcing the after school grant program, said,

Increasingly, our schools are critical to bringing our communities together. We want them to serve the public not just during school hours but after hours: to function as vital community centers; places for recreation and learning; positive places where children can be when they can’t be at home and school is no longer going on; gathering places for young people and adults alike. Bringing our schools into the 21st century is a national challenge that deserves a national commitment. (Clinton, 1996, ¶3)

Clinton focused attention on the need for programs that provide access to educational opportunities not available during the regular school day. Unfortunately, due to declining revenues, numerous rural and inner city schools are abolishing art, music, and physical education programs. Because operational financial support is not available to fund these programs, the 21st CCLC program funds extended day activities that expose disadvantaged children to advantageous, varied learning experiences that are not part of the regular school day curriculum. This exposure leads to higher test scores and grades, especially for disadvantaged minority students (Hamilton & Klein, 1998). Like his predecessor, George W. Bush is continuing to focus national attention on education with the “No Child Left Behind” initiative.

No Child Left Behind

Although Clinton is credited with initiating the after school grant proposal, his successor has made education reform a focus of his administration. President George W. Bush’s highly touted message to the public, “No Child Left Behind” is the cornerstone of planned bipartisan reform of the current educational system. In addition to an emphasis on accountability systems, the Act requires states to improve the achievement status of disadvantaged students. “The purpose of this title [Title I,
SEC. 1001] is to ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments" (U.S. Department of Education, 2002b, p. 1). Recognizing the national concern about disadvantaged students' achievement, Bush’s Secretary of Education, Paige (2002), stated, “nearly 70 percent of inner city fourth graders are unable to read at a basic level on national reading tests” (¶ 27).

As a means of combating declining literacy in disadvantaged schools, Bush’s administration developed a platform for reform of current educational practice. Bush’s educational reform package includes seven performance-based criteria.

I. Improving the academic performance of disadvantaged students
II. Boosting teacher quality
III. Moving limited English proficient students to English fluency
IV. Promoting informed parental choice and innovative programs
V. Encouraging safe schools for the 21st Century
VI. Increasing funding for Impact Aid
VII. Encouraging freedom and accountability. (U.S. Department of Education, 2003a, p. 2)

Also included in the agenda for reform is an emphasis on developing methods designed to close the gap in achievement between privileged and disadvantaged students along with the guarantee of a safe environment for both students and teachers (Paige, 2001). Bush continued his support of Clinton’s after-school initiative while sustaining the nationwide focus on standards-based education that his father launched in
the late 1980s (Banks, 1997). Although extended day programs have unique cultural and curricular distinctions, effective ones do share characteristics.

*Effective Extended Day Programs*

Effective extended day programs have features in common. All share a well-defined vision and substantive purpose. Beyond the benefits to working parents, effective programs are community centers for learning. They build relationships between students, parents, and the community. “Quality after-school programs are community-driven, expanded learning opportunities that support developmentally appropriate cognitive, social, physical, and emotional outcomes. In addition, these programs offer a balanced program of academic support, arts and cultural enrichment, recreation, and nutrition” (Disney Learning Partnership, 2002, p. 1).

According to Fletcher (2001), there are nine key strategies for developing efficacious programs.

1. Create a vision that clarifies purpose and ignites passion;
2. Integrate leadership, mentorship and management;
3. Build an authentic school/after school partnership;
4. Make staff development and coaching a top priority;
5. Align after school educational activities with state standards and school-based curricula by expanding rather than extending the school day;
6. Focus on youth development and disguised learning strategies;
7. Link activities with outcomes;
8. Measure and manage results; and,
9. Build a balanced and diversified funding base to ensure program sustainability. (p. 2)
Another characteristic of effective after school programs is a focus on intensive, individualized reading instruction. President Clinton, in his State of the Union Address, called on the nation to take the steps necessary “to make sure every child can read well by the end of the third grade” (Clinton, 1997, ¶ 28). Teaching reading and utilizing effective intervention and remediation methods are timely topics for educators. The reliance of a technological society on printed material necessitates educating students to become literate citizens who can function in a dramatically changing world.

In response to concern about rising rates of illiteracy among school age children, Congress charged the Director of the National Institute of Child Health and Human Development (NICHD) and the Secretary of Education to establish a panel of national experts “to assess the status of research-based knowledge, including the effectiveness of various approaches to teaching children to read” (National Reading Panel, 2002, p. 1). The National Reading Panel (NRP) investigated alphabets including phonics instruction and phonemic awareness instruction; comprehension, including vocabulary instruction, “teacher preparation and comprehension strategies instruction; fluency; teacher education in reading instruction; and reading instruction and computer technology” (NRP, 2002, p. 3). Due to the complexity of the issue, the final report was delayed until 2002. Included in the report was the finding that there is “overwhelming evidence that systematic phonics instruction produces significant benefits for students in kindergarten through 6th grade and for children having difficulty learning to read” (Langenberg, 2000, p. 9). The panel also found that phonics instruction enhances
children's success in learning to read and that such instruction is significantly more effective than instruction that includes no phonics. The panel agreed literacy should begin in kindergarten or even before. “Children at risk of reading failure for a variety of reasons especially require direct and systematic instruction in these skills and that should be integrated fully with the full kindergarten experience” (Langenberg, 2000, p. 10). The panel did not, however, investigate issues related to learning English as a second language.

In a speech given to 21st CCLC grantees, Hunter (2001) stated that children who cannot read by the end of the third grade consistently fall behind their peers in the fourth grade. Curriculum in the primary grades (K-3) focuses on teaching children to read. In fourth grade, the dynamic shifts; instead of learning to read, children are reading to learn. A child who cannot read by the beginning of fourth grade falls behind one half-grade level each year. Without intervention, fewer than 25% of these children ever catch up to grade level (Hunter, 2001). One intervention being utilized on a national basis is extended day school, but there is debate concerning the efficacy of these programs.

*Mathematica Policy Research Report*

In a report commissioned by the United States Department of Education, Mathematica Policy Research conducted a national evaluation of quantitative and qualitative data supplied by 21st CCLC program directors, teachers, parents, principals, and students. Researchers also visited programs and observed program activities. The
research design used student comparisons to evaluate middle school after school programs (Deke, et al, 2003).

Research results include the finding that while middle school students attended voluntarily, they attended sporadically. Both students and parents reported positive views of program activities, but those views did not positively impact attendance. Students tended to attend the program less as the year progressed and there were sharp declines before and after holidays. Students who attended extended day programs showed no significant gains in achievement, although tutoring and homework help were accepted activities. There were no effects on grades in science, English, or history for program participants and comparison students. However, the report indicates students who attended showed small increases in school attendance, mathematics grades, and effort in class. Parents also reported more involvement with school-sponsored events.

Experimental designs with students randomly assigned to control and treatment groups were used to evaluate elementary programs. Centers reported improved parent involvement, improved social studies grades, but no gains in scores on a standardized reading test. Deke, et al. (2003) reported students who attended were no more likely to complete homework than those who did not, and there were no differences in interpersonal skills or personal confidence. The Mathematica research was criticized because it reported findings from first year programs that were still in the implementation stage. The programs were still small and focused on activities designed to draw participants to the programs rather than stressing academics.
Research Site Extended Day Programs

Casados (2003) reported on one site awarded a 21st Century Community Learning Centers Grant in June 2001. The program completed its second year of providing extended day services to area students during the 2002-2003 school year. This site is comprised of 15 rural villages and is isolated from any urban centers. Students are bused from as far as 55 miles to the centrally located high school. Because the district serves 600 square miles, transportation is a major issue. There were 496 students enrolled in grades kindergarten through 12 in the 2002-2003 school year. The school district serves students at five sites—two elementary schools, two middle schools, and one high school.

There were four extended day programs at the research site during the first two grant award years. One was a weeklong multicultural camp that was a collaboration with an area tribe and the 21st Century program on that reservation; the second was a 6-week summer enrichment program; the third was a 6-week credit recovery program; and the fourth was the regular after-school program.

Program Objectives.

The district-stated program objectives were to provide a safe after-school environment, tutoring and homework help, opportunities for academic enrichment, activities that enhance character building, technology training and enrichment, and healthy, varied recreational activities. The program addressed academics, recreation, and enrichment. There were consistencies in programs from one site to another;
academics were stressed at all district sites (Leyba, 2001). But there were also differences between the sites contingent upon staffing.

_Summer Programs._

The first summer program offered by the district was the week-long multicultural camp offered by the district in collaboration with another 21st Century program, an area tribal culture center, the culture committee, a community based services organization, and the Indian development organization on the reservation.

The camp began at 9:00 a.m. on June 3, 2001 when district buses transported students to the campsite. Of the 82 students ages 9 through 14 who attended the camp, 40 students were American Indian, and 42 were Hispanic students from the district. The camp emphasized respect for elders, self, others, and the earth (Casados, 2003).

The elementary component was a 6-week summer enrichment program that operated at three sites throughout the district. Students attended the program four and one-half hours per day four days per week. The two elementary schools and a previous school housed the program. All sites served students from kindergarten through grade 5. The regular instructors were non-certified staff. Local artisans provided instruction in art and traditional Spanish dancing. The county recreation department provided free lunches and access to the county swimming pool. District school buses transported students to the pool once a week for swimming lessons and recreation. District buses were also utilized for field trips.

The middle school program also operated at the three sites although in separate buildings from the elementary programs. Four district certified middle school staff
members, who rotated through the three sites, were instructors for the program. One teacher focused on healthy recreational activities, one on science, one on literacy, and one on social studies. All teachers also facilitated art and craft projects. There were also two visiting cultural instructors who taught traditional Spanish dancing and traditional Spanish art, including punched tin, retablos, carving, and clay work. The summer program culminated with an educational field trip to the Natural History Museum in the nearest large city which is over 350 miles round trip (Casados, 2003).

The high school summer program was primarily a credit recovery program with the exception of the defensive driving class. That class was offered through collaboration with the closest School of Driving (65 miles away). In addition to defensive driving, a full credit of pre-algebra, one half credit of Algebra I, one credit of government, and English I and II credits were offered. The classes were staggered so students could attend three classes per day. Instructors certified by the New Mexico State Department of Education taught all classes (Casados, 2002). The following summer’s schedule (2003) included defensive driving, English I and II, pre-algebra, Algebra I, and government. Classes were held four and one-half hours per day for six weeks (Casados, 2003).

After-school Extended Day Programs.

Elementary after-school programs began at three sites on September 23, 2001. The first year program ended on April 24, 2002 at one elementary, one middle school, the high school, and the previous school site because of the numerous field trips and school activities in May. All sites emphasized tutoring and homework help in small
group settings. All programs supported the district’s Educational Plan for Student Success (EPSS) that is a state mandated curriculum planning program (see Appendix A [Literacy], Appendix B [Mathematics], Appendix C [Technology/Maintenance]). District focus areas stressed literacy across the content areas and mathematics. A previous focus area, technology, was placed on maintenance status (Casados, 2003). Programs were offered four days per week for 2 and one-half hours at two sites and for two hours at one site (Leyba, 2001). Additionally, the district, in response to concerns about standardized test scores, focused attention on scientifically based reading instruction. Extended day staff utilized the teaching strategies implemented through the Read Well program for kindergarten, first, and second grades (Sopris West, 1998). Formula III was implemented for grades three, four, and five (Integrative Learning Systems, 2000). Linking after school activities to the regular school day curriculum was consistently emphasized.

Tutoring and homework help was addressed daily during the “power hour” facilitated by certified teachers and instructional assistants. Students who participated in power hour received academic tutoring in one-on-one or small group (one to six) settings. Instructors concentrated on individual student needs and taught to the students’ dominant learning style.

Through a collaboration with the New Mexico Endowment for the Humanities, a local storyteller told cuentos (stories) learned while growing up in rural New Mexico. She told stories in English and Spanish that focused on Hispanic and New Mexican traditions. In the spring, the daughter of a Lesotho chief who lived many years in South
Africa and in Ireland discussed the themes of religious conflict, political domination, the struggle for freedom, and the hope for reconciliation. She described the colonial disruption of traditional village life in southern Africa and the fundamental conflicts in Ireland over the past thirty years. She was one of five people to speak when Nelson Mandela returned to Cape Town after 27 years in prison.

Additionally, students were offered team sports, arts and crafts, cultural crafts, drama, theater games, technology, Karate, Yoga, science club, and library activities. The high school offered homework help and tutoring, intramural sports, a conditioning class, yearbook, business classes, small engine repair, welding, and art club.

A new program implemented at the high school during the 2002-2003 school year was the tutoring class offered before school. This class, facilitated by a certified instructor, offered tutoring in core academic classes. The class started in response to parental concern that students who participated in extra-curricular activities did not have the opportunity to receive the individualized assistance that extended day program participants were offered. The teacher who provided instruction was a mathematics teacher at the school (Casados, 2003). Attendance at these sessions averaged four to five students per session. The small pupil to teacher ratio allowed the one-on-one tutoring necessary for students to grasp complex concepts.

Summary

This chapter reviewed the literature of educational issues relevant to minority students at the national level. The condition of Hispanic education nationally and in the state of New Mexico was discussed. The next point of discussion was the federal
legislation which led to the after school initiative known as the 21st Century Community Learning Centers Grant program (21st CCLC) and the No Child Left Behind Act. A discussion of effective extended day practices was presented, as were the results of the United States Department of Education study. The study was commissioned to examine 21st CCLC program implementation to determine program impact on student achievement as measured by standardized test scores, math grades, and reading grades. Finally, educational issues affecting impoverished students who attended a small, rural public school in mountainous New Mexico and the extended day program implemented in that district were investigated.

Several important conclusions concerning minority education are evident on the basis of this review. First, equal educational opportunities do not “compensate for inequality of opportunities” (Feinberg, 1996, p. 36). This inequality perpetuates a cycle of illiteracy and poverty for children of color. Second, despite national attention on Hispanic achievement, these students are more likely to dropout of school and consistently score below their White peers on achievement tests. The 21st CCLC, a nationwide extended day program, was discussed. This nationwide initiative was designed to combat declining achievement and increasing dropout rates among disadvantaged students who attended rural and inner city schools and may be one effective means of providing the extra learning time minority students need to develop academic skills (Funkhouser, Leighton, & Weiner, 2000).

These extended day programs have unique programmatic aspects, but effective programs support the regular day academic curriculum and provide opportunities for
age "appropriate cognitive, social, physical, and emotional outcomes" (Disney Learning Partnership, 2002, p. 1). Although Congress allocates millions annually to establish and maintain extended day programs, there are concerns about the efficacy of these programs on achievement for disadvantaged students. The Mathematica Policy Research Report commissioned by Congress announced there was no important gain in achievement for students who attended extended day programs. They did find, however, improved parent involvement and improved social studies grades. Students who attended were no more likely to complete homework than those who did not, and there were no differences in interpersonal skills or personal confidence (Deke, et al, 2003). Finally, the achievement data of disadvantaged Hispanic students, who attended extended day programs in a rural school in New Mexico, were scrutinized. The subjects of the investigation were limited by isolation and poverty. Extended day programs were one aspect of the district’s efforts to combat low student achievement and provide the enrichment necessary to ameliorate the effects of inadequate funding and isolation.

These conclusions emphasize the need for research on effective educational practice for minority students. Although there is continuing controversy on the most effective means of improving achievement for disadvantaged Hispanic students, extended day programs may have a positive impact on achievement as measured by standardized test scores and teacher-assigned reading and mathematics grades.
CHAPTER III

METHODOLOGY

This chapter describes the research design. Three major areas of importance are discussed: (a) subjects and setting, (b) the design of the study, and (c) the methods of statistical analysis.

Subjects and Setting

The participants in the study were Hispanic students who attended a small, rural school district in mountainous New Mexico. Although New Mexico was not admitted to the Union as a state until 1936, most residents of the valley have inhabited the area for generations. Beck (1979) reported the name New Mexico was first used by a Spanish explorer, Antonio de Espejoto, in 1583. The name he used to describe the area north of Mexico "represented the hope of the Spaniards that this new land would be similar to Mexico itself as a source of great treasure in minerals" (Beck, 1979, p. 3).

New Mexico is the nation's fifth largest state with a land area of 121,356 acres. Geographically, the area served by the school district "lies in the western part of the southern extremity of the southern Rocky Mountain province, which is composed of complex mountains and intermountain basins" (Fenneman, 1931, p. 105). The area is temperate and semi-arid. It lies in the upper Sonoran Life Zone at 4,500 to 7,500 feet above sea level (Bailey, 1931).
The Coronado Expedition that entered the southwest in 1540 reported the first written record of the characteristics of northern New Mexico. The next recorded historical reference to the area was Onate’s expedition of 1598 (Wendorf, 1953).

In the over 500 years since Onate’s incursion into the area, New Mexico has continued to be sparsely populated. The statewide population estimate for 2001 was approximately two million residents. There were 15 persons per square mile compared to the national average of 80. One quarter of the state’s population resided in rural areas (Why Rural Matters, 2003, p. 55). The national average of persons living below the poverty rate was 12 percent while in New Mexico the number of residents living below the poverty rate was 18 percent (U.S. Census Bureau, 2000).

Setting.

The setting was a rural public school in mountainous New Mexico with a predominately Hispanic population. The population of the county in 2001 was 41,000. There were seven persons per square mile with 20 percent of residents living below the poverty level. The per capita personal income was $17,261 as compared to the national average of $21,587. There were 73% of persons who identified themselves as Hispanic or Latino compared to the 42% statewide and the 12% nationally (U.S. Census Bureau, 2000). The district student population was identified as 86% Hispanic (Davis, 2001).

The district is confronted with a problem common to many rural school districts—declining enrollment, hence, a decline in available resources to educate area students. Statewide, over 25% of rural schools have lost at least 10% of their student population since 1994 and experts expect the downward trend to continue (Rural Policy
Matters, 2000, p. 1). According to Superintendent of Schools, Valdez, the New Mexico per pupil allocation in the 2002-2003 school year was $3,035. A loss of even ten students per year reduces the district's funding formula by $30,350 or the equivalent of one teacher's salary (Valdez, personal communication, February 10, 2004). The Rural School and Community Trust (2000) released a report stating New Mexico is in urgent need of a rural education policy. The state ranks first in rates of student poverty in rural areas and third in rates of minority students who live in rural areas. Additionally, more than one-third of adults who live in rural areas have less than 12 years of formal education (The Rural School and Community Trust, 2000).

The research site high school originally housed 600 students when it was built in 1964. It served 154 in the 2002-2003 school year. The decrease in student population at the research site is primarily attributed to two factors. First, there is the decrease in family size. Families of 12 to 16 children were common two generations ago. The largest family in the area has six children, but most have two to four. The second factor is the mobility of young people who leave to find jobs in urban areas. Due to the lack of economic opportunities, they relocate to support their families. Many do return, but do so when their children are no longer part of the educational system.

**Background**

The first Hispanic residents of the valley, which constitutes the study site, were ranchers and farmers who settled on Spanish land grants. The State of New Mexico and the Federal Government own two-thirds of the mountainous land (U.S. Department of Agriculture, 1972). The research site serves approximately 600 square miles of
mountainous New Mexico. The district population is 86% Spanish speaking from 15 villages. The area's largest community with a population of 1,200 serves as the business center for the valley. There are an additional 2,300 residents in the surrounding communities (United States Census Bureau, 2000). The valley is primarily a summer tourist town, with a Scenic Railroad the major tourist attraction. Hunting, fishing, and farm/ranching are also prevalent industries. The lumber and tourist industries, which provide most of the employment in the surrounding area are seasonal, relatively low paying, and highly dependent on national economic trends.

The communities served are geographically isolated from major urban centers and the services they provide. The isolation of the communities impacts both educational and economic opportunities in the area. According to the United States Department of Agriculture eligibility report from March 2003, 75% of district students are eligible to receive free or reduced lunches. In addition to economic factors, students traditionally exhibit poor achievement on standardized tests including state mandated achievement tests and the New Mexico High School Competency Exam.

New Mexico High School Competency Exam

New Mexico is one of 27 states that requires students to pass an exit exam with a minimum score before they receive their high school diploma. High school exit exams are in response to public expectation “that each student will possess the skills to be successful at either work or postsecondary education” (State Notes, 2002, p. 1). Two states (Hawaii and Missouri) have repealed or barred exit exams while four states have variations on competency exams. Five states have provisions for honors diplomas for
students whose performance indicates mastery on skills assessments (State Notes, 2003). New Mexico’s assessment is based on a pass/fail system with a score of 175 on each subtest the minimum required to pass.

The New Mexico High School Competency Exam was first administered during the 1987-1988 school year. New Mexico initiated the competency exam to ensure a high school diploma would “indicate a student’s success in attaining mastery of the high school’s essential competencies required for graduation which emanate from the statewide content standards” (Davis, 1997, p. 24). Statewide work groups designed content standards that supported the state standards for excellence.

The district ranked in the bottom third of districts in the 1998-1999 school year when students averaged four percent below the baseline for passing all subtests in math, science, composition, language arts, reading, and social studies on their first attempt. In the 1999-2000 school year, 24% of district students scored above the state baseline on their first attempt, with the district ranking in the top third in the state that year (Davis, 2001). In the 2000-2001 school year, the most recent year statistics were available, 24% of district students scored below the baseline. The district ranked near the bottom third of the state’s 89 districts. District students scored far below the state’s average (84%) on the exam (Davis, 2001).

The State Superintendent of Public Schools reported that 18,910 students in grade 10 were assessed on the six subtests in spring 2003 (Davis, 2003). With 175 the passing score, 69% successfully passed all six subtests. Of the White students tested, 85% passed the test while only 61% of Hispanics passed the six subtests on the first
attempt. Table 2 shows the change in percentage of students passing and rank in the state for this district by year using 1996-1997 as a baseline (e.g., a rank of -1 means the district ranked one less than the rank they held in 1996-1997).

Table 2: New Mexico High School Competency Exam and District Rank

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>District Rank</td>
<td>Baseline</td>
<td>10% -20</td>
<td>4% -1</td>
<td>+2% +27</td>
<td>24% -4</td>
</tr>
<tr>
<td>below baseline</td>
<td></td>
<td></td>
<td></td>
<td>above baseline</td>
<td></td>
</tr>
</tbody>
</table>

In addition to the New Mexico High School Competency Exam, students in grades 3 through 9 are required to take the CTBS annually. The Comprehensive Test of Basic Skills (CTBS5/TerraNova Survey Plus) serves as the state’s norm-referenced test. On a norm-referenced test, students' scores are interpreted by comparing them to the performance of other students who comprise a national norming group. The test is utilized by the state department of education to obtain standardized student achievement data for statewide comparisons. Students were tested in the major content areas—reading/language arts, social studies, science, and mathematics. When compared with the other 89 New Mexico school districts, the district’s median percentile rank scores were near the middle of all school districts at the third grade level and in the top third of districts at the fourth grade and eighth grade levels (Davis, 2001).
Another issue that impacts academic achievement is the proportion of minority language learners in the district. The Hispanic/Latino student population is 86%, an indicator of the high percentage of minority language learners (80%). The six percent discrepancy in numbers is associated with the dual ethnicities of some families. Those families are English language dominant in the home, although the children are identified as Hispanic by the school district.

Another norm-referenced test New Mexico administers is the American College Test (ACT), which is utilized by colleges and universities across the nation as a college entrance exam. Scores of the ACT do not represent New Mexico high school students as a whole; however, they are reflective of those students in the Midwest who are interested in pursuing higher education. District students (11\textsuperscript{th} graders) who took the test in spring 1997 scored an average 17 points with a statewide rank near the bottom of all districts. In 1998, students scored an average 19 points, the highest the district has ever scored. Those who completed the test in 1999 scored an average 17 points on the test with a district rank in the lowest quarter statewide. In spring 2000, students scored an average 18 points and ranked near the middle of all districts. The average score was 19 points in spring 2001 when the district again ranked near the middle. These low scores are correlated with the district’s low number of college graduates. District students have never scored in the upper 25% statewide. Although 40% of graduating seniors in 2001 applied to 4-year institutions, only 20% historically complete the four years (Davis, 2001). Table 3 shows the mean ACT score of district students and the respective quartile ranking from 1996-1997 through 2000-2001.
Table 3: ACT Scores and State Quartile Rankings

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Score Quartile</td>
<td>17 4^{th}</td>
<td>19 2^{nd}</td>
<td>17 4^{th}</td>
<td>18 2^{nd}</td>
<td>18 2^{nd}</td>
</tr>
</tbody>
</table>

The standardized test scores, teacher-assigned mathematics and reading grades of Hispanic third, fourth, and fifth grade students who participated in extended day programs a minimum 30 days, as per federal guidelines, were compared to the standardized test scores, teacher-assigned mathematics and reading grades of non-participants. The second semester 2002 teacher-assigned mathematics and reading grades were compared to the second semester 2003 mathematics and reading grades for both the elementary and high school treatment groups. Experimental importance and consistency for treatment and comparison group CTBS scores and teacher-assigned grades was computed using an independent two-sample, pooled variance t-test. Pre- and posttest scores were computed using a correlated t-test. Reading grades for grades 10 and 11 are the grades they received for sophomore language arts classes. These grades are referred to as reading grades for consistency in this investigation.

Teacher-assigned grades were based on a grading scale of zero to 100. Students in grades 3, 4, and 5 had different teachers at two schools with different administrators. Because of the small student population and class size, students in grades 10 and 11 had the same teacher for mathematics and the same teacher for language arts.
Participants in the study attended extended day programs at two elementary schools and one high school at the research site. The two elementary schools had a combined enrollment of 199 students in grades kindergarten through 5 in the 2002-2003 school year (according to the district’s 120th day state mandated Accountability Data System (ADS) report). There were 101 students in grades 3, 4, and 5.

The 38 regular attendees were a “naturally formed intact group” (Wiersma, 1995, p. 139). When regular attendees were identified, all non-Hispanic students (as indicated on the district ADS report) were eliminated as were those who did not have CTBS scores in mathematics and reading, and teacher-assigned mathematics and reading grades for both the 2001-2002 school year and the 2002-2003 school year. This process resulted in 38 students who comprised the treatment group. The comparison group (N=36) students who were not regular participants were gathered using the same methodology.

The second research group was comprised of the research site’s 10th and 11th grade Hispanic students. As of May 2, 2003, 154 students attended the high school in grades 9-12. There were 52 sophomores and 33 juniors who completed the CTBS, the New Mexico High School Competency Exam, and had teacher-assigned grades in both mathematics and reading. The treatment group (N=34) and comparison group (N=32) were gathered by examining sign in sheets maintained by all 21st CCLC instructors, eliminating non-Hispanic students, those who did not complete the six subtests of the New Mexico High School Competency Exam, or those who did not have teacher-assigned grades in both mathematics and reading.
All information was kept strictly confidential. This included student records, grades, standardized test scores, and interview responses. Student names did not appear on any records, other than the signed consent forms. The signed consent forms and the interview responses were assigned identification numbers, and all data identified only through these numbers.

**Methodology**

This research was a mixed methodology that analyzed both quantitative and qualitative data. While "qualitative research describes phenomena in words instead of numbers or measures, quantitative research describes phenomena in numbers and measures instead of words" (Krathwohl, 1993, p. 740). Drew, Hardman, and Hart (1996) contend this methodology “is becoming increasingly popular in order to effectively answer complex research questions arising in natural settings” (pp. 30-31).

This research was conducted during the 2001-2002, 2002-2003, and 2003-2004 school years. The research was an examination of the relationship between participation in extended day programs, achievement scores, and teacher-assigned mathematics and reading grades among Hispanic students who regularly participated in extended day programs in a small, rural public school in mountainous New Mexico. Because the subjects were a “naturally formed intact group” (Wiersma, 1995, p. 139), the design was quasi-experimental, comparing the CTBS scores, teacher-assigned mathematics and reading grades of students who regularly attended extended day programs and students who did not attend. The pass/fail rate for the New Mexico High School Competency Exam for the treatment and comparison groups was examined. The fixed student
population and small number of subjects eliminated the possibility of random assignment.

Additionally, extended day program participants were interviewed utilizing a structured open-ended question approach. The protocols were developed by the investigator and were specific to student participation in extended day programs. An impartial staff member at the research site conducted the interviews.

The quasi-experimental design was dictated by the paucity of students who attended the schools being investigated. That limited number was further reduced by restricting the treatment groups to students who participated in extended day programs. Due to the quasi-experimental research design, the research is limited when generalizing results. The dependent variables were the CTBS scores and teacher-assigned mathematics and reading grades. The independent variable was regular participation (as per federal regulations) in extended day programs. At the high school level, results of the New Mexico High School Competency Exam for the treatment group and control groups were also examined. Data were analyzed using an independent two-sample, pooled variance t-test to determine experimental consistency. The alpha level for consistency, for the purposes of this study, was set at .05.

*Hypotheses*

The null hypotheses were:

Hypothesis I: There is no experimentally important or consistent difference between the mean normal curve equivalent CTBS reading scores of extended day program participants and non-participants. $H_0$: $\mu_1 = \mu_2$. 
Hypothesis II: There is no experimentally important or consistent difference between the mean normal curve equivalent CTBS mathematics scores of extended day program participants and non-participants. $H_{o2}: \mu_3 = \mu_4$.

Hypothesis III: There is no experimentally important or consistent difference between the pre- and posttest mean normal curve equivalent CTBS reading scores of extended day program participants and non-participants. $H_{o5}: \mu_5 = \mu_6$.

Hypothesis IV: There is no experimentally important or consistent difference between the pre- and posttest mean normal curve equivalent CTBS mathematics scores of students who participate in extended day programs and those who do not. $H_{o7}: \mu_7 = \mu_8$.

Hypothesis V: There is no experimentally important or consistent difference between the mean annual second semester teacher-assigned reading grades of extended day program participants and non-participants. $H_{o9}: \mu_9 = \mu_{10}$.

Hypothesis VI: There is no experimentally important or consistent difference between the mean annual second semester teacher-assigned mathematics grades of extended day program participants and non-participants. $H_{o11}: \mu_{11} = \mu_{12}$.

Experimentally important or consistent difference, for the purposes of this study, was defined as a gain of five NCEs on the CTBS or five points on teacher-assigned mathematics or reading grades. Consistency is set at the $\alpha = .05$ level and between group comparability was assured by comparing groups that were sufficiently similar (RMC Research Corporation).
Procedures

Quantitative research were based on the data collected for the Annual Performance Report required by all grantees of 21st Century Community Learning Centers Grants, data collected for the New Mexico State Department of Education Accountability Report, The New Mexico High School Competency Exam, attendance records for participants, and academic records provided by the school district. Experimental importance and consistency for treatment and comparison group CTBS scores and teacher-assigned grades was computed using an independent two-sample, pooled variance t-test. Pre- and posttest scores were computed using a correlated t-test. Comparisons were made for the grades 3-5 and grades 10-11 treatment groups to determine if being eligible for free or reduced lunch, being identified as Limited English Proficient (LEP) or being male or female impacted average CTBS scores in mathematics or reading.

Qualitative data was based on protocols developed by the researcher. The protocols were a series of 16 structured open-ended questions specific to participation in extended day programs. The questions were carefully prepared to minimize variations in interpretation and be as neutral as possible. Interview responses were kept strictly confidential with students assigned a pseudonym for reporting purposes. Signed parental consent forms were kept on file. Interviews were tape-recorded, and interviewees informed that their participation was voluntary and they had the option to terminate the interview at any time. Interviews required approximately 20 minutes, and students were informed how to contact the interviewer or the investigator after the
interview if they choose to do so. Students were informed at the time of consent that the purpose of the interview process was to gather information on the extended day programs they attended.

Six purposefully selected students at the secondary level who regularly participated in extended day programs were interviewed, two who increased their overall achievement, two who showed no important change, and two who showed no change or a negative change in overall achievement. Additionally, six students in grades 2 through 5 were interviewed utilizing the same selection criteria.

Protocols
The protocols included the following:

(Possible prompts follow)

1. Why do you participate in extended day programs?
   a. Do you attend because you want to go?
   b. Do you attend because your parents want you to go?
   c. Do you attend because a counselor, other adult, or a teacher wants you to go?

2. How did you spend your time after school and in summers before you went to extended day programs?
   a. What differences do you see in yourself because of the extended day program?
   b. Can you suggest something about the program that could be improved?
3. How many hours a day do you watch television?

4. How many hours a day do you spend at home alone after school before participating in extended day programs?

5. What activities do you participate in when you attend extended day programs?

6. What is your favorite subject? Why?

7. Has your attitude toward school changed since you started to attend extended day programs? How?

8. How confident do you feel about your schoolwork? Do you feel more or less confident than a couple years ago? Why?

9. Do you feel more confident solving math problems?

10. Do you feel more confident as a reader?

11. When did you last read for fun?

12. How much time each day do you spend reading for fun?

13. How often do you complete the homework your regular day teacher(s) assign(s)?

14. How often do your parents help you with your homework?

15. Do you feel more confident now over previous years when taking the required CTBS tests? Why?

16. What would you like us to know that we may not have asked you?

The counselor at the district high school conducted formal interviews. She is a native who was educated in the district. She left the area to receive both bachelor’s and
master’s degrees. She returned to work as a teacher with the school district and has been the high school counselor for 14 years. She knew area students, their families, and the family histories. She met regularly with high school students and was frequently present at the middle and elementary schools; thus, her presence was not a confounding factor in the research. All interviews were conducted in the school libraries, so students did not feel anxious or intimidated by unfamiliar environments. Because they had previously signed consent forms, students knew the purpose of the interviews when they met with the counselor. The investigator conducted informal interviews to gain additional input on student responses. These interviews took place in the school libraries. No other individuals were present at the time of the interviews.

Summary

This chapter described aspects of design: (a) subjects and setting, (b) the design of the study, and (c) methods of data analysis. The purpose of this research was not to evaluate the extended day program in one public school, but, rather, to seek to determine if participation in extended day programs in one school with a high Hispanic enrollment was correlated to standardized test scores and teacher-assigned mathematics and reading grades of students in that school. The larger question was to determine if extended day programs have a positive impact on achievement in at-risk Hispanic students who attended a rural, impoverished public school. An analysis of findings is presented and discussed in Chapter IV.
CHAPTER IV
PRESENTATION AND ANALYSIS OF THE DATA

Plan of Data Treatment

The purposes of this chapter are to (a) outline the method of presentation to be utilized, (b) discuss analyses of student achievement, (c) report results of the tests of the hypotheses, and (d) discuss the analyses of findings.

The CTBS scores reported are the results of state mandated testing that was required statewide in March. The results for the March 2002 and 2003 tests are reported. The test was the second edition of the TerraNova and had four primary components: plus tests, batteries, surveys, and multiple assessments. According to the test publisher, McGraw-Hill (2002), the components were interrelated and provided norm-referenced and criterion-referenced information. Additionally, the battery, multiple assessments, and survey components provided standards-based information. The components were created to measure skills, concepts, and processes taught nationwide. "The content areas measured in the Survey, Complete Battery, and Multiple Assessment components are integrated reading and language arts (with reading and language scores reported separately), mathematics, science, and social studies" (McGraw-Hill, 2002, p. 3). Test makers contend test responses, whether they are constructed-response or selected-response "are classified to reflect educational objectives commonly found in state, district, and diocesan curriculum guides; in major
textbooks, basal series, and instructional programs; and in national standards publications” (McGraw-Hill, 2002, p. 4).

There were 12 levels of the test—one for each grade. Although the state of New Mexico requires testing grades 3 through 9 on an annual basis, the research site tested all students in grades K-11 each year. The results of the mathematics and reading subtests for grades 3 through 5 and grades 10 and 11 are reported in this chapter.

Subjects.

The research examined four student groups. All students were identified by the school district as Hispanic in the state Accountability Data System (ADS). The first group (elementary treatment group, N=38) was comprised of elementary students in grades 3, 4, and 5 who were regular participants in extended day programs. The second group (elementary comparison group, N=36) included students who were non-participants. The third group (high school treatment group, N=34) was composed of the 10th and 11th grade students who were regular attendees of extended day programs, and the fourth group (high school comparison group, N=32) was the 10th and 11th grade students who were non-participants.

Table 4 provides information on the characteristics of the four groups including their grade level, whether they were eligible to receive free or reduced lunch, gender, their designation as LEP, and whether they received special education services.

t-tests of Experimental Consistency

Tables 5-7 address the experimental consistency of the research hypotheses. Hypotheses I and II state that: There is no experimentally important or consistent
<table>
<thead>
<tr>
<th>Student Groups</th>
<th>Free/Reduced</th>
<th>Gender</th>
<th>SPED</th>
<th>LEP</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Elementary Grades 3-5</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment Group (38)</td>
<td>31</td>
<td>19 Females</td>
<td>10</td>
<td>31</td>
<td>8-grade 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19 Males</td>
<td></td>
<td></td>
<td>18-grade 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12-grade 5</td>
</tr>
<tr>
<td>Comparison Group (36)</td>
<td>31</td>
<td>18 Females</td>
<td>2</td>
<td>22</td>
<td>10-grade 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18 Males</td>
<td></td>
<td></td>
<td>14-grade 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12-grade 5</td>
</tr>
<tr>
<td><strong>High School Grades 10-11</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment Group (34)</td>
<td>25</td>
<td>20 Females</td>
<td>2</td>
<td>20</td>
<td>20-Grade 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14 Males</td>
<td></td>
<td></td>
<td>14-Grade 11</td>
</tr>
<tr>
<td>Comparison Group (32)</td>
<td>23</td>
<td>11 Females</td>
<td>3</td>
<td>21</td>
<td>12-Grade 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21 Males</td>
<td></td>
<td></td>
<td>20-Grade 11</td>
</tr>
</tbody>
</table>

difference at or above the .05 confidence level between the mean normal curve equivalent reading and mathematics scores of extended day program participants and non-participants.

There was no experimentally consistent difference between the mean normal curve equivalent reading and mathematics scores of the grades 3-5 treatment and comparison groups as demonstrated by a level of significance of .05. The mean NCE difference in reading showed a difference of 5 normal curve equivalents. However, the level of significance of .07 was not experimentally consistent above the .05 level of confidence leading to failure to reject Hypothesis I.
Table 5: t-test Results for Treatment and Comparison Groups on the CTBS for Elementary and High School Reading and Mathematics

<table>
<thead>
<tr>
<th>3-5 Reading</th>
<th>NCE Mean</th>
<th>Mean NCE Difference</th>
<th>P-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Group</td>
<td>38</td>
<td>53</td>
<td>5</td>
</tr>
<tr>
<td>Comparison Group</td>
<td>36</td>
<td>48</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3-5 Mathematics</th>
<th>NCE Mean</th>
<th>Mean NCE Difference</th>
<th>P-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Group</td>
<td>38</td>
<td>54</td>
<td>5</td>
</tr>
<tr>
<td>Comparison Group</td>
<td>36</td>
<td>49</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10-11 Reading</th>
<th>NCE Mean</th>
<th>Mean NCE Difference</th>
<th>P-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Group</td>
<td>34</td>
<td>56</td>
<td>4</td>
</tr>
<tr>
<td>Comparison Group</td>
<td>32</td>
<td>52</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10-11 Mathematics</th>
<th>NCE Mean</th>
<th>Mean NCE Difference</th>
<th>P-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment Group</td>
<td>34</td>
<td>53</td>
<td>8</td>
</tr>
<tr>
<td>Comparison Group</td>
<td>32</td>
<td>45</td>
<td>8</td>
</tr>
</tbody>
</table>

* Indicates a statistically significant difference at the .05 level of confidence.

Also in reference to Table 5, the treatment group mathematics NCE mean of 54 compared to the comparison group mean of 49 revealed a mean NCE difference of 5 with a level of significance of .02. This level of significance was experimentally consistent above the .05 level of confidence leading to rejection of Hypothesis II.

The grades 10 and 11 treatment group mean normal curve equivalent reading scores of 56 indicated a difference of 4 when compared to the comparison group mean scores of 52. This difference was not experimentally consistent above the .05 level of confidence, leading to a failure to reject Hypothesis I.

The mathematics normal curve equivalent mean scores of the grades 10 and 11 treatment group of 53 compared to the comparison group’s scores of 45 indicated a
mean NCE difference of 8 which was experimentally consistent at the .05 level of confidence. This led to rejection of Hypothesis II.

Table 6 shows the t-test results on the reading and mathematics scores for the CTBS Terra Nova academic achievement test administered during March 2002 (pretest) and March 2003 (posttest) for the treatment groups in grades 3-5 and grades 10-11.

Hypothesis III stated that: There is no experimentally significant or consistent difference at the .05 level of confidence between the pre-and posttest normal curve equivalent reading scores of extended day program participants' 03/02 pre-test scores when compared to their 03/03 posttest scores.

Table 6: t-test Results for Extended Day Program Participants on the CTBS
Pre-test 3/02 and Posttest 3/03 in Reading and Mathematics

<table>
<thead>
<tr>
<th>Grade</th>
<th>N</th>
<th>NCE Mean</th>
<th>Mean NCE Difference</th>
<th>P-values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grades 3-5</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading</td>
<td>38</td>
<td>50 (pre)</td>
<td>53 (post)</td>
<td>+3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>38</td>
<td>49 (pre)</td>
<td>54 (post)</td>
<td>+5</td>
</tr>
<tr>
<td><strong>Grades 10-11</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading</td>
<td>34</td>
<td>52 (pre)</td>
<td>51 (post)</td>
<td>-1</td>
</tr>
<tr>
<td>Mathematics</td>
<td>34</td>
<td>48 (pre)</td>
<td>45 (post)</td>
<td>-3</td>
</tr>
</tbody>
</table>

* Indicates an experimentally consistent gain greater than the .05 level of confidence.
** Indicates an experimentally consistent loss greater than the .05 level of confidence.
Pre- and posttest reading scores for 38 students in grades 3-5 revealed a gain of 3 normal curve equivalents. However, the level of significance of .07 was not experimentally consistent at or above the .05 level of confidence leading to failure to reject Hypothesis III.

Mean pre- and posttest reading scores for 34 students in grades 10-11 revealed a loss of 1 normal curve equivalents. The level of significance of .31 was not experimentally consistent at or above the .05 level of confidence leading to failure to reject Hypothesis III.

Hypothesis IV stated that: There is no experimentally significant or consistent difference at the .05 level of confidence between the mean pre- and posttest mathematics scores of after school program participants and non-participants. Referring to Table 6, it can be seen that an experimentally consistent gain of 5 normal curve equivalents was attained on the mathematics subtest for students in grades 3, 4, and 5. This reveals a significant gain at the .01 level of confidence; therefore, Hypothesis IV was rejected.

Pre- and posttest mathematics scores for 34 students in the grades 10-11 treatment group revealed a loss of 3 normal curve equivalents. The level of significance of .05 was experimentally consistent at or above the .05 level of confidence leading to failure to reject Hypothesis III.

Hypothesis V and VI stated that: There is no experimentally significant or consistent difference between the mean annual second semester teacher-assigned
reading and mathematics grades for extended day program participants and non-participants. Referring to Table 7, it can be seen that there was an experimentally consistent difference between the teacher-assigned reading scores of the grades 10-11 treatment and comparison group students. The treatment group attained average assigned scores of 89 and the comparison group received assigned average scores of 81 yielding an experimentally consistent level of .03. Therefore, Hypothesis VI was rejected for the assigned reading scores for grades 10-11.

Table 7: t-test Results for Teacher-assigned Grades in Reading and Mathematics from the Second Semester 2002-03 School Year

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Mean Grade Difference</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-5 Reading</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment Group</td>
<td>38</td>
<td>88</td>
<td>-1</td>
<td>.35</td>
</tr>
<tr>
<td>Comparison Group</td>
<td>36</td>
<td>89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-5 Mathematics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment Group</td>
<td>38</td>
<td>82</td>
<td>-3</td>
<td>.33</td>
</tr>
<tr>
<td>Comparison Group</td>
<td>36</td>
<td>85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-11 Reading</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment Group</td>
<td>34</td>
<td>89</td>
<td>8</td>
<td>.03*</td>
</tr>
<tr>
<td>Comparison Group</td>
<td>32</td>
<td>81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-11 Mathematics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment Group</td>
<td>34</td>
<td>75</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Comparison Group</td>
<td>32</td>
<td>75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Indicates an experimentally consistent difference greater than the .05 level of confidence.
New Mexico High School Competency Exam Results

The scores for the state mandated high school exit exam for the treatment group and comparison group are reported in this section. There were 85 students in grades 10 and 11 who completed the six subtests of the New Mexico High School Competency Exam in spring 2002 and spring 2003. Of those 85 students, 34 students were in the treatment group, and 32 students were in the comparison group.

The exam is required of all 10th grade students in the state. Testing takes place over two days in February each year. Students have one opportunity to take the test in the 10th grade, another chance in 11th, and two opportunities in their 12th grade year. All student must successfully pass all subtests to receive a high school diploma (Davis, 2001).

There were six subtests included in the exam. The first was reading, which included questions on responding to text, literature, culture, language, and use of information. The second subtest was language arts including questions pertaining to the purposes of language, conventions, and locating and using information. The third subtest was composition, which required students to compose an essay utilizing appropriate writing processes including organization, topic development, paragraph construction, structure, spelling, and development. The fourth subtest was mathematics, which included questions on problem solving, mathematical ability, mathematics reasoning, and mathematics communication. The fifth subtest was science with questions focusing on energy, structure and scale, systems, process skills, real world
problems, balance and change, and research and study skills. The final subtest was social studies, which required knowledge in geographic understanding, sociopolitical understanding, economic literacy, democratic principles, thinking and deciding skills, historical connections, worldwide relations, and United States and New Mexico history. Questions were in multiple-choice format with the exception of the composition subtest. That section required students to write an essay that was graded by a panel of certified English teachers. The state required a minimum score of 175 on all subtests to pass the exam (NMHSCE, 2003).

The results of the test for the treatment group and comparison group are reported in Figure 1. For the first subtest, reading, 100% of the treatment group passed with a minimum score of 175 while 94% of the comparison group passed. On the second subtest, language arts, 97% of the treatment group passed while 88% of the comparison group passed. On the third subtest, composition, 100% of the treatment group passed while 97% of the comparison group passed. On the fourth subtest, mathematics, 88% of the treatment group passed with 81% of the comparison group passing. For the fifth subtest in science, 88% of the treatment group passed while only 69% of the comparison group passed. For the final subtest, social studies, the treatment group had a passing rate of 97%, while the comparison group had a passing rate of 75%.

Treatment and Comparison Group Relationships

Comparisons were made for the grades 3-5 and grades 10-11 treatment and comparison groups to determine if eligibility for free or reduced lunch, identification as Limited English Proficient (LEP), or gender impacted mean CTBS scores in
mathematics or reading. Figure 2 shows the results from Grades 3-5 and Figure 3 shows Grades 10-11. The mean mathematics and reading scores of students who were eligible for free or reduced lunch and those who were not eligible were identical for the grades 3-5 and grades 10-11 treatment groups, as were the comparison group reading scores for grades 3-5. Students in the grades 10-11 comparison group who qualified for free or reduced lunches had mean scores of 46 while students who did not qualify had mean
scores of 47. In grades 3-5, treatment group students who were recognized by the
district as LEP had mean reading scores of 49, while non-LEP students had mean scores
of 68. Comparison group students recognized as LEP had mean reading scores of 51
while non-LEP students had mean scores of 62.

Figure 2. Comparisons by Characteristics (Free/Reduced Lunch, English Language
Proficiency, and Gender) of Treatment and Comparison Groups on CTBS
Scores in Reading and Mathematics for Grades 3-5

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Figure 3. Comparisons by Characteristics (Free/Reduced Lunch, English Language Proficiency, and Gender) of Treatment and Comparison Groups on CTBS Scores in Reading and Mathematics for Grades 10-11

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
LEP students in grades 3-5 had mean mathematics scores of 58, while non-LEP students had mean scores of 62. LEP students in the comparison group had mean mathematics scores of 49, while non-LEP students had mean scores of 69.

Females in the grades 3-5 treatment group had mean reading scores of 55 compared to males' mean reading scores of 51. However, females in the comparison group had mean scores (47) equal to those of males in the group.

In grades 10-11, LEP students in the treatment group had mean reading scores of 48 while non-LEP students had mean reading scores of 62. The comparison group mean scores for LEP students was 45 while non-LEP students had mean scores of 52.

The mean mathematics scores of LEP students in the treatment group was 58 while the mean scores for non-LEP students was 62. LEP students in the comparison group had mean scores of 37 compared to the non-LEP students' mean scores of 61.

The mean mathematics score for females in the treatment group was 54 compared to the males' mean score of 49. Males in the comparison group did, however, outscore females with mean scores of 48 compared to mean scores of 39.

**Qualitative Data**

To achieve the goal of rich description that tells the story, protocols were developed by the researcher. The interview questions required structured fixed responses. The 12 interviewees were asked the same 16 questions. The interviewer was provided prompts to assist students with their answers. Six purposefully selected students at the secondary level who participated in extended day programs were interviewed, two who increased their overall achievement, two who showed no
important change, and two who showed no change or a negative change in overall achievement. Additionally, six students in grades 3 through 5 were interviewed utilizing the same selection criteria. The high school guidance counselor conducted the student interviews in the library of the respective schools students attended. The investigator conducted informal interviews to gain further insight into student responses.

The protocols were a series of 16 structured open-ended questions specific to participation in extended day programs. Student responses were discussed separately for high school and elementary students. Tables 8 and 9 describe the students interviewed including grade, gender, whether they are Limited English Proficient (LEP), gains and losses in CTBS scores, and gains and losses in teacher-assigned reading and mathematics grades. To determine changes in achievement, CTBS reading and mathematics NCEs for the 2001-2002 school year were subtracted from the respective NCEs for the 2002-2003 school year. Teacher-assigned grades in reading and mathematics for both semesters of school year 2001-2002 were subtracted from reading and mathematics grades for both semesters of the 2002-2003 school year. Students were assigned traditional Hispanic pseudonyms to protect their identities.

Referring to Table 8, there were three female and three male participants. All had participated in extended day programs for two years. There were three third grade students, two in fourth, and one in fifth grade. All but Arianna were recognized by the district as LEP. Arianna is a child with dual ethnicities. Her mother is White and her father Hispanic. English is the dominant language in the home, but all her family members speak fluent Spanish.
Table 8: Grades 3-5 Gain/Loss on CTBS Scores and Reading and Mathematics

Teacher-assigned Grades from 2001 to 2003

<table>
<thead>
<tr>
<th>Student</th>
<th>Grade</th>
<th>Gender</th>
<th>LEP</th>
<th>CTBS Scores</th>
<th>Loss/Gain</th>
<th>Grades</th>
<th>Loss/Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cody</td>
<td>4</td>
<td>M</td>
<td>X</td>
<td>Reading</td>
<td>+6 Gain</td>
<td>Reading</td>
<td>-4 Loss</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mathematics</td>
<td>+12 Gain</td>
<td>Mathematics</td>
<td>-3 Loss</td>
</tr>
<tr>
<td>Raquel</td>
<td>4</td>
<td>F</td>
<td>X</td>
<td>Reading</td>
<td>+7 Gain</td>
<td>Reading</td>
<td>-1 Loss</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mathematics</td>
<td>+6 Gain</td>
<td>Mathematics</td>
<td>-4 Loss</td>
</tr>
<tr>
<td>Arianna</td>
<td>3</td>
<td>F</td>
<td></td>
<td>Reading</td>
<td>-12 Loss</td>
<td>Reading</td>
<td>+3 Gain</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mathematics</td>
<td>+34 Gain</td>
<td>Mathematics</td>
<td>+15 Gain</td>
</tr>
<tr>
<td>Tirzio</td>
<td>3</td>
<td>M</td>
<td>X</td>
<td>Reading</td>
<td>+23 Gain</td>
<td>Reading</td>
<td>+6 Gain</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mathematics</td>
<td>+6 Gain</td>
<td>Mathematics</td>
<td>+4 Gain</td>
</tr>
<tr>
<td>Estevan</td>
<td>3</td>
<td>M</td>
<td>X</td>
<td>Reading</td>
<td>+4 Gain</td>
<td>Reading</td>
<td>-11 Loss</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mathematics</td>
<td>-8 Loss</td>
<td>Mathematics</td>
<td>+15 Gain</td>
</tr>
<tr>
<td>Leila</td>
<td>5</td>
<td>F</td>
<td>X</td>
<td>Reading</td>
<td>+23 Gain</td>
<td>Reading</td>
<td>+13 Gain</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mathematics</td>
<td>+7 Gain</td>
<td>Mathematics</td>
<td>-2 Loss</td>
</tr>
</tbody>
</table>

Cody showed gains of six NCEs in reading and 12 in mathematics. He had a loss of four points in teacher-assigned reading grades and a loss of seven points in mathematics. Cody was in the gifted program through the district, but also received special education services for dyslexia. He read frequently using books on tape to aid him with his visual recognition difficulties. He played the violin and preferred to listen to classical music. The family lived on a ranch with lambs, cattle, and horses. He drove the farm truck for the past two summers to help pick up hay.

Raquel gained seven NCEs in reading and six in mathematics. She had a loss of three points in teacher-assigned reading grades and a loss of one point in mathematics. Raquel was also in the gifted program and maintained an ‘A’ average in all her classes. She listed reading as a favorite activity along with basketball and riding horses.
Arianna lost 12 NCEs in reading, but gained 34 in mathematics. She had a decrease in her teacher-assigned reading grade of two points and a loss of four points in mathematics. She also lived on the family ranch and was practicing to be a barrel racer.

Tirzio showed an increase of 23 NCEs in reading and six in mathematics. He gained six points on his teacher-assigned reading grade and decreased his mathematics grade by three points. Tirzio was in the gifted program, but also received special education services for a specific learning disability. His interests included drawing, cooking, and working with the family horses. He was the one of only three students of divorced parents, although his mother is now remarried.

Estevan showed a gain of four NCEs in reading, a loss of eight in mathematics and increased his teacher-assigned reading grade by 13 points. However, his mathematics grade did decrease by two points. Estevan enjoyed acting, basketball, and working in the family hardware store. He was the only elementary student who did not live on a farm or ranch.

Leila showed an increase of 23 NCEs in reading, seven in mathematics, increased her teacher-assigned grade in reading by thirteen points and decreased her mathematics grade by two points. She was interested in a career in business because she loved working on computers. She was also active in sports.

*Elementary Interview Responses*

The responses of elementary students in grades 3-5 are reported in this section. Five of the six elementary students who participated reported they attended the extended day program because they wanted to attend. Tirzio said he attended, "because
my mom and dad want me to go." He elaborated by saying, "I have a lot of chores to
do at home and my parents want me to get my homework done, so I can do my chores."
When the investigator asked him if he liked going to the program, he answered, "Yes, I
love to go. All my best friends are there."

In response to the question about how students spent their time after school and
in the summer before they attended extended day programs, all six students reported
they went home after school. Three students said they attended the county recreation
program in the summer. Arianna "played with my friends and read books, and rode
horses, and helped my mom, and stuff like that." Cody worked with his farm animals
and "was real busy with 4-H projects. A calf takes a lot of time." Estevan "played
basketball with my brother and my friends or watched it on TV." In response to the
prompt, "What differences do you see in yourself because of extended day programs?"
only Cody felt he was more confident. When the investigator asked Tirzio why he did
not feel more confident, he responded, "I don’t know what that means." When the
investigator defined the word for him, he said, "I always felt good about myself. Why
would that make me feel better? But, I do get my homework done all the time now and
it’s mostly right."

In response to the question about how much time per day they spent watching
television, all the elementary students reported watching television at least one hour or
more per day. Tirzio reported watching the longest and said, "I watch all the time, at
least two hours a day." Cody watched the least because his parents allowed him to
watch one program per night.
When asked how many hours a day they spent alone before they attended the extended day program, only Cody and Arianna said they were allowed to stay home alone. Cody said he was alone one hour per day, and Arianna said she was home only one half hour before her mother came home. All the elementary students said they worked on homework when asked what activities they participated in during the extended day program. Four students also expressed their interest in basketball, and Arianna and Tirzio liked Yoga. Arianna liked Yoga because “It makes me healthy, and I can stretch good for cheerleading.” Tirzio, Estevan, and Leila also said art was one of the activities they attended. Leila said, “I like to draw, but my teachers tell us not to doodle—to do our work. Ms. S lets us draw and shows us how to draw things that look real.” Tirzio admitted, “Mrs. B has to help me with reading sometimes, but I can draw by myself.”

The favorite subject for three students was science. Cody chose “Science because we get to do cool experiments in Mrs. A’s class. And I did a great project for science fair this year. I won, you know.” Tirzio also chose science because, “We do a lot of fun activities.” Raquel and Arianna liked mathematics. Raquel commented, “I like math because I want to be a veterinarian and to be one, I have to know a lot of math.” Estevan said, “I like P.E. because I’m good at it. I always get good grades in P.E.” Leila chose “History because it talks a lot about facts, and I’ve learned about what happened before.”

When asked if their attitude toward school had changed since they had been attending extended day programs, Cody and Arianna felt there had been no change. The
other four students expressed the opinion they had experienced positive changes with Estevan saying, “Yes, my attitude is much better. Because I get my homework done, I am starting to feel a lot better about my work.” Four students said they felt more confident about their schoolwork because they had teachers helping them get their homework completed. Leila remarked, “Much more because I work more and study. I’m more focused, and Mrs. A makes sure I get my homework done.” Cody and Raquel said they felt about the same.

All six elementary students responded that they felt more confident solving math problems and felt more confident as readers. Five of six students said they read for fun the day before, but Arianna reported, “I’ve been real busy, but a couple days ago [I read].” The students reported they read for fun each day from a minimum of 30 minutes for Estevan to at least two hours for Cody. All students also responded that they completed their assigned homework everyday. Four students said they did their homework at the after school program with no parental involvement. Raquel and Arianna said their parents helped them only when they needed it and asked for assistance.

All the elementary students said they felt more confident now over previous years when taking the required CTBS tests. When asked why, Raquel said the tests were easier, and Estevan said, “Yes, because the after school program showed me different tricks to solving math problems, and the teachers show us how to improve our grades.” Cody said, “Yes, because the CTBS test has what we already learned.” Leila commented that she felt more confident “because I’ve taken it before, and they give
questions that they’ve asked in the past.” When asked if there was anything they would like the interviewer to know that had not been asked, none of the students had any suggestions.

*Grades 10-11 Student Characteristics*

The high school counselor interviewed four females and two males; five were 10th graders, and one was an 11th grade student. The district recognized Anjelica and Julio as LEP students. All students were program participants for two years. Table 9 shows the change in CTBS mathematics and reading grades from 2001 to 2003, and the change in teacher-assigned grades in mathematics and reading over the same period for the high school, grades 10-11 students.

Rosita had a loss of four NCEs in reading, a gain of two in mathematics, a gain of one point in teacher-assigned reading grades, and a loss of 1 point in mathematics. Rosita was the child of a teacher who helped with the family’s goat milk and cheese business.

Adrian showed small gains in his CTBS scores of three in reading and four in mathematics, a gain of three points in his reading grade, and a gain of two points in his mathematics grade. Adrian was the child of an elementary principal. His family lived on a ranch and raised cattle.

Maria showed losses in her standardized test scores of 8 NCEs in reading and 39 in mathematics, a loss of four points in her teacher-assigned reading grade, but a seven point gain in her mathematics grades. Maria was one of six children who frequently
provided care for the younger children in the family. Her family also raised horses and cattle. She was active in student council as well as participating in sports.

Anjelica showed a loss of six NCEs in reading in her standardized test scores and lost five points in teacher-assigned grades. She showed a gain of one NCE in her mathematics standardized test scores and a loss of one point in her teacher-assigned grade. Anjelica lived on the extended family ranch and was a poet who submitted poems to the school newspaper regularly.

Table 9: Grades 10-11 Gain/Loss on CTBS Scores and Reading & Mathematics

Teacher-assigned Grades from 2001 to 2003

<table>
<thead>
<tr>
<th>Student</th>
<th>Grade</th>
<th>Gender</th>
<th>LEP</th>
<th>2001-2003 CTBS Scores</th>
<th>Loss/Gain</th>
<th>2002-2003 Grades</th>
<th>Loss/Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosita</td>
<td>10</td>
<td>F</td>
<td></td>
<td>Reading +5</td>
<td>Loss</td>
<td>Reading +1</td>
<td>Gain</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mathematics +4</td>
<td>Gain</td>
<td>Mathematics -1</td>
<td>Loss</td>
</tr>
<tr>
<td>Adrian</td>
<td>10</td>
<td>M</td>
<td></td>
<td>Reading +6</td>
<td>Gain</td>
<td>Reading +3</td>
<td>Gain</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mathematics +7</td>
<td>Gain</td>
<td>Mathematics +2</td>
<td>Gain</td>
</tr>
<tr>
<td>Maria</td>
<td>11</td>
<td>F</td>
<td></td>
<td>Reading +8</td>
<td>Loss</td>
<td>Reading -4</td>
<td>Loss</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mathematics -39</td>
<td>Loss</td>
<td>Mathematics +7</td>
<td>Gain</td>
</tr>
<tr>
<td>Anjelica</td>
<td>10</td>
<td>F</td>
<td>X</td>
<td>Reading -6</td>
<td>Loss</td>
<td>Reading -5</td>
<td>Loss</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mathematics +1</td>
<td>Gain</td>
<td>Mathematics -1</td>
<td>Loss</td>
</tr>
<tr>
<td>Julio</td>
<td>10</td>
<td>M</td>
<td>X</td>
<td>Reading -6</td>
<td>Loss</td>
<td>Reading +1</td>
<td>Gain</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mathematics -7</td>
<td>Loss</td>
<td>Mathematics +8</td>
<td>Gain</td>
</tr>
<tr>
<td>Genevie</td>
<td>10</td>
<td>F</td>
<td></td>
<td>Reading +6</td>
<td>Gain</td>
<td>Reading +3</td>
<td>Gain</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mathematics -14</td>
<td>Loss</td>
<td>Mathematics +5</td>
<td>Gain</td>
</tr>
</tbody>
</table>
Julio had a loss of six NCEs in reading and a loss of seven NCEs in mathematics on the CTBS test, but he did show gains of 1 point in reading grades and 8 points in mathematics grades. He worked as a student mentor for one of the elementary programs for two years. He was the only student who lived with a single mother.

Genevie showed a gain of six NCEs in the reading portion of the standardized test, but a loss of 14 in the mathematics portion. She showed gains in her teacher-assigned grades for reading of three and mathematics of five points. Genevie was a singer who sang with a local band. She did not like to read, but participated in student council. She also lived on the family ranch and helped with ranching responsibilities.

Grade 10-11 Interview Responses

The responses of high school students in grades 10 and 11 are reported in this section. Protocol number 1 asked students why they participated in extended day programs. In response, all six students in grades 10 and 11 indicated they attended extended day programs because they choose to do so. Julio stated he attended “because I feel that it is important. The program is good for me. I want to go.”

The second question the interviewer asked was how students spent their time after school and in summers before they attended extended day programs. Rosita, Adrian, Genevie, and Julio responded that they just went home, performed chores, and watched television. Maria and Anjelica said they went to work instead of participating in any school sponsored activities. The investigator questioned both girls about why they worked. Both said they did so because they wanted to purchase brand name
clothing items the family could not afford. Anjelica said, “I like to have money of my own, so I don’t have to ask my parents all the time.”

In response to the prompt, what differences do you see in yourself because of extended day programs? Genevie saw no difference in herself. Adrian said, “I’m more active and more energetic, because I’m involved in things I care about.” Maria responded, “I’m really busy now, so I’m not getting into so much trouble.” She added, “I have some friends who need to go. It would make a difference for them.” She said she also felt more confident “because I’m not afraid to write down what I’m thinking like I was before.” Julio commented, “I see the difference in myself because I try more now to help people. Before I was a mentor to the little kids, I just thought about myself.”

In response to the question regarding time spent watching television, Rosita and Genevie indicated they watched an hour or less, while Adrian, Maria, Anjelica, and Julio watched approximately two hours per day. When asked, “How many hours a day did you spend at home alone after school before participating in extended day programs?” All students indicated they spent in excess of one hour per day alone before they began to participate in extended day programs. Anjelica said she was home alone three hours per day before her parents got home from work.

When asked what activities students participated in during extended day programs, Maria, Julio, and Genevie were most interested in intramural sports; Anjelica participated in yearbook; and Rosita focused on business classes. Adrian participated in intramural sports and the welding and drafting classes. In response to the question, what
was your favorite subject and why, Maria, Julio, and Adrian chose mathematics. Adrian said because, "it is easy for me." Maria chose mathematics because "Mr. T is a hard teacher and very strict, but he makes it challenging." Julio said, "Math, because it is interesting. When you get an 'A' from Mr. T, you get a grade you feel really good about." Rosita chose business classes "because I really like Mrs. K. She teaches real stuff we can use." Adrian and Anjelica chose English because they both like to write. Anjelica said she especially "likes writing poems."

The next question pertained to students' feelings about school. They were asked, "Has your attitude toward school changed since you started to attend extended day programs?" Anjelica and Genevie had negative responses with both saying they still felt the same about school. Rosita, Adrian, Maria, and Julio said their attitudes had changed in a positive way. Julio remarked, "Yes, I've changed because it makes me look forward to coming to school and passing my classes so I can continue participating in the program."

In response to students' level of confidence about their schoolwork, Maria and Julio said they felt less confident because the classes are harder every year, but Rosita felt more confident because she felt "like I know what I'm doing more now." Adrian and Genevie both expressed a higher level of confidence. Anjelica said it was easier to approach teachers for help in the small group setting of extended day programs.

When asked if they felt more confident solving mathematics problems, four students had a positive response, but Julio and Genevie gave negative responses. However, five of six students stated they now feel more confident as readers. Only two
students did not read for fun within the week before the interviews. Julio and Adrian read the previous evening. Anjelica said she did not like to read, so she only read required texts. None of the students, however, reported reading for fun more than 15 minutes per day.

Protocols 13 and 14 related to homework and parental involvement in the homework process. All students reported that they completed their homework every time it was assigned, but four said they did so without any assistance from their parents. Adrian and Anjelica stated their parents assisted them whenever they needed it if they asked them for help.

In response to the question, “Do you feel more confident now over previous years when taking the required CTBS tests?,” only Genevie responded negatively. The investigator later asked Genevie to clarify her answer. She replied, “I don’t see the point. We don’t get a grade, and it doesn’t make any difference whether we get into college or not, so I just don’t see the point. I don’t take them seriously. I just guess if I don’t know the answer right away.” In contrast to Genevie’s answer, Rosita said, “Yes, I feel more confident because I feel like I know the material in a way I never did before.”

The final question, “What would you like us to know that we may not have asked you” elicited no response from four students, but Rosita said she was “glad we have after school programs because we can choose classes we want instead of taking what we have to.” Anjelica said, “We should have more programs like art and music. That way more people will stay and not go home to watch TV.”
Summary

The purposes of this chapter were to outline the method of presentation to be utilized, discuss analyses of student achievement, report results of the tests of the hypotheses, and discuss the analyses of findings. Discussed were the results of t-tests of statistical significance run on extended day program participants and non-participants’ CTBS reading and mathematics scores. The t-tests of statistical significance were also run on extended day program participants’ second semester 2002 (pre-test) teacher-assigned scores in reading and mathematics and their second semester 2003 (posttest) scores. An additional t-test compared extended day program participants’ second semester 2003 teacher-assigned reading and mathematics scores to non-participants scores. Experimentally important and consistent t-test results were obtained for the CTBS mean mathematics scores for both the grades 3-5 and grades 10-11 treatment groups, for the grades 10-11 treatment group teacher-assigned reading grades, and for the grades 3-5 treatment group pre- and posttest CTBS mathematics scores. Statistically significant t-test results were also obtained for the high school treatment group teacher-assigned grades in mathematics.

Results of the 2002-2003 New Mexico High School Competency Exam for extended day participants and non-participants were also reported. The 88 percent of students in the treatment group who passed the six subtests compared to a passing rate of 69 percent for the comparison group. Nineteen percent more of the treatment group passed than the comparison group on the first attempt. An examination of student records indicated five students (16%) in the comparison group had transferred to other
schools, were seeking their GEDs, or had dropped out of high school. None of the students in the treatment group had transferred or left the school.

Comparisons were made for the grades 3-5 and grades 10-11 treatment groups to determine if being eligible for free or reduced lunch, being identified as Limited English Proficient (LEP), or being male or female had an impact on mean 2003 CTBS scores in mathematics or reading. Scores for students who were eligible for free or reduced lunch and those who were not eligible were identical for both grades 3-5 and grades 10-11; however, at both levels, students who were recognized by the district as LEP had mean reading and mathematics scores that were lower than non-LEP students. Also at both levels, females had higher mean reading and mathematics scores than males.

The data from the qualitative inquiry were also reported. Students who participated in the interview process agreed, with the exception of one elementary student, that they attended extended day programs because they chose to attend. That one exception later qualified his response by saying he loved to attend the program. All of the elementary students stated that they felt more confident solving mathematics problems and felt more confident as readers. Only two of the high school students did not feel more confident solving mathematics problems, and one did not feel more confident as a reader. All of the students read for fun with the elementary response group reading more often and spending more time reading for fun than the high school students. All 12 students contended they completed their homework every time it was assigned, and all did it on their own. Two high school and two elementary students said their parents helped them if they asked for help.
Only one student at the high school level said she did not feel more confident taking the state mandated standardized tests. She qualified that response by stating she did not see the value of the tests and did not take them seriously. Student responses to extended day programs were positive regarding both the programs and the impact of academic tutoring on their attitudes toward tests, school, and their achievement.
CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter includes (a) a summary of the procedures and findings of the study, (b) conclusions derived from the study, (c) implications for extended day programs, and (d) recommendations for further research.

Summary of the Study

The study was a mixed methodology utilizing quantitative and qualitative data. This investigation analyzed the relationship between participation of Hispanic students in extended day programs and achievement, as measured by CTBS scores in reading and mathematics and teacher-assigned scores in reading and mathematics. Mean scores of students who were regular participants in extended day programs were compared to the mean scores of students who were non-participants. Results of the New Mexico High School Competency Exam for students in grades 10 and 11 were also analyzed.

A total 140 Hispanic students who attended two elementary and one high school in rural New Mexico participated in this study. There were 38 participants in the elementary treatment group and 36 students in the corresponding comparison group. For grades 10 and 11, there were 34 participants in the treatment group and 32 in the comparison group.

In addition to the quantitative aspect of the study, qualitative data were collected through interviews conducted with six elementary and six high school students who were regular participants in extended day programs. The interviews consisted of 16
structured open-ended protocols specific to participation in extended day programs. The researcher developed the protocols. Interview responses were analyzed to determine common or recurring themes.

*Procedures*

$t$-tests of experimental importance or consistency were employed to determine experimental or consistent importance in levels of achievement for Hispanic students who participated in extended day programs and those who did not. Mean CTBS scores for participants and non-participants were compared in reading and mathematics for students in grades 3-5 and grades 10-11. Mean pre-test and posttest reading and mathematics scores were compared for the treatment groups at the elementary and secondary levels. The mean of teacher-assigned second semester grades in reading and mathematics was compared for participant and non-participant groups in the elementary and in grades 10 and 11. The average passing rate for the six sub-tests of the New Mexico High School Competency Exam was compared and analyzed. Qualitative data gathered through student interviews were tape-recorded and analyzed to search for similar themes.

*Findings*

Six hypotheses were investigated. Experimental importance and consistency for treatment and comparison group CTBS scores and teacher-assigned grades was computed using an independent two-sample, pooled variance $t$-test. Pre- and posttest scores were computed using a correlated $t$-test. The first hypothesis stated that there was no experimentally important or consistent difference between the mean normal curve
equivalent reading scores of extended day program participants and non-participants. There was no experimentally important or consistent difference between the mean normal curve equivalent reading and mathematics scores of the grades 3, 4, and 5 treatment and comparison groups as demonstrated by a level of significance of .05. The mean NCE difference in reading showed a difference of 5 normal curve equivalents. The level of significance of .07 was not experimentally consistent above the .05 level of confidence leading to failure to reject Hypothesis I; however, these gains are important indicators of changes in student achievement.

The treatment group mathematics NCE mean of 54 revealed a mean NCE difference of five when compared to the comparison group mean of 49. The level of significance was experimentally important or consistent above the .05 level of confidence leading to rejection of Hypothesis II.

The second hypothesis stated that there was no experimentally important or consistent difference between the mean normal curve equivalent mathematics scores of extended day program participants and non-participants. The grades 10 and 11 treatment group reading normal curve equivalent reading scores of 56 indicated a difference of 4 when compared to non-participants’ mean scores of 52. The mean NCE difference of 4 was not experimentally important or consistent above the .05 level of confidence, thus, leading to a failure to reject Hypothesis I.

The mathematics normal curve equivalent mean scores of the grades 10 and 11 treatment group of 53 compared to the non-participants’ scores of 45 indicated a mean
NCE difference of 8 which was experimentally important or consistent at the .05 level of confidence. This led to rejection of Hypothesis II.

The third hypothesis stated that there was no experimentally important or consistent difference between the posttest normal curve equivalent reading scores of extended day program participants when compared to their pre-test scores. The elementary treatment group mean posttest reading score of 53 showed a mean NCE difference of 3. The .07 level of significance was not experimentally important or consistent at the .05 level of significance. The pre-test and posttest scores for the high school was 52; so there was no change in mean scores. These results led to a failure to reject Hypothesis III.

The fourth hypothesis stated that there was no experimentally important or consistent difference between the posttest normal curve equivalent mathematics scores of extended day program participants when compared to their pre-test scores. The elementary mean posttest score of 54 was a five NCE difference over the pre-test score of 49. This resulted in an experimentally important or consistent difference of .01.

The high school posttest mean score of 45 resulted in a loss of three NCEs from the pre-test score of 48. The three mean NCEs loss resulted in an experimentally important or consistent difference at or above the level of significance of .05 thus leading to rejection of Hypothesis III.

The fifth hypothesis stated that there was no experimentally important or consistent difference between the mean annual second semester teacher-assigned reading grades of extended day program participants and non-participants. The grades
3-5 treatment group and comparison groups showed no experimentally important or consistent differences.

However, the grades 10 and 11 treatment group showed an eight point NCE difference for an experimentally important or consistent difference of .03 leading to rejection of Hypothesis V.

The sixth hypothesis stated that there was no experimentally important or consistent difference between the mean annual second semester teacher-assigned mathematics grades of extended day program participants and non-participants. The comparison of results yielded no experimentally important or consistent differences for either the elementary or high school groups leading to failure to reject Hypothesis VI.

The results of the state mandated high school exit exam were also reported. Students who participated in extended day programs passed all six subtests with a minimum score of 175 more often (88%) than did non-participants (69%).

Conclusions

Results of the quantitative data indicated that extended day programs had no experimentally important or consistent impact on the standardized test scores in reading for either grades 3 through 5 or grades 10 and 11. The mean scores for the grades 3 through 5 treatment group did show a mean gain of three NCEs. This gain, although not experimentally important or consistent, was an important indicator of the positive effect of one-on-one tutoring for students who were experiencing reading difficulties. The research site implemented scientifically-based reading instruction at the elementary
level and all extended day instructors received professional development in these reading strategies and utilized them in their tutoring sessions.

The experimentally important or consistent differences between the treatment and comparison groups standardized mathematics test scores may have been the result of several factors. For students who experienced difficulty grasping mathematical theories, extra instructional time, especially in a small group or one-on-one setting was critical to help them understand concepts. Another factor was the district’s Educational Plan for Student Success (EPSS), a state mandated curriculum evaluation plan focus on mathematics. The district required mathematics to be taught across the curriculum. Teachers documented through their lesson plans how they taught mathematical concepts in core academic classes. The repeated exposure to the fundamentals of numbers and computation familiarized students with the practical applications of mathematics, thus, enhancing student learning.

An additional consideration was the district’s collaboration with the Math and Science Academy (MSA), an initiative of the Northern New Mexico Council on Excellence in Education (NNMCEE). The MSA supported three rural school districts in an effort to “improve mathematics and science education as part of a larger systematic initiative to improve the education for all students in Northern New Mexico” (Herman & Osmundson, 2002, p. 3). The initiative began at the middle school level and expanded to the elementary level. The project was developed by NNMCEE, the University of California and the Department of Energy’s Los Alamos National Laboratory (LANL), and the Northern Network for Rural Education. MSA provided
teachers with professional development in both subject content and pedagogical practices, provided tools and strategies for content area integration across the curriculum, and aimed to improve education by providing high quality learning experiences. It also brought scientific experts to work directly with students in the classroom (Herman & Osmundson, 2002). District staff supported the MSA as a catalyst for educational change in instructional strategies (Valdez, personal communication, February 10, 2004).

Another factor that may have impacted student scores was the district, parental, and community focus on test preparedness. Teachers received professional development in test-taking strategies, parent organizations displayed banners promoting student achievement, and the radio station played public service announcements that reminded students of the value of test results. It would be difficult to determine whether one factor had the most impact or whether the change was due to the combination of factors; however, both the treatment and comparison groups experienced all factors with the exception that the students in the treatment group were regular participants in extended day programs.

None of these factors explains the statistically significant loss when CTBS pre-test scores for 2002 were compared to posttest scores for 2003. One conclusion district administrators and teachers reached is that the content of the CTBS test at the 10th grade level required instruction in basic algebra. District students were not required to take algebra; however, based on CTBS test results, the new district policy stipulates students will take Algebra I in grade 9 or 10 in order to graduate.
The experimentally important or consistent finding for mean second semester teacher-assigned reading grades was a gain of .03 for the treatment group. This gain can be attributed to extended day program activities since both the treatment and comparison groups have regular day instruction in scientifically based reading instruction. This instruction is one component of the district’s emphasis on literacy. The district convened a panel of administrators, teachers, parents, and students to evaluate district educational goals. Upon the recommendation of the panel, caring for self and others was dropped as an EPSS goal, and literacy was adopted. Literacy across the curriculum was mandated. As with mathematics, teachers documented in their lesson plans how they provided instruction in literacy strategies.

Students had a stake in the results of the New Mexico High School Competency Exam. If they did not pass all sub-tests, they did not receive their high school diplomas. Students who attended extended day programs were more involved both academically and socially in the high school educational environment than students who did not participate in activities outside the regular school day. This involvement was an indicator that these students were more academically focused and performed better on tests that had significance for them.

The passing rates for both the treatment and control groups were highest for the reading, language, and composition subtests. These results were indicators of quality instruction in the language arts curriculum. The lowest scores for both groups was the science subtest. An examination of the test content led the district to implement changes in the class schedule. The preponderance of questions related to the physical sciences
that students had not been required to take as 10th graders. District policy now requires students to complete physical science in the 9th grade.

The major discrepancy in the passing rates of the treatment and comparison groups was social studies. The reason for this disparity may have been the instructional methodology. The district had only one social studies teacher who relied on teacher-directed lecture format for instruction. Students whose learning modality was other than auditory struggled to comprehend concepts presented. Of the treatment group, 88% of students passed the exam on their first attempt while only 69% of the comparison group passed on their first attempt.

A further examination of student records indicated five students (16%) in the comparison group transferred to other schools, were seeking their GEDs, or dropped out of high school. None of the students in the treatment group transferred or left the school. The New Mexico High School Competency Exam was considered an accurate assessment of student learning as students are impacted by test results.

Comparisons were made for the grades 3-5 and grades 10-11 treatment groups to determine if eligibility for free or reduced lunch, being identified as LEP, or gender had an impact on average 2003 mean CTBS scores in mathematics or reading. The mean mathematics and reading scores of students who were eligible for free or reduced lunch and those who were not eligible were identical for both levels. This can be attributed to the homogeneity of the community. Because of local demographics, economic indicators in the area are relatively consistent. The area has a depressed economy, so the difference between students who were eligible and those who were not was an
insignificant difference. Also, due to the seasonal work in the area, students may be eligible one year and not the next. The mean scores of students who were identified as LEP are lower in both reading and mathematics at both levels. This supports current research that indicates students whose primary language is other than English score lower on standardized tests. Figueroa and Valdes (1994) contended linguistic knowledge of Spanish has detrimentally affected all psychometric tests and test scores given in the United States. LEP students are viewed as English proficient because of their facility in using the spoken language, but the spoken language only requires skilled use of the “surface features of the language, i.e., pronunciation, grammar, and enough vocabulary to carry on conversation” (Portland Public Schools, 2001, ¶ 3). However, the cognitive academic language proficiency (CALP) required to master concepts, content information, and vocabulary is more complex, but is essential for students to succeed in mainstream education (McLaughlin, 1992). Brigham (1930) cautioned “for purposes of comparing individuals or groups, it is apparent that tests in the vernacular [English] must be used only with individuals having equal opportunity to acquire the vernacular of the test” (p. 165).

The comparison of mean reading and mathematics scores for males and females indicated females at both levels scored higher than males in both subjects. The achievement of females may be attributable to cultural aspects in the area, but these results confirm the findings of Coley (2001) that in reading “females scored higher than males across all racial and ethnic groups, with the gap widening for most groups as the student progressed through school (¶ 3). These results in mathematics did, however,
contradict the study of Sadker and Sadker (1994) on gender inequality in the classroom. They documented the tendency of teachers to interact less with females and have lower expectations. Coley (2001) documented the lack of differences in scores for all ethnic groups.

Qualitative Data Results

The interview responses of students who were regular participants in extended day programs in grades 3-5 and 10-11 are reported in this section. Of the six students interviewed in grades 3-5, five attended the extended day program because they chose to attend, while all the students in grades 10-11 did so. One elementary student said his parents wanted him to attend so his homework would be completed by the time he came home, but he did say he wanted to attend the program because his friends attended. The elementary students each watched television from 30 minutes to 2 hours per day, while 67% of the high school students watched television two hours per day.

All the grades 3-5 students participated in homework help and tutoring because it was a required activity at the elementary level, but they chose different interests after the academic part of the program. The art and Yoga classes were offered only during the extended day program. The district had no art curriculum. Only two high school students chose homework help and tutoring, two chose intramural sports, one yearbook and cheerleading, one drafting and welding, and one chose to be a student mentor at the after-school program. The discrepancy in numbers who attended the academic component of the program between the two levels is explained because high school
students were not required to attend homework help and tutoring. They were offered a selection of classes and attended the ones they chose.

When asked about their favorite subject, one elementary student selected physical education. Half of the elementary students chose science, while one chose mathematics and one chose history. The district collaboration with the Math and Science Academy at the elementary level may have influenced students’ interest in the sciences. The investigator did not analyze CTBS data or teacher-assigned grades in science to determine differences in achievement since MSA was implemented. At the high school level, English and mathematics were selected by two students as their favorite subjects, while one student chose business classes. All classes selected were part of the regular day curriculum with business classes also offered during the extended day program.

The majority of students felt more confident about their schoolwork, while two elementary students felt the same. The commonality expressed was the individualized attention helped them understand their classes. One student who felt the same was a gifted student who maintained an ‘A’ average in all her classes, while the other was a student who received special education services. Only one student felt no change in his level of confidence. He said he always felt confident. There were three high school students who expressed more confidence in their schoolwork, although two students expressed less. Both felt classes became progressively more difficult as they matured, and they were concerned about their ability to maintain their grades.
The elementary students who commented their attitudes toward school had not changed had positive experiences and liked school. The other four expressed the opinion that extended day programs helped them to understand concepts and complete their homework, which positively influenced their attitudes. At the high school level, four students felt their attitudes had improved because they participated in programs that had meaning for them, while two expressed no change. One student had positive feelings about school, the other did not. Extended day programs did not affect student attitudes when students were already successful at school. They did positively affect the attitudes of students who were either struggling academically or not engaged in their regular day classes. Students who were having positive educational experiences viewed the extended day program as a continuation of an affirming experience, but students who were challenged by the regular day curriculum received both the individualized attention and the additional instruction time they needed to achieve academically. This achievement improved both their attitudes toward school and their perceptions about their confidence as learners.

Only one high school student did not feel more confident solving mathematics problems. She was the same student who expressed no change in attitude, spent no time reading for fun, and was also the only student who did not feel more confident taking the state mandated CTBS tests. She continually expressed negative perceptions about school and tests. The other 11 students did feel more confident solving mathematics problems. Elementary students received instruction through MSA and individualized instruction during the extended day program; both of these may be contributing factors.
to their improved confidence. High school students also attended before and after-
school tutoring in one-on-one situations which may have contributed to their improved
certainty.

Only one student said she did not feel more confident as a reader. She was a
high school student who did not like to read and did not read for fun. When the
investigator asked her why, she responded, “I don’t know. I just don’t like to. I’d rather
watch TV.” High school students did not receive tutoring in basic reading skills either
during the regular day or extended day programs because there was no reading
specialist at the high school level. The erroneous assumption was made that students
knew how to read by the time they were in high school. There were no remedial
programs available through the district for students who could not read at grade level in
high school.

The elementary students read for fun more often and read more time per day
than the high school students. This discrepancy may be explained by the district’s EPSS
emphasis on literacy and on scientifically based reading instruction utilizing Read Well
and Formula III at the elementary level. Elementary students did show gains in reading
achievement although the gains were not statistically important. Only one student did
not feel more confident taking the state mandated CTBS tests. She remarked that she
did not see any value in the tests and did not take them seriously. The improved level of
confidence for the other 11 students may be due to the individualized tutoring students
received during the extended day program, the district’s focus on test preparedness, or
the community’s radio campaign on the importance of improved scores. The
investigator did not ask students which of these factors students felt had the most impact.

Table 10: Grades 3-5 Interview Responses I

<table>
<thead>
<tr>
<th>Student</th>
<th>Why do you participate in extended day programs?</th>
<th>How many hours a day do you watch TV?</th>
<th>What activities did you participate in when you attended extended day programs</th>
<th>What is your favorite subject?</th>
<th>Do you feel more confident about your schoolwork?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cody</td>
<td>I want to</td>
<td>One half hour</td>
<td>Homework</td>
<td>Science</td>
<td>More</td>
</tr>
<tr>
<td>Raquel</td>
<td>I want to</td>
<td>1</td>
<td>Homework</td>
<td>Science</td>
<td>Same</td>
</tr>
<tr>
<td>Arianna</td>
<td>I want to</td>
<td>1</td>
<td>Homework</td>
<td>Mathematics</td>
<td>More</td>
</tr>
<tr>
<td>Tirzio</td>
<td>My mom and dad want me to</td>
<td>2</td>
<td>Homework</td>
<td>Science</td>
<td>More</td>
</tr>
<tr>
<td>Estevan</td>
<td>I want to</td>
<td>2</td>
<td>Homework</td>
<td>P.E.</td>
<td>Same</td>
</tr>
<tr>
<td>Leila</td>
<td>I want to</td>
<td>1</td>
<td>Homework</td>
<td>History</td>
<td>More</td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
<table>
<thead>
<tr>
<th>Student</th>
<th>Has your attitude toward school changed?</th>
<th>Do you feel more confident solving math problems?</th>
<th>Do you feel more confident as a reader?</th>
<th>How much time do you spend reading for fun?</th>
<th>Do you feel more confident taking CTBS tests?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cody</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>2 hours</td>
<td>Yes</td>
</tr>
<tr>
<td>Raquel</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>30 minutes</td>
<td>Yes</td>
</tr>
<tr>
<td>Arianna</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>1 hour</td>
<td>Yes</td>
</tr>
<tr>
<td>Tirzio</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>1 hour</td>
<td>Yes</td>
</tr>
<tr>
<td>Estevan</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>20 minutes</td>
<td>Yes</td>
</tr>
<tr>
<td>Leila</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>30 minutes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Table 12: Grades 10-11 Interview Responses I

<table>
<thead>
<tr>
<th>Student</th>
<th>Why do you participate in extended day programs?</th>
<th>How many hours a day do you watch TV?</th>
<th>What activities did you participate in when you attended extended day programs</th>
<th>What is your favorite subject?</th>
<th>Do you feel more confident about your schoolwork?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosita</td>
<td>I want to</td>
<td>1</td>
<td>Homework, help/tutoring, Business classes</td>
<td>Business</td>
<td>More</td>
</tr>
<tr>
<td>Adrian</td>
<td>I want to</td>
<td>2</td>
<td>Homework help, Drafting/welding</td>
<td>English</td>
<td>Same</td>
</tr>
<tr>
<td>Maria</td>
<td>I want to</td>
<td>2</td>
<td>Intramural sports, Mathematics</td>
<td>Less</td>
<td></td>
</tr>
<tr>
<td>Anjelica</td>
<td>I want to</td>
<td>2</td>
<td>Homework help, English, help/tutoring Cheerleading &amp; Yearbook</td>
<td>More</td>
<td></td>
</tr>
<tr>
<td>Julio</td>
<td>I want to</td>
<td>2</td>
<td>Homework, help/tutoring, Student Mentor</td>
<td>Mathematics</td>
<td>Less</td>
</tr>
<tr>
<td>Genevie</td>
<td>I want to</td>
<td>One half hour</td>
<td>Homework help, help/tutoring, Intramural sports</td>
<td>Science</td>
<td>More</td>
</tr>
</tbody>
</table>
Table 13: Grades 10-11 Interview Responses II

<table>
<thead>
<tr>
<th>Student</th>
<th>Do you feel more confident about your school work?</th>
<th>Do you feel more confident solving math problems?</th>
<th>Do you feel more confident as a reader?</th>
<th>How much time do you spend reading for fun?</th>
<th>Do you feel more confident taking CTBS tests?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosita</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>15 minutes</td>
<td>Yes</td>
</tr>
<tr>
<td>Adrian</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>10 minutes</td>
<td>Yes</td>
</tr>
<tr>
<td>Maria</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>10 minutes</td>
<td>Yes</td>
</tr>
<tr>
<td>Anjelica</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>None</td>
<td>Yes</td>
</tr>
<tr>
<td>Julio</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Not much</td>
<td>Yes</td>
</tr>
<tr>
<td>Genevie</td>
<td>No</td>
<td>Yes</td>
<td>None</td>
<td>None</td>
<td>No</td>
</tr>
</tbody>
</table>
Although it was not intentional on the part of the investigator, all of the students interviewed had attended school in the district since Head Start. None lived anywhere other than the local area, and only two high school students expressed any interest in living elsewhere when they completed their educations. The traditional Hispanic culture of the area and the geographic isolation limit not only educational opportunities, but opportunities to participate in enriching experiences that would influence their views of the world.

**Implications**

The present study was undertaken because of the investigator’s concern about the persistent low academic achievement and high dropout rates of Hispanic students. Chapter II summarized a modicum of the research on minority educational issues and those specific to Hispanics. According to Barone and Eisner (1997), the primary purpose “of educational research is to further human understanding so that the quality of educational practice can be improved. The achievement of such an aim, in turn, increases the probability that students will be able to lead an enhanced quality of life” (p. 85). Based on the results of this study, extended day programs may be one venue for minority students to have both the individualized tutoring and the additional instructional time requisite for them to achieve at the levels predicated by the mainstream educational system. Further research is recommended that focuses on the quality of extended day instruction, time spent on instruction in core academic subjects, and linkages to regular day curriculum.
Recommendations for Further Research

In the preceding section, the suggestion was made that further research is recommended to determine the efficacy of extended day programs on the achievement of minority students. Unfortunately, it was difficult to qualify extended day programs or determine what aspects of programs affected student behaviors and achievement. Whether the nurturing environment, the small group setting, the extended instructional time, the extra teacher attention, or a combination of all elements had the most impact was impossible to ascertain utilizing the existing instrumentation. Of the 12 students interviewed, 92 percent felt extended day programs helped them feel more confident taking tests; however, correlating student achievement with standardized test scores was problematic at best because there were concerns about the validity of the tests, especially when they were used to measure achievement in disadvantaged students.
REFERENCES


Smith, M.E. (1942). The effect of bilingual background on college and aptitude scores and grade point ratios earned by students at the University of Hawaii. *Journal of Educational Psychology, 74*, 305-310.


Wendorf, F. (1953). *Salvage Archaeology in the Chama Valley, New Mexico.* Santa Fe, NM: School of American Research.


**EDUCATIONAL PLAN FOR STUDENT SUCCESS**

**SCHOOL DISTRICT**

**ACTION PLAN**

REVISED – 2003-2004 SY

---

**C.V.S. TARGET AREA:** Literacy

**SUPPORT DATA USED IN SELECTING GOAL:**

- NMHSCE - DIBELS - SUPERA - TPRI
- Teacher observation/Evaluation, NM Writing Assessment

**C.V.S. GOAL:** All students will improve their literacy skills across the curriculum.

**INTERVENTION:** Students will build on and apply literacy skills as determined by NM State Standards and Benchmarks.

<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>RESPONSIBLE PARTY</th>
<th>TIMELINE</th>
<th>RESOURCES</th>
<th>VERIFICATION</th>
<th>STAFF DEVELOPMENT</th>
</tr>
</thead>
</table>
APPENDIX B

MATHEMATICS EDUCATIONAL PLAN FOR STUDENT SUCCESS
EDUCATIONAL PLAN FOR STUDENT SUCCESS
SCHOOL DISTRICT
ACTION PLAN
REVISED – 2003-2004 SY

C.V.S. TARGET AREA: Mathematics

SUPPORT DATA USED IN SELECTING GOAL

CTBS/CRT
NMHSCE - SUPER A
Teacher Observation/Evaluation

C.V.S. GOAL
All students will improve their Math skills across the curriculum.

INTERVENTION
Students will build on and apply mathematics skills
As determined by NM State Standards and Benchmarks.

<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>RESPONSIBLE PARTY</th>
<th>TIMELINE</th>
<th>RESOURCES</th>
<th>VERIFICATION</th>
<th>STAFF DEVELOPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. Title II (Teacher Quality)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. Other Federal Programs/Operational</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4. Partners</td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
APPENDIX C

TECHNOLOGY EDUCATIONAL PLAN FOR STUDENT SUCCESS
EDUCATIONAL PLAN FOR STUDENT SUCCESS  
SCHOOL DISTRICT  
ACTION PLAN  
REVISED – 2003-2004 SY

**C.V.S. TARGET AREA:** Technology  
(Maintenance)  

**C.V.S. GOAL**  
Technology will be utilized effectively in the teaching and learning process.

**SUPPORT DATA USED IN SELECTING GOAL**  
Teacher Observation  
Student outcomes

**INTERVENTION**  
Students will build on and apply technology skills as defined by NM State Standards and Benchmarks.

<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>RESPONSIBLE PARTY</th>
<th>TIMELINE</th>
<th>RESOURCES</th>
<th>VERIFICATION</th>
<th>STAFF DEVELOPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers and students will apply technology in all subject areas.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. Administration  
2. Instructors  
3. Instructional Assistants | On-going |  
1. Operational  
2. Federal Programs  
3. Grants (i.e., EETT)  
4. Partners |  
1. Student products |  
1. SB-110 (Professional Development Framework)  
2. Title II (Federal Programs)  
3. EETT  
4. Other Federal Programs/Operational  
5. Partners |
| Teachers will foster technology activities to develop creative thinking. |  
1. Administration  
2. Instructors  
3. Instructional Assistants | On-going |  
1. Operational  
2. Federal Programs  
3. Grants (i.e., EETT)  
4. Partners |  
1. Student products |  
1. SB-110 (Professional Development Framework)  
2. Title II (Federal Programs)  
3. EETT  
4. Other Federal Programs/Operational  
5. Partners |