

Olivet Nazarene University

Digital Commons @ Olivet

Ed.D. Dissertations

School of Graduate and Continuing Studies

5-2010

Impact of Two Interventions on ISAT Scores in a Small, Rural School District

Vicki J. Good

Olivet Nazarene University, vgood@olivet.edu

Follow this and additional works at: https://digitalcommons.olivet.edu/edd_diss



Part of the [Curriculum and Instruction Commons](#), and the [Educational Assessment, Evaluation, and Research Commons](#)

Recommended Citation

Good, Vicki J., "Impact of Two Interventions on ISAT Scores in a Small, Rural School District" (2010). *Ed.D. Dissertations*. 6.

https://digitalcommons.olivet.edu/edd_diss/6

This Dissertation is brought to you for free and open access by the School of Graduate and Continuing Studies at Digital Commons @ Olivet. It has been accepted for inclusion in Ed.D. Dissertations by an authorized administrator of Digital Commons @ Olivet. For more information, please contact digitalcommons@olivet.edu.

IMPACT OF TWO INTERVENTIONS ON ISAT SCORES
IN A SMALL, RURAL SCHOOL DISTRICT

by

Vicki J. Good

Dissertation

Submitted to the Faculty of

Olivet Nazarene University

School of Graduate and Continuing Studies

in Partial Fulfillment of the Requirements for

the Degree of

Doctor of Education

in

Ethical Leadership

May 2010

IMPACT OF TWO INTERVENTIONS ON ISAT SCORES
IN A SMALL, RURAL SCHOOL DISTRICT

By

Vicki J. Good

Dissertation

Daphne Welch, Ph.D.
Dissertation Adviser

May 1, 2010
Date

Sara E. Spruce, Ed.D.
Dissertation Reader

May 1, 2010
Date

David L. Lyen
Dissertation Coordinator

May 1, 2010
Date

Daphne Welch, Ph.D.
Director of the Ed.D. Program

May 1, 2010
Date

R. D. Gittel
Dean of the School of Graduate
and Continuing Studies

May 5, 2010
Date

JoAnn Chenneth
Vice-President for Academic Affairs

5-5-2010
Date

© 2010

Vicki J. Good

All Rights Reserved

ACKNOWLEDGEMENTS

A journey such as the one undertaken to complete a doctorate is not a journey taken alone. It is the culmination of the efforts of many, including educators, family, and friends. I first wish to thank my adviser, Dr. Melvin Welch, and reader, Dr. Sara Spruce, whose expertise and encouragement helped make my journey possible. They unfailingly answered questions, provided reassurance, and offered inspiration throughout the doctoral program.

The understanding and patience of my children, their spouses, and my grandchildren have allowed me to miss school activities, dance recitals, athletic events, birthday parties, and even major surgeries when deadlines coincided with family obligations. They demonstrated their love by allowing me to pursue the lifelong dream of a doctoral degree.

I particularly wish to thank my husband, Alan Good, for his unfailing love, constant support, and continuous encouragement. He ungrudgingly took over household chores, prayed for me, listened to my frustrations, held my hand, and never complained throughout the process.

Lastly, I wish to acknowledge my church family who also prayed for me continuously. They began this journey with me and never once failed to show an interest in my progress. God has been good. Without Jesus Christ as my partner, all would be for nothing.

ABSTRACT

By
Vicki J. Good, Ed.D.
Olivet Nazarene University
May 2010

Major Area: Ethical Leadership

Number of Words: 167

This case study sought to determine the impact that an after school program and summer school program may have had on the ISAT reading scores of elementary students in a small, rural school in the Midwest. A secondary purpose was to determine if other factors may have impacted the effectiveness of the two interventions. Quantitative data indicated that the after school program had a positive effect on ISAT reading scores for those students who participated, raising the median raw score of the ISAT reading test by 2.23 points. On the other hand, there was no evidence that the summer school program had any positive effect on ISAT reading scores. The median raw score of the ISAT reading test of students who participated in the summer school program was not statistically significant when compared to the scores of the control group. Furthermore, the qualitative data indicated areas of concern that may have impacted the effectiveness of the interventions including curriculum used, professional development, student motivation, and communication among stakeholders.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
Statement of the Problem.....	3
Background	4
Research Questions	10
Description of Terms	11
Significance of the Study	13
Process to Accomplish.....	15
II. REVIEW OF THE LITERATURE	20
Introduction.....	20
Accountability in School Performance	21
History of Summer School Programs.....	27
History of After School Program.....	37
Response to Interventions.....	44
Implications for Small Rural Schools.....	52
Best Practice.....	56
Conclusion	62
III. METHODOLOGY	65
Introduction.....	65
Research Design.....	66

Chapter	Page
Population	68
Data Collection	70
Analytical Methods.....	75
Limitations	79
IV. RESULTS	82
Introduction.....	82
Findings.....	87
Conclusions.....	117
Implications and Recommendations	147
REFERENCES	153
APPENDIXES	
A. Data Tables	160
B. Student Questionnaire: Newton’s Academy	173
C. Student Questionnaire: Summer School.....	175
D. Student Questionnaire: Newton’s Academy and Summer School.....	177
E. Adult Participant Questionnaire.....	179
F. Consent Forms.....	189

LIST OF TABLES

Table	Page
1. Pre- and Posttest Statistics by Condition	88
2. Pre- and Posttest Stanford 10 Achievement Test Statics by Condition	89
3. Pre- and Post ISAT Scores Based on Attendance.....	90
4. Pre- and Posttest ISAT scores Based on Language	91
5. Pre- and Posttest ISAT Scores Based on SES	92
6. Pre- and Posttest ISAT Scores Based on IEP	93
7. Pre- and Posttest ISAT Scores Based on Gender.....	94
8. Pre- and Posttest ISAT Scores Based on Grade Level	94
9. Summary of Answer to Survey Questions by Students in Newton’s Academy	95
10. Summary of answers to Survey Questions by Students in Summer School.....	96
11. Summary of Answers to Survey Questions by Students in Both Newton’s Academy and Summer School	97
12. Descriptive Statistics for Adult Participants’ Answers on SQ 7-18	101
13. Descriptive Statistics for Adult Participants’ Answers on SQ 25-26	102
14. Frequency of Answers on SQ 1 by Adult Participants	103
15. Frequency of Answers on SQ 2 by Adult Participants	104
16. Frequency of Answers on SQ 3 by Adult Participants	105
17. Frequency of Answers on SQ 4 by Adult Participants	106
18. Frequency of Answers on SQ 19 by Adult Participants	107

Table	Page
19. Frequency of Answers on SQ 20 by Adult Participants	108
20. Frequency of Answers on SQ 21 by Adult Participants	109
21. Frequency of Answers on SQ 22 by Adult Participants	110
22. Frequency of Answers on SQ 23 by Adult Participants	111
23. Frequency of Answers on SQ 24 by Adult Participants	112
24. Frequency of Choice by Adult Role	113

List of Figures

Figure	Page
1. Perception of Overall Effectiveness of Newton's Academy	141
2. Perceptions of Overall Effectiveness of Summer School	142

CHAPTER I

INTRODUCTION

For many, thoughts of summer may bring visions of those “lazy, hazy, crazy days of summer;” but since the No Child Left Behind Act was signed into law on January 8, 2002, many students now face summer days very different from those made popular by Nat King Cole in the early 1960s. According to the Illinois State Board of Education (2008), the overall purpose of the No Child Left Behind Act (NCLB) “is to ensure that each child in America is able to meet the high learning standards of the state where he or she lives” (p. 1). According to Smith (2005), the concept of accountability along with high stakes testing is not new. “What is new, is the scope and potential impact of the NCLB sanctions” (p. 508). The No Child Left Behind Act makes clear that if schools do not find ways to help students meet the standards of the state in which they live, the federal government will offer technical assistance and can resort to sanctions against schools, districts, and states who fail to meet adequate yearly progress. The acronym AYP (adequate yearly progress) has become the focus of many school administrators as they seek ways to help students meet the rigorous standards set forth by the Illinois State Board of Education.

Historically, one of the first interventions implemented by schools to increase students’ academic skills was an extended school year in the form of summer school. Cooper, Charlton, Valentine, and Muhlenbruck (2000) conducted a meta-analysis of research published between January 1967 and August 1998 to review the outcomes of

summer school programs. The researchers concluded that summer school programs can benefit students under certain conditions. Cooper et al. concluded that summer school programs that focused on lessening or removing learning deficiencies had a positive impact on the knowledge and skills of participants. They also found that summer school programs had more positive effects on the achievement of middle-class students than on students from disadvantaged backgrounds, and summer programs that provided small group or individual instruction produced the largest impact on student outcomes. On the other hand, Heyns (1987) conducted research in the area of compensatory summer school programs and concluded that there is little evidence that the amount of learning that takes place during summer school justifies the cost of such an intervention. The debate continues over the effectiveness of summer school as a means of increasing student knowledge and thus helping students attain the high standards set forth by the state of Illinois in its quest to fulfill the requirements of NCLB. In the meantime, administrators have begun to seek interventions other than summer school that might enable their districts to make AYP.

One such intervention is an extended-day rather than an extended-year program. An extended-year program extends the academic year by adding additional weeks to the school year, usually in the summer, whereas an extended-day program adds academic time to the beginning or end of the regular academic day. Fashola (1998) evaluated 34 programs that fit the description of extended-day or after-school programs. Following the evaluation of these programs, Fashola summarized ways to implement an effective after-school program. Characteristics of an effective after-school program included: staff training, program structure, program evaluation, parental involvement, and establishment

of an advisory board. Likewise, Lauer et al. (2006) conducted a meta-analysis of out-of-school programs that included extended-year programs and extended-day programs. They concurred with Cooper et al. (2000) and Fashola when they concluded that extended-day and extended-year programs “can have positive effects on the achievement of at-risk students in reading and mathematics” (p. 307).

The current research was a study of two interventions the purpose of which was to increase students’ scores on the Illinois Standards Achievement Test. One intervention was an extended-year program commonly known as summer school. The second intervention was an extended-day program named Newton’s Academy.

Statement of the Problem

The specific focus of this research was to study the outcomes of two interventions implemented by a small, rural school district in east central Illinois. One intervention was an extended-year program or summer school program, while the other was an after-school program that took place during the school year and extended the school day.

Few schools have unlimited financial resources to fund intervention programs. Therefore, administrators are trying to find cost-effective interventions that improve student performance. The federal government has mandated that students must meet the standards set by their state, and the state of Illinois has chosen the Illinois Standards Achievement Test (ISAT) to determine if students are meeting the state standards. Administrators are especially concerned about finding ways to help struggling students raise their ISAT scores. This study provided analysis of two intervention programs the purpose of which was to raise the ISAT scores of struggling students in grades three through five.

Background

Since NCLB was signed into law, administrators across the United States have focused their attention on the progress their schools and districts are making towards AYP. According to the Illinois State Board of Education (2008), “The overall purpose of the law [NCLB] is to ensure that each child in America is able to meet the high learning standards of the state where he or she lives” (p. 1). The law further states that “all students will reach high standards, at a minimum attaining proficiency or better in reading and mathematics by 2013-2014” (p. 1). In order to determine if students are making progress towards reaching these high standards mandated by NCLB, each state is required to have “a state definition and timeline for determining whether a school, district and the state are making adequate yearly progress (AYP) toward the goal of 100 percent of students meeting state standards by the 2013-2014 school year” (p. 2). According to the Illinois State Board of Education, if a school or district does not make AYP, the government can offer technical assistance followed by sanctions.

In an Executive Summary (n.d.), President George W. Bush authorized a policy statement concerning NCLB. The policy statement included wording that concerned corrective action for low-performing schools and districts. The policy statement said,

Schools and districts that have not made adequate yearly progress for one academic year will be identified by the district or state as needing improvement. Immediately after identification, these schools will receive assistance to improve performance. If the identified school still has not met adequate yearly progress after two years, the district must implement

corrective action and offer public school choice to all students in the failing school. (p. 8)

The NCLB Act (2001) does not specify what corrective action a school or district must take in the early stages of failure at making AYP. That decision is left for the states to determine. However, if the school or district continues failing to make progress towards AYP, the federal government can choose to have Title I schools use Title I funds to aid disadvantaged students in transferring to higher-performing public or private schools. Additionally, Title I funds can be used to ensure that disadvantaged students receive supplemental educational services from a provider of choice. Therefore, school administrators are seeking to put in place ‘corrective measures’ that will help struggling students improve their ISAT scores and thus make progress towards AYP. These ‘corrective measures’ may come in the form of various interventions among which are extended-year programs and extended-day programs.

One facet of a school’s success or failure to make AYP is that of disaggregate subgroups. Section 115 STAT.1446 of the No Child Left Behind Act (2001) named specific subgroups of students who must be disaggregated from the student population as a whole and who must meet the same standards of the aggregate group. These subgroups include: economically disadvantaged students, students from major racial and ethnic groups, students with disabilities, and students with limited English proficiency. The NCLB Act states that 95% of any subgroup must be part of the assessment process. The disaggregate groups are those groups most likely to fail in their efforts to make AYP, so schools are particularly interested in finding interventions that help these groups. Farmer, et al. (2000) found that among the disaggregate groups, the two groups with the highest

failure rate for making progress toward AYP in small rural schools were economically disadvantaged students and students with disabilities.

In the past the Individuals with Disabilities Education Improvement Act (IDEA) provided guidelines for determining which students should be identified as learning disabled. This original act used IQ-achievement discrepancy to identify students with learning disabilities. The Individuals with Disabilities Education Improvement Act of 2004 was a revision of the original act. According to Fuchs and Fuchs (2005), IDEA 2004 “permits educators to use responsiveness-to-intervention (RTI) as a substitute for, or supplement to, IQ-achievement discrepancy to identify students with learning disabilities” (p. 57). In the RTI model, students are screened during the first month of school to identify those students who are at risk of failing, then begins a three-tiered process during which various interventions are implemented at each tier. At this first tier, all children receive instruction and assessment in general education as provided in NCLB and the adequate yearly progress provision (Public Law 107-110, 115 STAT.1450). According to Daly, Persampieri, McCurdy, and Gortmaker (2005), “The basic concept of response-to-intervention is that a continuum of intervention intensity exists in which instructional modifications are sequentially applied to the referred student until an effective intervention is identified” (p. 397). As students are assessed and monitored for progress, students who respond inadequately to general education are provided interventions, first in the general classroom, then in small group instruction, then individually.

Under the 3-tier concept of IDEA, interventions play an important role in tiers one and two RTI. Not only do the interventions implemented at level one help the targeted

students, but according to Kovaleski and Prasse (2004), they also improve the educational delivery to the classroom as a whole. In a document Kovaleski and Prasse prepared for the National Association of School Psychologists, they stated,

Generally, these interventions are delivered in the general education classroom, often in a group setting. The focus of this activity is to improve the quality of instruction for larger groups of students to raise the overall level of classroom instruction while focusing on the deficient students. (p. S8-160)

Extended-year programs and extended-day programs can fulfill the requirements of level one and level two interventions in the RTI model. Therefore, it is important to determine whether these programs result in effects that demonstrate they help students in their progress toward making AYP. Students who attend summer school and extended-day programs often do so because they are in the disaggregate groups of students with learning disabilities or students from a low economic status who failed to make progress toward AYP.

Many researchers (e.g., Austin, Rogers, & Walbesser, 1972; Borman, 2001; Cooper et al., 2000) noted that summer school programs have been in existence since the early part of the twentieth century. The programs served a variety of purposes, one of which was to provide a safe environment for urban children in the summer months when rural children were often engaged in helping with the agrarian livelihood of their parents. Austin et al. pointed out that summer school programs at both the secondary and elementary levels began to focus on remediation during the 1960s. Borman concurred by saying, “By far the most frequently used method to stretch the American school year is

summer school programs, which have seen unprecedented expansion in recent years” (p. 28). Although summer school programs have been in existence for more than a century, there continues to be disagreement as to their effectiveness. Austin et al. conducted a review of summer school programs because of concern for “the Summer Compensatory Education Program component of the Title I of the Elementary and Secondary Education Act of 1965” (p. 171). They noted that in the studies they reviewed, “Few objective measures [had] been used to measure the possible range of student accomplishment. Even when objective measures were used, the unavailability of a control group jeopardize[d] the interpretation of the results” (p. 179). They continued by stating, “Relatively few of the programs had behaviorally stated objectives at the onset of the programs to provide direction for evaluating activities” (p. 179). Heyns (1987) conducted early studies of the effects of summer school. She noted that “early studies of summer learning focused on patterns of retention rather than cognitive growth” (p. 1152). She further noted that studies conducted in the last 20 years have “focused on inequality in achievement outcomes and asked how rates of growth compare for children from different backgrounds” (p. 1152). Like Austin et al., she noted problems in methodology that made it difficult to draw conclusions concerning the effects of summer school programs. Likewise, Borman, Benson, and Overman (2005), who have completed some of the most recent studies of summer programs, concluded, “Although common sense suggests that summer instruction may promote summer learning or at least prevent summer losses, the evidence base supporting this hypothesis is of relatively poor quality” (p. 134). It appears that researchers agree that more research is needed to determine the effectiveness of

summer school programs, but the studies must employ scientific methods for data gathering that can be used to draw valid conclusions.

Extended-day programs are a more recent development and have been implemented for a variety of purposes. Fashola (1998) stated, “One recent trend in some extended-day programs is the development of curricula tied to district, state, and national goals, yet designed to be taught after-school” (p. 5). As NCLB has drawn attention to schools and districts making AYP, the extended-day programs have been increasingly used as an intervention to help struggling students.

Lauer et al. (2006) conducted a meta-analysis of out-of-school time programs (OST programs) and reached similar conclusions about evaluating after-school programs as those reached by Austin et al. (1972), Borman (2001), and Heyns (1987) concerning the evaluation of summer school programs. Lauer et al. said of their meta-analysis,

Those who research and evaluate OST programs face difficult challenges.

In this synthesis, we examined only studies that had a control or comparison group, and we rated the quality of studies higher if they used comparable groups or random assignment of students to groups. (p. 306)

The researchers also acknowledged that there is no ‘no treatment group’ for after-school programs because children are always doing something after-school. Therefore, whatever children are doing after-school becomes the comparison for the intervention, the after-school program. Fashola (1998) concurred when he said, “Few studies of the effects of after-school programs on achievement or other outcomes meet minimal standards of research design” (p. 54). Despite the problems with the evaluation of programs, Lauer et al. concluded, “OST programs can have positive effects on the achievement of at-risk

students in reading and mathematics” (p. 307). Likewise, Fashola concluded that there are a number of promising after-school programs and summer school programs; he maintained, however, that the studies of these interventions are often methodologically flawed. In his study he noted,

Among programs intended to increase academic achievement, those that provide greater structure, a stronger link to the school-day curriculum, well-qualified and well-trained staff, and opportunities for one-to-one tutoring seem particularly promising, but these conclusions depend more on inferences from other research than from well-designed studies of the after-school programs themselves. (p. 55)

It appears that though more research is needed to determine the positive effects of after-school programs, there is evidence that such effects do exist. More studies of after-school programs employing scientific research methods will enable administrators to make informed decisions concerning what interventions might best be used to help at-risk students raise their ISAT scores and thus improve their progress towards making AYP.

Research Questions

This study was guided by the following major research questions:

1. To what extent did two intervention programs in one small, rural school district impact the ISAT scores of the program participants? (quantitative)
2. To what extent might other factors such as school attendance, socio-economic status, primary classroom teacher, IEP, and gender have impacted the effects of the intervention programs? (quantitative)

3. To what extent might other factors such as student, parent, teacher, administrator, and board member perceptions of the two interventions have impacted the effects of the intervention programs? (qualitative and qualitative)

The answers to these questions provided input to determine to what extent, if any, the summer school program and/or the after-school program of a small, rural school in the Midwest produced positive effects in helping students raise their ISAT scores, thus showing that the students were making progress towards AYP.

Description of Terms

The following definitions provide clarity to the unique terms used in this dissertation project.

Adequate yearly progress (AYP). Measures the progress and growth of all students towards meeting the high academic standards set by the state.

Disaggregated groups. Subgroups of the entire student body of a school or district whose progress is monitored apart from the aggregate, specifically those groups disaggregated by race, ethnicity, gender, disability status, migrant status, English proficiency, and status as economically disadvantaged.

Extended-day programs. Programs held before or after regular school hours.

Extended-year programs. Programs that extend the school year by adding days beyond the regular school year, usually in the summer.

Illinois Standards Achievement Tests (ISAT). The standardized test administered to all students in Illinois in grades three through eight, the results of which are used to satisfy the mandates of the No Child Left Behind Act that every child show progress towards making adequate yearly progress on academic standards.

No Child Left Behind (NCLB). An act signed into law in January 2002 that states that all students in a school or district must make adequate yearly progress towards meeting the high academic standards of the state or face possible sanctions by the federal government.

Out-of-school time programs (OST). Programs that extend the school day or school year beyond the regular school day or school year.

Individuals With Disabilities Education Act (IDEA). A law that ensures educational services to children with disabilities throughout the nation.

Response to intervention (RTI). How well a student responds to changes in instruction.

Rural And Low-Income Schools Program (RLIS). To qualify for the RLIS program, at least 20% of the students must be from families below the poverty line and all schools in the district must be in a non-metropolitan town that has a population of less than 25,000 residents.

Rural Education Achievement Program (REAP). A part of the NCLB legislation established to provide additional funding to help schools address challenges that are unique to rural districts.

Small Rural Schools Achievement Program (SRSA). To qualify for the SRSA program, a school district must be located in a county with fewer than 10 people per square mile and all schools in the district must be in communities with fewer than 2,500 residents.

Significance of the Study

Administrators, teachers, and students have invested time, effort, and finances in the after-school program and summer school program of this small, rural school in the Midwest. According to earlier studies (i.e., Austin et al., 1972; Borman, 2001; Heyns, 1987) administrators have relied on summer school programs to prevent learning loss or to increase academic skills since the beginning of the 20th century. The researchers, though, noted the poor methodology used in conducting studies to evaluate what effect, if any, the summer school programs had on student achievement. The present study attempted to correct this weakness in methodology by using random selection and control groups. Furthermore, pre- and post-testing were conducted using student scores from ISAT and Stanford 10 Achievement Tests.

Similar concerns about methodology were raised by Fashola (1998) and Lauer et al. (2006) in their meta-analyses of extended-day programs. Fashola noted,

We need much more research on the effects of all types of after-school programs, especially those intended to enhance student achievement.

There is a particular need for development and evaluation of replicable, well-designed programs capable of being used across a wide range of circumstance. (p. 56)

Lauer et al. concluded, “OST programs can have positive effects on the achievement of at-risk students in reading and mathematics” (p. 307) and Fashola concluded, “. . .there are [sic] a number of promising models in existence, many of which have encouraging but methodologically flawed evidence of effectiveness” (p. 55). It appears that there is reason to believe that after-school programs have a positive effect on student learning.

This study attempted to provide a well-designed study of the Newton's Academy after-school program in one small, rural school district in the Midwest.

Farmer et al. (2000) examined rural schools that qualified for REAP. REAP schools are divided into two groups: schools that qualify for the Small Rural School Assistance Program (SRSA) and schools that qualify for the Rural and Low-Income Schools Program (RLIS). Qualification for each program depends on a county's population per square mile and the number of residents in the school district's communities. The purpose of Farmer et al.'s study "was to determine whether SRSA-eligible and RLIS-eligible schools had difficulty supporting the proficiency of specific subgroups of students, and if so, to identify those specific subgroups" (p. 2). Two-thirds of the SRSA students are in 31 states which includes the Midwest where this study was located. Although the school in this study did not qualify for REAP, it is still a small, rural school district which is just above the population qualifications for REAP. Farmer et al. noted that their study was limited to a focus on SRSA and RLIS schools but that

these programs serve only a small proportion of rural schools and students.

There is a need for additional research to examine the performance of rural schools that are not eligible for REAP and identify the challenges that they

face and the supports that they need. (p. 7)

This study was significant because it addressed the problems small, rural schools face in making AYP. Additionally, the study attempted to avoid the methodological problems of past studies of summer school programs and after-school programs.

Process to Accomplish

The methodology used for this study was a case study. According to Robson (2002), a “case study is a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence” (p. 178). Leedy and Ormand (2005) also contended that “In a case study, a particular individual, program, or event is studied in depth for a defined period of time” (p. 135). The purpose and problem of this study suggested that a case study design be used. It used a mixed methodology in which both quantitative and qualitative data were analyzed in order to answer the research questions.

Participants in the study were 3rd, 4th, and 5th grade students in a small, rural school with a total enrollment of approximately 300 students. All students in grades three through five were administered the Stanford 10 Standardized Achievement Test. Selection and placement in the intervention programs were completed by administrators in the school district. Any student whose score fell in the 20th percentile or below became eligible for one or both of the intervention programs.

To address the first major research question, ISAT scores of the participants provided both pre-test and post-test scores. Likewise, the Stanford 10 Standardized Achievement Test published by Harcourt was used as a pre-test and post-test in order to provide quantitative data. The Stanford 10 Standardized Achievement Test was an appropriate tool to use for triangulation because the Stanford 10 Standardized Achievement Test and the ISAT were based on the same norm-referenced scores.

In order to keep teacher/pupil ratio low, participation in the after-school Newton’s Academy was limited to 12 students per grade level for a total of 36 students.

Participation in the summer school program was limited to 15 students per grade level for a total of 45 students. Participation in both programs was voluntary, and students could participate in one or both programs. There were more students eligible for the interventions who applied for the interventions than there were slots available. This provided a group of students who met eligibility requirements but who did not participate in either of the programs. This group of 43 students became the control or 'non intervention' group for the study. Fashola (1998) promoted such a selection procedure. He stated,

The best [way to select participants] is to take a list of children applying for a given program and then randomly assign them to the program or to a waiting list control group. The fact of applying and meeting other admission requirements ensures that the waiting list control group is equivalent in all important ways to the treatment group. (p. 55)

A parametric test called analysis of variance (ANOVA) was used to analyze the pre- and post-test scores from both the ISAT tests and the Stanford 10 Standardized Achievement Tests of the participants and control group. Gay, Mills, and Airasian (2006) stated,

...analysis of variance (ANOVA) is a parametric test of significance used to determine whether a significant difference exists between two or more means at a selected probability level. Thus, for a study involving three groups, ANOVA is the appropriate analysis technique. (p. 359)

Because the purpose of this study was to determine what effect, if any, the two interventions had on the ISAT scores of the participants, ANOVA provided the suitable

analysis for discussing the effects of the interventions to answer the first and second research questions.

School records provided data used for analysis to answer the second research question. Data from school records included school attendance, socio-economic status, primary classroom teacher, IEP, and gender. A series of mixed-model ANOVAs were used to make comparisons within-subjects and between-subjects to answer the second research question.

Answers to a questionnaire provided additional data used for analysis to answer the third research question. Student participants, parents of student participants, teachers, school board members, and school administrators completed a questionnaire which provided both quantitative and qualitative data.

To analyze the quantitative data derived from the questionnaires, a variety of statistical tests were used based on the type of questions answered by the participants. Student participants selected answers from a Likert-type scale. The means and standard deviations from the numerical values on the Likert-type scale were reported in a table. Adult participants answered a total of 33 items: 10 items required rank order, 2 items required all applicable answers, 14 items required one best answer, and 7 items required open-ended answers. Salkind (2008) indicated that a Kruskal-Wallis one-way analysis of variance was the appropriate test to analyze answers from questions that required ranking by the participants. Therefore, the 10 items requiring rank order were analyzed by a Kruskal-Wallis one-way analysis of variance. Salkind also noted that chi-square was the appropriate test for analysis of the 2 items requiring the participant to mark all applicable answers. A series of between-subjects ANOVAs was used to compare how the adult

participants answered the 14 questions requiring one best answer. Again, Salkind advocated using between-subjects ANOVA when the data between various groups were being compared.

To analyze the qualitative data derived from the seven open-ended questions on the questionnaire, Leedy and Ormand (2005) suggested a 4-step plan. The first step was to perform open coding during which “data are divided into segments and then scrutinized for commonalities that reflect categories or themes” (p. 141). The second step, known as axial coding, provided a means to make interconnections among categories and subcategories. These first two steps were followed by selective coding which added in describing what happened in the phenomenon being studied and finally the development of a theory to explain to what extent if any the two interventions in the present study impacted the ISAT scores of the participants.

Furthermore, Leedy and Ormand (2005) discussed the nature of qualitative research. In doing so, these authors noted, “Qualitative researchers rarely try to simplify what they observe. Instead they recognize that the issue they are studying has many dimensions and layers, and so they try to portray the issue in its multifaceted form” (p. 133). The purpose of the second research question was to investigate the many dimensions and layers of factors that might have impacted the ISAT scores of participants in the study. The use of two standardized tests for pre- and post-testing combined with school records and participant questionnaires provided a triangulation of data to answer the research questions.

This dissertation addressed the impact of two different interventions that a small, rural school in the Midwest used to raise scores. Additionally, the researcher looked for

patterns to emerge in qualitative data that might help explain the impact or lack of impact the interventions made.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

The purpose of this research was to determine what effect two interventions had on the ISAT scores of student participants in grades three through five in a small rural school in the Midwest. The primary research question addressed the two interventions and their impact on student achievement on the ISAT test. The specific interventions used were an after-school program named Newton's Academy and an extended-year program, commonly referred to as summer school. To address the first research question, the literature review will include five areas: (a) accountability in school performance, (b) summer school programs, (c) after-school programs, (d) Response To Intervention, and (e) implications for small rural schools.

Because this study was both quantitative and qualitative in nature, two additional research questions sought to determine what other factors might have impacted the ISAT scores of the participants in the study. Therefore, the review of literature includes a sixth area (f) other factors which can determine the effectiveness of interventions including student attendance, student discipline, student perception of the interventions, teacher training, stakeholder perceptions of the interventions, and socio-economic status of the participants.

Accountability in School Performance

The issue of accountability in school performance is not a new one. According to Stuckart and Glanz (2007), the present concern over school accountability can be traced back to 1938 when John Dewey published his monograph *Experience and Education*. At that time education authorities held opposing views about school structure. On one hand were the traditionalists who “favored an authoritarian structure that emphasized rote memorization” (p.17). On the other hand were the progressives who felt learning should have “few barriers and the free flow of ideas” (p. 17). Stuckart and Glanz contended that Dewey wanted to bridge these two philosophies “by establishing a multidimensional philosophy of education that was grounded in the learning environment and human nature” (p. 17). It has now been 70 years since the publication of Dewey’s monograph; but according to Stuckart and Glanz there remain the vestiges of this conflict between philosophies, and those conflicts have become evident in the issues of accountability and high stakes testing.

President Lyndon B. Johnson broadened the federal role in schools in 1965 when he signed into law the Elementary and Secondary Education Act (ESEA). Robelen (2005) acknowledged that the fundamental purpose of the 1965 ESEA was to help facilitate the academic growth of disadvantaged students through the Title I section of the federal program. Robelen pointed out that President Johnson’s initiative was reauthorized as the Elementary and Secondary Education Act of 2001 which has become commonly known as No Child Left Behind. Robelen contended that the original mission of the 1965 act was reflected in the 2001 reauthorization. President Johnson focused “on delivering federal aid to help level the educational playing field for poor and minority children” (para. 8).

Johnson wanted all students to have access to a quality education. Forty years later in an executive summary, President George Bush (2008) authorized a statement that said, “[A]fter spending billions of dollars on education, we have fallen short in meeting our goals for educational excellence. The academic achievement gap between rich and poor, Anglo and minority is not only wide, but in some cases is growing wider still” (p. 1). Quality education for all students continues to be a concern of the federal government.

Federal involvement in education did not take one giant leap from President Johnson’s ESEA of 1965 to President Bush’s reauthorization in 2001; there were incremental steps along the way. One such step occurred in 1983. According to a report issued by the U.S. Department of Education (2008), in the spring of 1983 the U.S. Department of Education released a report entitled *A Nation at Risk* that made Americans aware that America’s “world-class educational system was not keeping pace with the progress of other nations” (p. 1). The 2008 report was a review of the progress the United States has made in education since *A Nation at Risk* was first published in 1983. The original report “found that about 13 percent of 17-year-olds were functionally illiterate, SAT scores were dropping, and students needed an increased array of remedial courses in college” (p.1). Because of these statistics the 1983 National Commission on Excellence in Education recommended improvement in five areas: content, standards and expectations, time, teaching, and leadership and fiscal support. Several of the recommendations made in 1983 reached a new level when President George W. Bush signed into law the No Child Left Behind Act of 2001.

One such recommendation by the National Commission on Excellence (1983) was that schools raise academic expectations and measure academic performance using

measurable standards. According to archived information on *A Nation at Risk: The Imperative for Educational Reform*, the 1983 Commission recommended “that schools, colleges, and universities adopt more rigorous and measurable standards, and higher expectations, for academic performance and student conduct. . .” (para.17). The Commission further recommended:

Standardized tests of achievement . . . should be administered at major transition points from one level of schooling to another . . . The purposes of these tests would be to: (a) certify the student’s credentials; (b) identify the need for remedial intervention; and (c) identify the opportunity for advanced or accelerated work. The tests should be administered as part of a nationwide . . . system of State and local standardized tests. This system should include other diagnostic procedures that assist teachers and students to evaluate student progress. (para. 20)

This recommendation was amended in 1994 by President Bill Clinton. According to Robelen (2005), President Clinton signed a reauthorization of the Elementary and Secondary Education Act in 1994. In this reauthorized version of the law the states were once again mandated to develop standards and to align assessments for all students. Additionally, for the first time districts were to identify those schools which were not making ‘adequate yearly progress.’ Clinton’s law also stated that districts where schools failed to make adequate yearly progress were to take steps to improve the academic achievement of the student population.

President George Bush built upon and extended the ESEA of 1994. Section 1111 of the No Child Left Behind Act (2001) states, “Each State plan shall demonstrate that

the State has adopted challenging academic content standards and challenging student academic achievement standards that will be used by the State, its local educational agencies and its schools . . .” (115 STAT.1445). Section 1111 also states that each state must demonstrate that it has a plan in place that ensures “that all local educational agencies, public elementary schools, and public secondary schools make adequate yearly progress” (115 STAT. 1446). The No Child Left Behind Act of 2001 extends Clinton’s reauthorization of the ESEA in 1994 while at the same time reiterating and expanding the concerns addressed in the 1983 Commission’s report on the state of education in the United States, a report that was published 18 years after President Johnson signed into law the Elementary and Secondary Education Act of 1965.

Since 1965 the federal government has taken up Dewey’s attempt to build a bridge between the philosophies of the traditionalists and the progressives. While doing so, the government has enacted various laws, the purpose of which is to ascertain that students are meeting the high expectations set for all students and at the same time are being encouraged to fulfill their individual potential.

One of the most important changes in the government’s attempt to raise the academic standards in the United States and to make schools accountable for meeting those standards comes in the form of sanctions for schools that do not demonstrate their ability to make adequate yearly progress. Before President Bush signed the No Child Left Behind Act, schools were told to raise standards and to submit plans, but there were no sanctions in place for schools who failed to do so. That changed in 2001 when President Bush signed the law which would place sanctions on schools receiving federal grant money and which were not making adequate yearly progress. According to Section 6213

of the No Child Left Behind Act (2001), a school that has received federal grant money for Title programs for at least three years must meet the standards for adequate yearly progress, or the school could lose its ability to continue its participation in the Title programs. Furthermore, Smith (2005) stated:

If a school fails to make AYP, a series of sanctions can be administered by the school district. The form of these sanctions ranges from district level monitoring through to giving parents the option to transfer their children out of ‘failing’ schools and providing students who remain in the school with additional tutoring. In more extreme cases, where a school fails to make AYP for four or more consecutive years, that school can be faced with having to replace staff, aspects of the curriculum or, at the extreme, be restructured as a Charter school or one run by a private company. (p. 509)

According to NCLB (2001) the requirements to meet AYP become more stringent each year until the year 2014. According to NCLB schools must

. . . establish specific annual, measurable objectives for continuous and substantial progress by each group of students specified in section 1111(b)(2)(C)(v) and enrolled in the school that will ensure that all such groups of students will, in accordance with adequate yearly progress as defined in section 1111(b)(2), meet the State’s proficient level of achievement on the State academic assessment described in section 1111(b)(3) not later than 12 years after the end of the 2001–2002 school year. . . . (115 STAT. 1481)

One of the difficulties faced by school administrators is the added requirement in NCLB (2001) that certain disaggregated groups of students must meet the same accountability requirements as the general school population. The disaggregated groups are listed in Section 1111 of the law and include economically disadvantaged students, students from major racial and ethnic groups, students with disabilities, and students with limited English proficiency. The law clearly states that these subgroups must meet the same standards as the general student population (115 STAT. 1445). Section 1825 further discusses the need for schools to use appropriate interventions “to teach and address the needs of students with different learning styles, particularly students with disabilities, students with special learning needs (including students who are gifted and talented), and students with limited English proficiency” (115 STAT. 1629). Therefore, school administrators are seeking to implement interventions which will improve the academic outcomes for all students, but particularly for the students in the subgroups who generally struggle the most to attain high academic standards. As Smith (2005) pointed out, “One of the reasons why many schools which would otherwise be successful on state accountability measures, might be deemed to be failing under NCLB, is due to the Act’s strict rules for student subgroups” (p. 512). Not only must these interventions be implemented, but schools must show that the interventions are working. School administrators must rely on scientifically-based research to determine if the intervention or instructional strategy is benefitting the students. These methods must provide reliable and valid data derived from experimental or quasi-experimental designs in which appropriate controls are used to evaluate the effects of the intervention or instructional strategy (115 STAT. 1964).

The purpose of the current research is to address the requirements set forth in NCLB (2001). The current research was a study of two interventions implemented in a small rural school for the purpose of raising the ISAT scores of students identified by administrators as being at-risk. The two interventions were an extended-year program commonly known as summer school and an extended-day program named Newton's Academy. The study was designed to include a control group and to address the issues of reliability and validity.

History of Summer School Programs

Just as school accountability is not a new idea, the concept of summer school for school-aged children in the public education system is not new. According to Heyns (1986) "Summer schools have been a strategy of educational remediation, reform, and enrichment for over a century and half" (III-4). Heyns explained that the original school year was based on the needs of an agrarian society in which school-aged children were needed on farms to help with the planting and harvesting of crops. This agrarian society began to change as immigrants and former rural dwellers found their way to urban areas. No longer were children needed on the farm to help with the planting to harvest cycle of farming. Schools in the urban areas began to feel pressure to keep school children occupied during the summer months as well as the traditional nine months of school. Heyns continued by saying that schools began looking for ways to keep students busy year around. Therefore, schools began offering language training for the many new immigrants who came to America during the mid-nineteenth century with little or no knowledge of the English language. For others, the school provided recreation programs and other special programs.

Earlier, Austin et al. (1972) also noted that prior to the 1950s “summer programs with an emphasis on compensatory education appeared only occasionally as an incidental component of the recreational aspect of summer school” (p. 172). Austin et al. continued by saying that the United States saw a rapid rise in the number of summer schools established for the purpose of recognizing and ameliorating the special problems of the culturally deprived in the 1960s.

Heyns (1986) concurred noting that President Lyndon B. Johnson’s signing of the Elementary and Secondary Education Act of 1965 rekindled an interest in summer school. This interest in summer school programs continued, and Heyns noted that by the mid-1980s,

Many, perhaps most, summer programs [were] targeted to particular groups; the groups include[d], but [were] not limited to low achievers; bilingual migrants; students making up failing grades in required courses; students interested in art, computers, or some other subject neglected in the regular program; handicapped students; and students judged to need compensatory education or remedial work. (III-4)

Today, school administrators are once again looking at summer school as one intervention that may help struggling students raise their scores on high stakes achievement tests which schools use to demonstrate an individual school’s progress towards making adequate yearly progress. As noted earlier, one of the mandates of NCLB (2001) is that interventions should be initiated to help students meet AYP goals. In addition, these interventions should reflect scientifically-based research to ascertain the effectiveness of the intervention.

Although considerable research has been conducted to determine the effectiveness of summer school as an intervention to help at risk students, researchers have disagreed over the effects of summer school. Entwisle, Alexander, and Olsen (2001) noted that if summer school was meant to close the gap between students from low social economic groups and students from higher social economic groups, then a paradox existed. Entwisle et al. pointed out that the regular school year appeared to be an equalizer for poor and middle-class students. Entwisle et al. contended that during the regular school year there was little difference between the academic gains of low and middle-class students. It was during the summer that poor or disadvantaged children seemed to lose ground academically. Even when poor and disadvantaged children went to summer school and their middle-class counterparts did not, the more affluent students made higher gains during the summer than those attending summer school.

Entwisle et al. (2001) suggested a 'faucet theory' accounted for this phenomenon. The 'faucet theory' meant that when school was in session during the regular school year, a faucet of resources was turned on, and all children benefitted and gained equally. During the summer the school's resource faucet was turned off, and poor parents were unable to make up for the resources that had previously been provided by the school. On the other hand, more affluent parents could continue to provide resources during the summer when the school was not doing so. Therefore, the children from more affluent families continued to show academic growth during the summer even when they were not attending summer school. When the new school year commenced in the fall, the more affluent children who did not attend summer school showed more summer gain than their poorer counterparts who had attended summer school. Once again, during the school year

both socio-economic groups gained equally once the resource faucet was turned back on. However, the poor and minority children never caught up because each summer the gap would become wider. Entwisle et al. believed so strongly in the ‘faucet theory’ that they contended that if all children attended summer school, the gap would grow even larger between the rich and poor. Borman (2001) concurred with Entwisle et al. by stating, “. . .it has become a well-established fact that what happens during the summer has tremendous implications for understanding and addressing the persistent achievement gaps that separate poor and minority students from their middle-class peers” (p. 28).

Early studies (e.g., Curtis, Doss, & Totusek, 1982; Hoepfner, 1980; Heyns, (1986) of the effects on the academic achievement of students who attended summer school programs were not particularly promising. Heyns pointed out that Klibanoff and Haggart’s (1981) study represented the only attempt at an in-depth study of summer programs throughout the United States. Klibanoff and Haggart’s Sustaining Effects Study examined data from the 1975-76 school year. The data were collected from a 15-item principal survey administered to 5,010 elementary principals. The response rate, exceeding 99 %, provided a wealth of data regarding programs, policies, and students in the principals’ schools. Klibanoff and Haggart stated as one of the key results of the study,

Students who attend summer school grow at the same rate over the summer as students who do not attend summer school. This finding casts doubts on the academic effectiveness or cost-effectiveness of summer school as presently conducted, but must be interpreted cautiously in view

of the small amount of instruction currently available in summer school programs. (p. xxi)

Hoepfner, who was the Design and Analysis Manager for the Sustaining Effects Study of System Development Corporation in Santa Monica, California, concluded, “. . .summer school, as presently implemented, appears not to be helpful at all, even though this conclusion is based partly on data suffering from selection bias” (p. 82). However, Hoepfner continued by saying that it was possible that summer school might increase achievement during the year following summer school by preparing the student for greater achievement during the regular school year. Therefore, Hoepfner studied the academic achievement of the summer school attendees into the following school year. He concluded, “Attendance at summer school appears to have no strong ameliorative effect on achievement, either short-term or longer-term” (p. 82). Likewise, in a paper presented at the Annual Meeting of the American Educational Research Association, Curtis et al. reported on the examination of summer school programs in Austin, Texas, and concluded, “Unfortunately, summer schools in Austin and across the country are typically ineffective . . . they do not result in better academic performance for students who attend than comparable students who do not attend” (p. 6).

Another concern was noted by Austin et al. (1972), who questioned whether gains reportedly made during summer school were reliable. Austin et al. stated, “Since the advent of accountability programs, measurement specialists have been particularly concerned with the reliability of gain scores. . . For inferring changes in individual students, the reliability of such short-term gain scores is likely to be of dubious utility” (p. 174). Likewise, Alexander, Entwisle, and Olson (2007) said that the testing schedule

itself could lead to bias. Alexander and Entwisle noted that in-school and summer learning were affected by testing dates and contended that “the September through June ‘school year’ becomes October through May, if that is the testing schedule. Consequently, the school year is typically understated and summer is overstated” (p. 168).

Austin et al. (1972) and Alexander et al. (2007) were not the only researchers concerned with the methodology used to study the effectiveness of summer school programs. Heyns (1986), as mentioned earlier, noted that little effort had been made prior to Klibonoff and Haggart’s (1981) Sustaining Effects Study to obtain data from summer programs on a national scale. Instead, Heyns contended that based on descriptive accounts, summer programs were as diverse as regular school programs and no effort had been made to account systematically for the diversity in the programs. Another concern that Heyns noted was the testing procedure used for determining whether or not there truly was a summer loss for students during the summer. Klibanoff and Haggart found that “. . . for students in general, an absolute drop-off in mean achievement score is not common” (p. 37). Heyns attributed this conclusion “to adjustments made for the testing schedule” (p. 19). As noted earlier, Alexander and Entwisle (2007) had similar concerns about the testing schedule biasing the results of tests.

Borman and Dowling (2006) and Stone, Engel, Nagaoka, and Roderick (2005) conducted research on two of the largest summer school programs in the United States. Borman and Dowling looked at the effects of multiyear summer school in the Teach Baltimore program while Stone et al. studied Chicago’s Summer Bridge Program. Borman and Dowling’s research was a three-year study of 438 students from high-

poverty schools in a large metropolitan area. Once again the research addressed the issue of summer learning loss among disadvantaged students in high-poverty areas. The analysis of data collected over the three-year period during which the researchers examined achievement during both summer school and regular school caused Borman and Dowling to “suggest that a voluntary summer school program developed specifically to avert the summer achievement slide [could] help prevent students from falling behind and [could] have a positive impact on students’ longitudinal learning outcomes” (p. 45). However, the researchers presented a caveat with their findings. Borman and Dowling said that simply assigning students to the program was insufficient to make a difference. Instead, the researchers suggested that participation should be voluntary and acknowledged the difficulty of sustaining a 3-year commitment to the program. They further suggested aligning the content of the summer program with that of the regular school as a means of convincing parents, teachers, and principals of the importance of the summer program as a means to continued academic success during the regular school year. Borman and Dowling noted that the effects for those attending the Teach Baltimore Summer Academy were promising, but they stated, “it is not clear to what extent the observed outcomes generalize to other more traditional mandatory remedial summer school programs, such as the well designed Chicago Summer Bridge effort” (p. 46).

Stone et al. (2005) addressed that very issue in their research on Chicago’s Summer Bridge Program. After analyzing data collected between 1997 and 2000, Stone et al. concluded, “Many students in the program achieve[d] substantial test score gains” (p. 936). Not only did Stone et al. examine achievement test scores, but they also examined the students’ perceptions of the Summer Bridge Program. From the analysis of

surveys administered to students in the program, Stone et al. concluded that, “The small class size, standardized curriculum, and relatively uniform ability levels of these classrooms [were] well-matched to low-performing students’ needs” (p. 952). One of the concerns the researchers noted was the fact that some students did not reach the test score cutoffs even though they had substantial learning gains in the program. Stone et al. acknowledged that failing attempts to meet test score cutoffs could erode the effects of the positive learning experience the students had and erode their sense of self-worth. Stone et al. also noted that the achievement test score gains were consistent with the findings of Cooper et al. (2000).

Cooper et al. (2000) conducted a meta-analysis of research that had evaluated summer school programs and that had been published between January 1967 and August 1998. A total of 5,347 documents met the original search requirements. That number was reduced to 2,196 by a search for documents that contained at least one research term. Further selection efforts reduced the number of documents to 258 as independent researchers on the research team analyzed documents for the presence of an empirical evaluation on the effects of summer school. Cooper et al.’s research was notable for its extensiveness and methodology. Since the publication of the meta-analysis, many researchers (eg.; Alexander et al., 2007; Borman, 2001; Borman et al., 2005; Borman & Dowling, 2006; Opalinski, Ellers, & Goodman, 2004; Stone et al., 2005) have cited Cooper et al. as one of the leading authorities on summer school programs. Following the analysis of data, Cooper et al. reached five main conclusions. “First, summer school programs focused on lessening or removing learning deficiencies have a positive impact on the knowledge and skills of the participants” (p. 89). “Second, summer school

programs focusing on acceleration of learning or on other or multiple goals also have a positive impact on participants roughly equal to programs focusing on remediation” (p. 91) “Third, summer school programs have more positive effects on the achievement of middle-class students than on students from disadvantaged backgrounds” (p. 91). “Fourth, remedial summer programs have larger positive effects when the program is run for a small number of schools or classes or in a small community” (p. 92). “Fifth, summer programs that provide small group or individual instruction produce the largest impact on student outcomes” (p. 92).

In addition to these conclusions, Cooper et al. (2000) discussed several inferences the researchers considered as valid. One important inference was that larger effects occurred in summer programs that required some kind of parent participation than if no parent participation was required. The researchers also inferred greater effects occurred in remedial summer programs that targeted math achievement rather than reading achievement. Another inference was that students who gained an achievement advantage may see that advantage diminish over time. Because of the results from their data analysis, Cooper et al. inferred that early primary grade students and secondary grade students had greater positive effects from remedial summer programs than did middle school students; and a final inference was,

Summer programs that under[went] careful scrutiny for treatment fidelity, including monitoring to insure that instruction [was] being delivered as prescribed, monitoring of attendance, and removal from the evaluation of students with many absences may produce larger effects than unmonitored programs. (pp. 96-97)

According to Cooper et al. (2000) one surprising finding was that required attendance versus voluntary attendance appeared to have no effect on achievement for those students attending remedial summer programs. The researchers had no explanation for this finding but noted that they had expected volunteering to serve as an indication of motivation and therefore to produce higher achievement effects, but that was not indicated by their data.

Other researchers provided suggestions for summer school programs based on their studies. Christie (2003) suggested additional time for those students who were struggling with math or reading, but she admonished that the additional time must be spent effectively. The researcher continued by saying,

If Tammy attends summer school or an afterschool session in which time is spent on material she's already learned, if she is taught in the same way as she was taught when she failed to learn the first time or if she is presented with material unconnected to or below the level of knowledge expected in next year's classroom, she won't gain as much from her experience. (p. 485)

Likewise Curtis et al. (1982) offered suggestions to make summer school more effective in improving academic achievement. These researchers recommended increasing the length of the summer school day as well as the length of the summer school programs, making summer school more academically rigorous, emphasizing basic skills and major content areas, incorporating behavior modification as well as specific motivation strategies, improving the planning of the summer program, keeping classes

small and including aids and computers to aid the summer school teachers, providing greater continuity between regular school and summer school, and evaluating the summer school program to determine those characteristics that facilitate or impede summer achievement gains (pp. 5-6).

Kociemba (1995) also recommended keeping class sizes small, preferably between 10-15 students. Stone et al. (2005) concurred that small class size was important to making a summer school program more effective. These researchers concluded that small class size allowed teachers to meet students' individual needs, and such efforts by the teachers resulted in larger student learning gains in Chicago's Summer Bridge Program. In a survey administered by Stone et al. to participants in the Summer Bridge Program, student participants "reported exposure to new content, increased attention from their teachers, and a learning environment geared to ensuring that all students mastered material" (p. 952) made the summer school experience more positive than that of the regular school year. It appears that though the effectiveness of summer school programs in general are unclear, researchers have found attributes of some summer school programs that raise the potential for academic gain by participants.

History of After-School Programs

Extended-day programs, those programs that take place before or after regular school hours, are a more recent development than extended-year programs, more commonly known as summer school programs. Some similarities exist between summer school programs and extended-day or after-school programs. As mentioned earlier, summer school programs were initiated in the mid-nineteenth century to provide recreation, enrichment, and supervised care for urban children during the summer months

when schools were not in session. Fashola (1998) noted that interest in programs for after-school hours is a more recent development but one that began for some of the same reasons that summer schools were started. Educators and policy makers saw that programs taking place after regular school hours were a way to supervise children during a time when a lack of adult supervision could result in anti-social and destructive behaviors. Likewise, these programs could provide enrichment activities that might be missing during the regular school day. Finally, Fashola stated, “after-school programs can perhaps help to improve the academic achievement of students who are not achieving as well as they need to during regular school hours” (p. 1). Because the current study is trying to ascertain the impact of an after-school program on the ISAT scores of those who attended the after-school program, it is appropriate to review the literature concerning the effectiveness of extended-day programs.

In a review of extended-day and after-school programs, Fashola (1998) noted that after-programs vary in their purpose and that the benefits of the programs are not well understood. Like the studies of summer school programs, the studies of the effects of after-school programs are few; and researchers completing the studies have reported inconsistent findings regarding the effects of the programs on academic achievement.

Fashola noted:

One recent trend in some extended-day programs is the development of curricula tied to district, state, and national goals, yet designed to be taught after-school. Such programs may involve well-designed curricula, teacher training, and student assessments. These programs provide students with complete, well-tested approaches, resources, trainers, and so on, reducing

the need for every school to reinvent the wheel. Some seem promising, have been widely used, and have at least anecdotal indications of effectiveness in individual schools that have made gains. (p. 5)

Because the subject of the current study is an after-school program for the purpose of improving academic achievement, this part of the literature review will focus on those programs implemented for that purpose.

One of the most detailed studies of an after-school programs was completed by James-Burdumy et al. (2005) for the U.S. Department of Education. The purpose of the study was to report on a national evaluation of the 21st Century Community Learning Centers Program. Schools participating the 21st Century Community Learning Centers Program were those schools that received funding from 21st Century grants for the purpose of implementing after-school programs. The evaluation process began in October 1999 and included data that were collected for three years beginning in 2000 and ending in 2003. The elementary school study included 12 school districts and 26 centers. One of the preconditions for a center's participation was that there were more students interested in attending the center than what the center could serve. The elementary school study also used random assignment of students to treatment and control groups. This was important to the study because the researchers wanted to ensure that any outcome differences between the treatment group and control group could be attributed to the after-school program. One outcome stated in the report was, "There were no differences between treatment-group students and control-group students on most academic outcomes" (p. xviii). This held true for academic outcomes in reading, English, mathematics, science, and social studies. The report continued, "There also were no differences in time spent on

homework, preparation for class, and absenteeism [between treatment and control groups]” (p. xviii). In other areas of the evaluation by James-Burdumy et al. for the U.S. Department of Education—the occurrence of negative behaviors, developmental outcomes, parent involvement, and subgroup impacts—little if any difference was noted between the treatment groups and the control groups. In the case of negative behaviors teachers noted that treatment-group students were more likely than their control-group counterparts to engage in negative behaviors during the school day, not necessarily during the after-school program. The one area that the report noted there was an impact was in the area of students’ feeling of safety. Three-quarters of the students in the treatment group reported that they felt ‘very safe’ while participating in the after-school program. In summary, the report on the evaluation of 21st Century Community Learning Centers indicated little, if any, evidence that the after-school program had any positive impact on improving students’ academic achievement.

Although the U.S. Department of Education evaluated after-school programs funded by 21st Century grants to see if grant money was being used effectively, Slavin and Fashola (1998) took a different approach. Slavin and Fashola evaluated different after-school programs implemented in elementary and secondary schools. These programs were widely available to anyone who wished to implement them, and there was at least some evidence of positive effects on student academic achievement. In order to conduct the study, the researchers “attempted to apply a consistent standard of effectiveness and replicability that [was] fair to different programs with different research traditions” (p. vii). Basically, the researchers wanted to discover which after-school programs the evidence would support as effective programs. Slavin and Fashola

contended that the reason the educational reform movement of the 1980s and 1990s had had so little impact on student achievement was because the educational reforms were directed more towards state standards and assessments rather than on how well anything was taught. After-school programs were one example of a school change model suggested by the reform movement of the 1980s and 1990s. Slavin and Fashola saw the need to test for the effectiveness of such programs and to provide educators with a means of comparing their own programs to those that have been deemed effective based on a scientific study. One problem encountered was locating programs with adequate research designs to show evidence of effectiveness.

Slavin and Fashola (1998) reviewed hundreds of articles on school programs meant to increase the academic achievement of the students. In doing so, the researchers were able to identify four sets of conditions that were usually present in effective programs. These conditions were:

1. Effective programs have clear goals, emphasize methods and materials linked to those goals, and constantly assess students' progress toward the goals.
2. Effective and replicable programs have well-specified components, materials, and professional development procedures.
3. Effective programs provide extensive professional development.
4. Effective programs are disseminated by organizations that focus on the quality of implementation. (pp. 64-66)

Slavin and Fashola elaborated on their first condition. The researchers emphasized the need for a small set of well-specified goals along with clear procedures and materials

linked to those goals. They also stressed the need for any intervention to be linked with the desired outcome. Because after-school programs are considered an intervention, this condition seems particularly pertinent to such programs.

Once a school had determined what program might best meet its needs, Fashola (1998) noted that administrators of the after-school programs were able to make good use of school resources that might be in short supply for a regular classroom. Because after-school programs usually have limited numbers of participants, such resources as computers, tutors, and volunteers were more readily available to the students in the program. Lauer et al. (2006) concurred that using tutors for instruction in after-school programs was beneficial by noting, “One of the strongest effects . . . was the positive impact of tutoring on reading, and this type of instruction occurred only in the studies of after-school programs” (p. 304).

Lyle’s (2007) study differed in several ways from the studies already mentioned. The research of Slavin and Fashola (1998) and Fashola (1998) focused on reviewing a number of after-school programs for the purpose of identifying those conditions that resulted in effective outcomes in academic achievement. Furthermore, Slavin and Fashola as well as Fashola used quantitative measures to determine what positive effects resulted from each of the after-school programs. On the other hand, Lyle conducted a study of an after-school program in one school in Tennessee. The school that Lyle studied was, in fact, one of the recipients of a 21st Century grant and was considered a 21st Century Community Learning Center. Lyle’s findings did not always agree with the findings of the meta-analysis previously mentioned nor did the findings agree with the larger evaluation of 21st Century Community Learning Centers. That may have been in part due

to the fact that Lyle's study was a study of the stakeholders' perceptions of the after-school program, not the study of the actual increase in standardized test scores. The researcher's data collection did not include pre and post standardized test scores of the student participants. Although Lyle did state,

The students who participated in the program were considered 'at-risk.'

At-risk means that their academic achievement is significantly below grade level as measured by the Tennessee standardized test, the Tennessee Comprehensive Assessment Program (TCAP), benchmark tests, teacher recommendations, and classroom grades. (p. 38)

Lyle (2007) noted 5 major conclusions:

1. Generally each stakeholder viewed the after-school program as helpful in improving students' academic abilities and student's classroom behavior.
2. This study found that the after-school program does help students' academic achievement, and that this helps improve classroom behavior as perceived by parents.
3. After-school programs should develop and implement strategies centered around after-school programs that lead to increased parent awareness of after-school activities.
4. This study found that teachers are by and large supportive of the after-school program. Teachers perceived that the after-school program was effective on student achievement and classroom behavior. Because

teachers are usually supportive, the planning and development of any such programs should include teachers.

5. Whenever possible regular day classroom teachers should be involved in working with after-school teachers with planning and development. And there should be links to the regular school program so that after-school teachers are more closely teaching the same standards that are taught during the regular school day. (pp. 105-106)

It appears that some of the same problems exist with the evaluation of after-school programs as exists with the evaluation of summer school programs. Studies of both programs tend to lack scientifically-based methodologies. Furthermore, studies that showed positive effects for after-school programs such as the ones conducted by Lyle (2007) and James-Burdumy et al. (2005) were studies that included the perceptions of stakeholders in the after-school programs rather than merely quantitative studies of the actual increase in academic achievement. The current research attempts to evaluate after-school programs, both quantitatively and qualitatively.

Response to Interventions (RTI)

According to a report prepared by the National Joint Committee on Learning Disabilities (2005),

The concept of RTI has always been the focus of the teaching/learning process and a basic component of accountability in general education: In other words, does instruction (i.e., strategies, methods, interventions, or curriculum) lead to increased learning and appropriate progress? (p. 1)

Both the after-school and the extended-year programs in the current research are interventions, the purpose of which is to increase learning. The concept of Response to Intervention has been popularized by recent changes to the Individuals with Learning Disabilities Act (IDEA). The reauthorization of IDEA in 2004 specifically states,

Almost 30 years of research and experience has demonstrated that the education of children with disabilities can be made more effective by . . . providing incentives for whole-school approaches, scientifically based early reading programs, positive behavioral interventions and supports, and early intervening services to reduce the need to label children as disabled in order to address the learning and behavioral needs of such children. (118 STAT. 2649)

Because children with disabilities belong to one of the disaggregated groups singled out in NCLB who must meet the same high standards set by the individual states as the general student population, school administrators and educators in general have become increasingly interested in finding ways to help students with learning disabilities meet high standards.

One of the difficulties faced by educators is the need to define ‘learning disabled’ when applied to a child in the classroom setting. Lyon et al. (2001) noted:

The term learning disability (LD) is traditionally synonymous with the concept of *unexpected underachievement*—specifically, students who do not listen, speak, read, write, or develop mathematics skills commensurate with their potential, even though there has been adequate opportunity to learn. Historically, unexpected underachievement has been attributed to

intrinsic neurobiological factors that indicate that students with LD will require specialized instruction to achieve at expected levels based upon some index of aptitude, usually an IQ test score. (p. 261)

In other words, educators traditionally defined learning disabled as a discrepancy between performance and aptitude.

Fuchs and Fuchs (2005) noted that IDEA 2004 permits educators to supplement or substitute Response To Intervention for the former means of disability identification. Specifically, IDEA of 2004 states, “In determining whether a child has a specific learning disability, a local educational agency may use a process that determines if the child responds to a scientific, research-based intervention as a part of the evaluation procedures” (118 STAT. 2706). Fuchs and Fuchs described a three-tier system of introducing students to interventions and evaluating their response to them. At the beginning of the school year, all students are screened to determine those students who might be ‘at risk’ for school failure. This initial screening is the first step of the RTI system. Fuchs and Fuchs acknowledged that there is more than one way to accomplish this screening, but that it should involve all students in the classroom. After the screening, Tier 1 of the system is implemented. Tier 1 of the system is the least restrictive; the teacher implements evidence-based curricula and pedagogical strategies in the regular classroom for all students. The students who have been identified as ‘at risk’ are carefully monitored for eight weeks to determine how well they respond to the general education curricula and strategies. Those students who respond to the

general education practices continue receiving the same instruction as the general classroom.

Those students who do not respond to Tier 1 efforts remain ‘at risk’ and according to Fuchs and Fuchs (2005) receive

small-group instruction with no more than 2 additional students who share similar instructional strengths and weaknesses. This group is taught at least 3 times per week, 30 minutes per session, by a certified teacher or aide who can accurately implement a scientifically validated, standard tutoring protocol (p. 58).

This small group instruction is an intervention that constitutes part of Tier 2 of the response-to-intervention system. Once again, these ‘at risk’ students are carefully monitored for eight weeks to determine if the intervention improves their academic progress. If students have improved, the intervention continues until students are able to perform successfully in the general classroom. After-school programs and summer school programs are two types of interventions that could be implemented to address Tier 2 of the system.

According to Fuchs and Fuchs (2005), “The Tier 2 nonresponders receive an individualized, comprehensive evaluation that addresses all eligibility determination, evaluation, and procedural safeguards specified in IDEA” (p. 58). The purpose of the comprehensive evaluation process is to determine the presence of mental retardation or the possibility of an emotional/behavior disorder. In the absence of mental retardation or an emotional/behavior disorder, the student would be classified as learning disabled (LD) and would receive appropriate special education services. This three-tier system is a

means to ensure that schools do not identify a disproportionate number of students as learning disabled nor do schools fail to identify early in the educational process those students who are LD and need special education services.

According to the National Joint Committee on Learning Disabilities (2005), “A key element of an RTI approach is the provision of early intervention when students first experience academic difficulties, with the goal of improving the achievement of all students, including those who may have LD” (p. 1). The three-tier system described by Fuchs and Fuchs (2005) enables educators to make an early diagnosis of learning difficulties while at the same time improving the achievement of all students as teachers implement evidence-based curricula and best practices in their classrooms. The National Joint Committee on Learning Disabilities (NJCLD) noted that in the past special education services have been used to serve struggling students who did not have LD or other learning disabilities. The NJCLD suggested an RTI approach,

as a way to reduce referrals to special education by providing well-designed instruction and intensified interventions in general education, thereby distinguishing between students who perform poorly in school due to factors such as inadequate prior instruction from students with LD who need more intensive and specialized instruction. (p. 2)

Furthermore, the NJCLD noted that RTI is typically understood in the context of a 3 or 4-tier model much like the one described by Fuchs and Fuchs. The 3-tier model becomes a 4-tier model when 2 sub-tiers constitute Tier 2. One possibility of sub-tiers suggested by the NJCLD was that first a teacher might collaborate with a single colleague, and later, if necessary, involve a multidisciplinary team in the problem solving effort. Another way

that the 3-tier model might be expanded into a 4-tier model is for more than one type of intervention to be implemented during Tier 2. Reschley (2005) concurred with the NJCLD:

Nearly all agree that the first tier is general education and the final tier is special education. The question is whether there are one or two tiers between the end points on this continuum. The argument for four tiers is that both small-group (Tier 2) and individualized interventions (Tier 3) should be attempted prior to determination of special education eligibility. (p. 511)

Response To Intervention as a means of determining students with learning disabilities is not without drawbacks. The NJCLD (2005) pointed out that “RTI is prone to systematic errors in identifying students with LD” (p. 7). The Committee pointed out that some high-ability students who are performing well below their ability may not receive the individualized instruction because they work within the normal range of the general classroom. Appropriate individualized instruction would more likely enable high-ability students to work up to their potential rather than at the normal level of the general classroom. On the other hand, there are students who may not respond to interventions but who are merely underachievers. According to the NJCLD this group of students most likely includes students who are environmentally disadvantaged, belong to a minority, or are English language learners. Students from these populations may be identified as LD when in reality they “are at risk and in need of specialized supports and instruction for other reasons (eg., lack of motivation, emotional stress)” (National Joint Committee on Learning Disabilities, p. 7)

Likewise, Kavale and Spaulding (2008) acknowledged shortcomings of a strict RTI system for identifying specific learning disabilities (SLD). Both IDEA and NCLB focus on children's learning. However, Kavale and Spaulding suggested that the specific purpose of each of the laws was different. Cortiella (2006) concurred and stated, "IDEA focuses on the individual child with an emphasis on specialized services for children with disabilities" (p. 5), while NCLB seeks "to raise the education of all students" (p. 6). Kavale and Spaulding questioned the future of those students who were able to maintain achievement in the average range with the help of the intervention but would fall behind again when the intervention was removed or the tasks became more difficult (pp. 71-72). These researchers further noted "RTI research appears to have focused on promoting more effective instructional and assessment practices with far less emphasis on alternative identification procedures" (p. 174). In other words, Kavale and Spaulding said the controversy surrounding RTI was whether or not RTI should be used for prevention of learning disabilities or for the identification of learning disabilities. To minimize the differences of prevention vs. identification, Kavale and Spaulding made the following recommendations:

1. Make RTI the exclusive province of general education.
2. Reform RTI into a structured and systematic referral process.
3. Involve special education only *after* RTI failure, when the emphasis shifts from prevention to identification.
4. Modify existing regulations to (a) require use of ability-achievement discrepancy as the first (but not only) marker for SLD, (b) require use of 'a process that determines if the child responds to scientific,

researched-based intervention [i.e., pre-referral]' (P.L. 108-446 614(b)(6)(A) & (B) *before* SLD evaluation, and (c) eliminate the 15 percent special education (IDEA) funding for early intervention (i.e., RTI). (p. 176)

According to Kavale and Spaulding (2008), those using RTI must be cognizant of the purpose for which it is being used. These researchers advocated that it be used as a preventative measure in the general classroom setting to improve education of the general student population, but they cautioned educators not to use it as the sole identifier of students with learning disabilities. Those using after-school programs and summer school programs as an intervention for improving student academic achievement should address this caution.

Furthermore, Fuchs and Fuchs (2005) noted that students who do not respond to interventions at Tier 1 should receive instruction from “a certified teacher or aide who can accurately implement a scientifically validated, standard tutoring protocol” (p. 58), and the NJCLD (2005) acknowledged that the “major challenge to implementing the RTI model are decisions about selecting and monitoring research-based interventions that are matched to students and implemented with fidelity and appropriate intensity, frequency, and duration” (p. 8). The school participating in this study is implementing two interventions, an after-school program and a summer school program, both of which can be used at Tier 1 and Tier 2 levels of the RIT model. Furthermore, these interventions address the No Child Left Behind Act (2001) mandate that schools which do not make adequate yearly progress must implement interventions to raise the academic achievement of all students, including those students in the disaggregated groups of

students from low socio-economic levels, students from racial and ethnic minorities, English language learners, and students with learning disabilities. Therefore, it is imperative that these interventions be research-based and scientifically validated.

Implications for Small Rural Schools

Much of the comprehensive research on summer school programs addresses the summer school programs in large metropolitan areas. Examples are Chicago's Summer Bridge Program (Stone et al., 2005), the Teach Baltimore Program (Borman & Dowling, 2006), and The Minneapolis Public School Summer School Program (Kociemba, 1995). Although research exists for smaller schools, such research is usually included in meta-analyses such as the one completed by Cooper et al. (2000). As was noted earlier, Cooper et al. concluded that much of the research conducted to evaluate the effectiveness of summer school programs suffered from mediocre methodology. Therefore, there are few studies of summer school programs in small rural schools to use as a guidepost for effective practices. In fact, Klibanoff and Haggart (1981) noted, "Schools that have summer programs available for their students tend to have enrollments greater than 400 students" (p. xxii). In more recent research Borman (2001) noted that every one of the 100 largest school districts reported that the district offered some type of summer program to its students, but nothing was said about summer school programs in small school districts. A report representative of how the data from small rural schools become aggregated with that of larger schools was one completed by Cowley, Meehan, Finch, and Blake (2002). Cowley et al.'s research included all of the schools in Kentucky in 1990. In the second stage of a two-stage sampling process, the researchers identified 18 schools from a larger pool of 48 schools identified during the first stage of selection.

These 18 schools were deemed representative of the entire state based on building level, geography, urbanicity, and enrollment. Undoubtedly, small rural schools were included in the 18 schools that were part of the study, but the data were aggregated in such a way that no conclusions could be made based on just the enrollment or geographic location of the schools. This demonstrates a need for separate studies of extended-day and extended-year programs of small rural schools.

Another problem arises when research is conducted in small schools. Because the enrollment is smaller, it logically follows that fewer students participate in extended-day and extended-year programs than would participate in a larger school. Cooper et al. (2000) addressed this issue in their meta-analysis of summer school programs:

The one-group pretest-posttest design provides an equivocal comparison for drawing inferences about program success. Its strength lies in our knowledge of the comparability of the pretest and posttest groups, because they are the same students. Its weakness lies in the confound of the treatment with the passage of time between testings. (pp. 13-14)

Cooper et al. continued by noting that some of this problem could be rectified by carefully choosing a control group and by using care “if the measure of achievement involves grade-level equivalent scores or some other form of normed-referenced index” (p. 13). Cooper et al.’s comments indicated the need for careful consideration of methodology when conducting research in small rural schools where treatment groups and control groups are necessarily small.

Jimerson (2004) further addressed the problem of small student populations in rural schools by noting:

Small schools are especially vulnerable to being misidentified as failing Adequate Yearly Progress (AYP) because small numbers of students take the tests. Small numbers make test results statistically very weak. And since AYP judgments are made on the basis of these unreliable statistics, many small schools and districts probably will be incorrectly identified as ‘failing.’ (p. 6)

Jimerson continued by suggesting that the performance of one or two students, especially those students in a subgroup, could determine whether a school failed or succeeded in making AYP. It appears that the small student population that Jimerson suggested created unreliable statistics for schools determining AYP might also have created the unreliable statistics that Cooper et al. (2000) noted in some of the studies of summer school programs that made the results and conclusions of such programs appear suspect.

The U.S. Government Accountability Office (GOA, 2004) also noted, “More than half of officials in rural districts reported that it was a challenge to offer competitive salaries to teachers, compared with about one-third of officials in non-rural districts” (p. 14). This inability to offer competitive salaries made it difficult to recruit teachers. Related to the problem of offering competitive salaries was the mandate in NCLB that teachers be highly-qualified in the subject area in which they teach. According to GOA, teachers in rural schools were more likely to teach more than one subject than teachers in non-rural schools. Therefore, administrators of rural schools districts found it necessary to compete against non-rural districts in recruiting highly-qualified teachers, and those teachers often had to be highly-qualified in more than one subject if they were teaching in a rural school.

The problem of finding highly-qualified teachers to teach in small rural schools was also addressed by Blanton and Harmon (2005). These researchers specifically addressed issues of math and science education in rural schools. Schools in Illinois use the ISAT as the accountability measure for making AYP. According to NCLB (2001):

The State shall have such academic standards for all public elementary school and secondary school children, including children served under this part, in subjects determined by the State, but including at least mathematics, reading or language arts, and (beginning in the 2005–2006 school year) science, which shall include the same knowledge, skills, and levels of achievement expected of all children. (115 STAT. 1445)

In other words, from its inception NCLB has mandated that states test children in mathematics and since the 2005-2006 school year in science. Blanton and Harmon noted that rural school districts have common issues that have traditionally limited the capacity for creating sustainable improvements in math and science programs. One of the problems encountered by rural districts was a smaller number of district staff with too many job functions and responsibilities. Another problem noted was a lack of district personnel with math/science background as well as limited teacher access to professional development opportunities or inadequate use of existing school improvement resources. A third problem was the turnover in key leadership positions and the lack of mathematics and science specialists in the central office of rural school districts.

It seems that small rural schools face distinctive problems when determining the effectiveness of extended-day and extended-year programs. Some of these problems include a lack of empirical data from research with small rural schools as the exclusive

participants and lack of appropriate methodology in studies in which small rural schools are the exclusive participants. Furthermore, small rural schools often fail to make AYP because of students of low socio-economic status and students with learning disabilities. Finally, starting with the 2005-2006 school year, NCLB mandates that states tests students in science in addition to reading, language arts, and math. This presents a problem unique to small rural schools because such schools face difficulties in recruiting and retaining qualified science teachers and in providing adequate professional development.

Best Practices

Although some researchers (e.g. Austin et al., 1972; Borman et al., 2005; Heyns, 1987) indicated that common sense would dictate that extended-year and extended-day programs would improve student learning, these same researchers noted that the methodology of a preponderance of the studies was flawed to the extent that it became difficult to determine the true effectiveness of the programs. Likewise, Fashola (1998) and Lauer et al. (2006) found similar concerns when studying research of extended-day programs; however, according to other researchers (e.g., Christie, 2003; Denton, 2002; Slavin & Fashola, 1998) there are characteristics of extended-year and extended-day programs that impact the effectiveness on the programs. In order to address the first and second research questions in the present study, it is necessary to review the literature for characteristics of effective extended-day and extended-year programs.

One of the concerns of researchers (e.g., Austin et al., 1972; Borman et al., 2005; Christie, 2003; Curtis et al., 1982) is the amount of instructional time in summer school programs. Curtis et al. noted that summer programs are often too short, usually 3-6 weeks

in duration with four hours or less per day of instruction. Kociemba (1995) concurred, “The majority of the research on summer school seems to indicate that the standard summer school (six weeks, four days per week, five hours per day) typically yields insignificant gains in reading and mathematics achievement scores over the summer” (p. 247). Borman et al. advocated that a summer program last seven weeks with the day beginning at 8:30 AM and ending at 2:30 PM. Curtis et al. also noted that summer school is often too far away from the beginning of the new school year and advocated that summer programs end shortly before the new school year begins.

A second concern was the question of who should teach the summer programs. Denton (2002), Kociemba (1995), and Christie (2003) all mentioned the need for high-quality teachers to teach in summer programs. Denton elaborated on the need for high-quality teachers by acknowledging, “The lowest-performing students need the best teachers, because these students demand more of teachers’ skills and knowledge. Unfortunately, the selection of summer-school teachers usually is unrelated to their abilities” (p. 9). Denton further noted that often the pay teachers received for teaching summer school was not comparable to that which they received during the regular school year, so the financial incentives may not attract the most highly-qualified teachers. Furthermore, Denton stated that because funding often determined whether a summer program would be offered, teachers could not depend on the regularity of summer employment and looked elsewhere thus depleting the pool of teachers with proven success in teaching summer school. Teacher fatigue was also noted as a deterrent for attracting high-quality teachers to summer programs by several researchers (e.g., Austin et al., 1972; Borman, 2005; Heyns, 1987). Teachers felt that they needed a break during

the summer from the intense work required for high-quality student instruction. Further exacerbating the problem of attracting highly-qualified teachers to teach in summer school programs were the low expectations of participants and teachers of the programs themselves (Austin et al., 1972; Borman et al., 2005; Curtis et al., 1982).

At the same time that it seems to be difficult to attract highly-qualified teachers to teach in summer school programs, many researchers (e.g., Borman et al., 2006; Cooper et al., 2000; Denton, 2002; Kociemba, 1995; Schacter & Jo, 2005; Slavin & Fashola 1998) advocated instructional strategies that require highly-qualified educators for implementation. Among the suggestions made by these researchers was the need for a climate of innovation and creativity in summer programs. One example was a summer camp rather than a summer school format proposed by Schacter & Jo. Borman et al., Cooper et al., Kociemba, and Slavin and Fashola all noted the necessity of establishing learner outcomes at the beginning of any program and then constantly monitoring the outcomes of the program. Christie (2003), Curtis et al. (1982), Denton, and Slavin and Fashola advocated a comprehensive plan for research and evaluation of the program results while Kociemba contended that teachers needed to identify learning styles and modify teaching techniques to complement the various learning styles. Finally, Curtis et al., as well as Borman et al., noted a need for greater continuity between regular school and summer school. In order to implement these recommendations, highly-qualified educators using well-developed instructional strategies are needed.

Various researchers (e.g., Christie, 2003; Denton, 2002; Kociemba, 1995; Lauer et al., 2006; Stone et al., 2005) made recommendations based on student perceptions of what constituted a successful summer program. Stone et al.'s research, in particular,

addressed the students' perceptions of what was effective in helping them learn in summer programs. Students said that small classes allowed for increased attention from teachers. This, in turn, created a learning environment ensuring that all students mastered the material. Students also liked relatively uniform ability levels in the classroom because such uniformity led to increased self-esteem and a feeling of success. Borman et al. (2006), Lauer et al., Kociemba, and Stone et al. all noted the preference for one-on-one tutoring and individualized instruction by summer school participants. Stone et al. felt that students' perception of the summer program was a key ingredient to its success.

Without exception, the literature indicated that teaching reading and mathematics in summer school would be most beneficial in increasing academic achievement in the regular classroom (e.g., Christie, 2003; Curtis et al., 1982; Denton, 2002; Kociemba, 1995). Kociemba noted that summer school participants generally made higher gains in reading than in math; therefore, Kociemba advocated spending more time on math than reading in order to realize greater gains in math. Lauer et al. (2006) noted that both elementary and secondary students benefitted from reading instruction during the summer while benefits from math were seen primarily at the secondary level. Borman et al. (2005), Cooper et al. (2000), and Schacter and Jo (2005) all advocated early intervention and felt that the greatest and longest lasting gains in reading were made in the primary grades. Middle school appeared to be the least effective grade level for making academic gains during the summer. Lastly, Stone et al. (2005) and Christie said that students in summer programs needed to be exposed to new content and not just repeat material that had been covered during the regular school year.

Beyond general agreement that reading and mathematics were the two most important areas of instruction that should be included in a summer school program, there was disagreement about what else should be included in the summer program. Whereas Curtis et al. (1982) said that summer school needed to be made more academically rigorous, Borman et al. (2006) contended that educators should include supplemental and enrichment activities that are fun and engaging. Lauer et al. (2006) agreed saying,

OST [out-of-school time] programs need not focus solely on academic activities to have positive effects on student achievement. Study results indicate that OST programs in which activities are both academic and social can have positive influences on student achievement. (p. 307)

Likewise, Denton (2002) advocated engaging students by “connecting the subject matter to real-life situations that are relevant to students” (p. 14). Denton also noted that reading and math, though important, should not be the only subjects taught during summer school.

Other subject areas such as social studies, science and vocational arts provide a plethora of opportunities to continue teaching reading and math in more subtle ways while showing students repeatedly why it is necessary to be able to read and write fluently and solve different types of math problems. (Denton, p. 14)

Although there was general agreement that the focus of summer programs should be on math and reading, researchers such as Lauer et al., Borman et al., and Denton saw the possibility of expanding the summer school program while keeping math and reading at the forefront of the curriculum.

Other suggestions for successful programs were proffered by Christie (2003). Christie noted that an extended-day or extended-year program should not be used as a threat or punishment to students. The programs should be seen as an extension of the regular school program which offers students additional means of making academic gains. Christie also contended that there needed to be a differentiation between students performing below grade level and those who were not applying themselves. This contention supports the need, previously mentioned, for establishing learner outcomes at the beginning of the program and monitoring those outcomes throughout the program. Also supported is the aforementioned need to individualize instruction to meet the instructional needs of each program participant. Furthermore, Borman et al. (2005), Cooper et al. (2000), and Kociemba (1995) noted parental commitment and involvement as a component of successful programs.

Lauer et al. (2006) provided a summary of conclusions and implications for practice and policy related to OST, both extended-year and extended-time programs:

1. OST programs can have positive effects on the achievement of at-risk students in reading and mathematics.
2. The timeframes of OST programs do not influence their effectiveness.

In deciding whether to fund OST programs, policymakers should look at other factors, such as program duration, cost, and implementation issues (e.g., staff recruitment, program location) when choosing between after-school and summer school programs. The feasibility of implementing effective instruction in one-on-one or small-group settings also should be considered.

3. Students in both elementary and secondary grades can benefit from OST programs for improved reading; in contrast, there are indications that benefits for mathematics achievement occur primarily in the secondary grades.
 4. OST programs need not focus solely on academic activities to have positive effects on student achievement.
 5. Administrators of OST programs should monitor program implementation and student learning to determine the appropriate investment of time for specific strategies and activities.
 6. OST programs that provide one-on-one tutoring for at-risk students have positive effects on student achievement in reading.
 7. Research syntheses of OST programs should examine both published and unpublished research and evaluation reports.
 8. Future research and evaluation studies should document the characteristic of OST programs and their implementations.
- Policymakers, administrators, and educators need more evidence on the characteristics of effective OST programs. (pp. 307-308)

Conclusion

There is a long history of school accountability that became a national issue in the United States after President Johnson signed into law the Elementary and Secondary Education Act of 1965. Since that time, each president has reauthorized and expanded the ESEA and has made accountability in education a growing concern. The No Child Left Behind Act of 2001 provided the most detailed description thus far of how administrators

of schools would demonstrate that students were meeting high academic standards. The inclusion of four disaggregated groups of students—students of low socio-economic status, students with disabilities, students from ethnic and racial minority groups, and students of limited English proficiency—to determine whether a school or district was making adequate yearly progress towards meeting high academic standards has created new concerns for school administrators. School officials are seeking interventions to implement which would effectively raise standardized test scores for these at-risk groups.

Two such interventions are extended-day programs and extended-year programs. Those who have studied the effectiveness of such programs are in disagreement as to whether or not the programs help at-risk students make academic gains that translate into higher standardized test scores. There appears to be some evidence of effectiveness, but the faulty methodology used to evaluate many of the programs gives cause for speculation about the results. Methodology of programs implemented in small rural schools present special problems because of the small number of participants used to determine statistical significance.

Administrators of small rural schools are especially concerned about the mandates of No Child Left Behind because of the special concerns small school populations present in meeting the demands of adequate yearly progress. Small rural school administrators, like their urban counterparts, are seeking interventions that address the issue of helping at-risk students succeed academically while at the same time addressing those issues that are unique to the smaller student populations in rural schools.

The current literature indicates the necessity for further research on extended-day and extended-year programs in schools with small student populations in rural school districts.

CHAPTER III

METHODOLOGY

Introduction

A review of the literature indicated a lack of consensus concerning the effectiveness of both summer school programs and after-school programs in improving academic achievement of the participants. Furthermore, the emphasis of the literature was on the interventions implemented in large, urban schools rather than those implemented in small, rural schools. Therefore, the current study addressed this void in the knowledge base.

This chapter describes the case study that was conducted in order to obtain both quantitative and qualitative data to answer the following research questions:

1. To what extent did two intervention programs in one small, rural school district impact the ISAT scores of the program participants?
2. To what extent might other factors such as school attendance, socio-economic status, primary classroom teacher, IEP, and gender have impacted the effects of the intervention programs?
3. To what extent might other factors such as student, parent, teacher, administrator, and board member perceptions of the two interventions have impacted the effects of the intervention programs?

The chapter also includes a detailed description of the setting in which the study took place and of the participants in the study. Additionally, the chapter includes an account of

the data collection tools used and the methods used to analyze the data. Finally, the chapter ends with a discussion of the limitations of the design of the study and the test instruments used to collect data as well as a discussion of how these limitations may have affected the results of the study.

Research Design

The current study was a case study using both qualitative and quantitative methodologies. Robson (2002) stated, “Case study is a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence” (p. 178). Similarly, according to Leedy and Ormand (2005), a case study is “[a] type of qualitative research in which in-depth data are gathered relative to a single individual, program, or event, for the purpose of learning more about an unknown or poorly understood situation” (p. 108). Robson expanded his discussion of case studies by noting that the subject of case studies might include a school or policy implementation and evaluation.

It was appropriate to use a case study approach to study the effects of two interventions on ISAT scores in a small, rural school. The setting was a ‘real life context’ in the sense that no new quantitative assessments were introduced for the purpose of the study. The quantitative assessments were those already in place in the school setting. Additionally, the participants were not manipulated in any way. An experimental group and a control group emerged based on the criteria set by the school administrators for participation in the two interventions. Likewise, the interventions, an after-school program and a summer school program, were implemented in grades three through five as part of the regular school program, not for the purpose of research. Furthermore, the

interventions were implemented for the purpose of improving academic achievement; therefore, evaluation of the interventions was a natural part of the implementation process. A review of the literature revealed that researchers have reached differing conclusions about the effectiveness of summer school programs as well as after-school programs. A case study of a particular school has the potential to add to the knowledge base of research on such programs. As noted earlier, small, rural schools have seldom been the subject of previous research. This case study, therefore, adds to the knowledge base of ‘an unknown or poorly understood situation.’

Both quantitative and qualitative methodologies were used as a means of incorporating ‘multiple sources of evidence.’ Quantitative measures were employed to answer the following research questions:

1. To what extent did two intervention programs in one small, rural school district impact the ISAT scores of the program participants?
2. To what extent might other factors such as school attendance, socio-economic status, primary classroom teacher, IEP and gender have impacted the effects of the intervention programs?

Additionally, both quantitative and qualitative methods were included to answer the following research question:

3. To what extent might other factors such as student, parent, teacher, and administrator perceptions of the two interventions have impacted the effects of the intervention programs?

The current study attempted what Leedy and Ormand (2005) described as the study of “a particular . . . program . . . studied in depth for a defined period of time” (p. 135).

Population

The setting for the study was a small, rural school in the Midwest. According to the Illinois State Board of Education (2008), the district in which the participating school was located had a total student population of 1,555 students in grades K-12 distributed among four different schools. Students attending school in this district resided in five small communities, ranging in population from < 100 to 4,525 (U.S. Census Bureau, 2009) and on the surrounding farmsteads. The school that was the subject of the case study was a grade 3-5 building with a student population of 340 (Illinois State Board of Education).

School administrators determined the criteria for student participation in both the summer school and after-school programs. Summer school participation was limited to 15 students per grade level for a total of 45 students. After-school participation was limited to 12 students per grade level for a total of 36 students. To determine who would be invited to attend the two programs, administrators used the Stanford 10 Achievement Test Series, Tenth Edition published by Harcourt Brace and Co.

Any student who scored below the 20th percentile in the area of reading on the Stanford 10 Achievement Test was invited to participate in the after-school program, known as Newton's Academy, during the spring semester of 2008. Students were ranked in order from lowest score to highest score. Those students receiving the lowest scores based on the Stanford 10 Achievement Test were the first to be invited to participate in the after-school program. The first ten students at each grade level accepting the invitation became participants in the program. Those students who met the criteria for

participation in the after-school program but declined the invitation became part of the control group in the study.

Likewise, any student who scored below the 20th percentile in either reading or math on the Stanford Achievement 10 Test was eligible to attend summer school during the summer of 2008. Again, the students' scores were listed from lowest to highest scores. Those students with the lowest scores were the first to be invited to participate in summer school. They had a choice of receiving instruction in both reading and math or in just one of the two subjects. Those students who met the criteria for participating in summer school but declined the invitation became part of the control group.

A total of 58 students participated in one or both of the interventions. Of the 58 students, 18 students participated only in the after-school program, 24 students participated only in the summer school program, and 16 students participated in both the summer school and after-school program. Of the 58 students who participated in one or both of the interventions, 19 students were in third grade at the time of the study, 20 students were in fourth grade, and 19 students were in fifth grade. Of the 19 students who were in third grade at the time of the study, 3 students attended only Newton's Academy, 8 students attended only summer school, and 8 students attended both Newton's Academy and summer school. Of the 20 students who were in the fourth grade at the time of the study, 4 students attended only Newton's Academy, 9 students attended only summer school, and 7 students attended both Newton's Academy and summer school. Of the 19 students who were in the fifth grade at the time of the study, 4 students attended only Newton's Academy, 7 students attended only summer school, and 8 students attended both Newton's Academy and summer school. A total of 43 students served as

the control group. Of the 43 students who served as the control group, 17 were in the third grade at the time of the study, 13 students were in the fourth grade, and 13 students were in the fifth grade.

Because this study was a case study, it was necessary to collect data concerning additional demographic aspects of the experimental group and the control group. These data were procured from school records and were used in answering the quantitative research questions. Demographic data other than students' grade level and intervention participation included socio-economic status, regular classroom attendance, summer school attendance, homeroom teacher, primary language, and individualized education plan (IEP).

Socio-economic status was determined by participation in the free/reduced lunch program. School attendance records indicated the number of days present for each student during the school year. No attendance records specific to Newton's Academy were kept by the school. Attendance records were kept for summer school by the director of the summer school program and indicated the number of absences each student had during the duration of the program. Likewise, school records provided the data concerning homeroom teacher, primary language, and individualized education plan.

Data Collection

During the summer of 2007, the superintendent of the school district was approached and asked to consider participating in the research project. He agreed to allow his grade 3-5 building to participate but noted that he did not wish for any standardized testing in addition to that already implemented in the district to be administered. Subsequent contacts procured his help in opening school records for the purpose of the

research. It was necessary to obtain his permission to use the scores from the Stanford 10 Achievement Test and the ISAT as data for the project. Likewise, he gave his permission to access records concerning other demographic data such as free/reduced lunch status as well as attendance records, IEP records, homeroom teacher, and native language.

In order to answer the quantitative research questions, data from two standardized tests were used. The Stanford 10 Achievement Test was administered in October 2007 to all students in the third, fourth, and fifth grades in the participating school. The scores from this test served as one set of pretest scores for the study. The scores were also used to determine who would be invited to participate in the two interventions. According to D. Harber (personal communication, October, 2008) the school had chosen this particular standardized achievement test because of its alignment with the ISAT. Harber served as the curriculum director during the 2007-2008 school year and elaborated on the use of the Stanford 10 Achievement Test by saying that Harcourt Brace and Company published both tests, using the same norm-referencing criteria.

During the spring semester of the 2007-2008 school year, those students who met the criteria and accepted the invitation to attend Newton's Academy participated in the first of two interventions implemented by the school district in an effort to raise ISAT scores. In March of 2008, the ISAT was administered to all students in the third, fourth, and fifth grades of the participating school. The 2008 ISAT scores served as the second set of pretest scores. During the summer of 2008, those students who met the criteria and accepted the invitation to attend summer school participated in the second intervention implemented by the school to improve ISAT scores. In September 2008, the Stanford 10 Achievement Test was administered to the same group of students as the previous year,

but this time the students were in grades four, five, and six. The scores from the 2008 test served as one set of posttest scores for the study. Newton's Academy was not implemented during the 2008-2009 school year. In March 2009, the ISAT was administered to the same group of students as the previous year, but again this time the students were in grades four, five, and six. The 2009 ISAT scores served as a second set of posttest scores for the study. The primary purpose of the research project was to determine what effect the two interventions had on the ISAT scores of the participants. Having two sets of pretest scores and two sets of posttest scores, allowed for a triangulation of results.

During the spring of 2009, students participating in Newton's Academy and/or summer school were contacted at school and given a consent form (see Appendix F) for their parent/guardian to sign. When the consent form was returned to school, each student was offered a small candy bar as a thank you for returning the form. The student received the candy bar regardless of whether or not the parent/guardian gave permission to participate in the study. When all consent forms had been returned, the students answered a questionnaire concerning their perceptions of the two interventions. Student consent forms were sent to the parents/guardians of the 58 students in the experimental group. Six forms were returned because the students had moved, resulting in 52 consent forms reaching the parents/guardians of the experimental group. A total of 42 (81%) received permission to answer the questionnaire. The questionnaire was administered by grade level in the school library. The questions were read aloud one at a time to the students with sufficient time for the students to answer each question before proceeding to the next. When the questionnaire was finished, each student received a \$3.00 gift card to the

local Dairy Queen as a thank you for participating. The students were not told ahead of time that they would receive a gift card for participating in the study.

During the spring of 2009 teachers, school board members, and school administrators were asked to complete a questionnaire (see Appendix E) concerning their perceptions of the two interventions. Each participant completed a consent form before answering the questionnaire. A central location was designated at the school and the district office for the return of the questionnaires by a specified date. Of the 15 teachers who were given questionnaires, 13 (87%) chose to participate. One teacher chose not to complete the questionnaire because she was completing her first year of teaching in the district and indicated she did not feel that she could evaluate the interventions adequately. A second teacher said he did not want to complete the questionnaire. Those teachers who completed the questionnaire received a \$10 gift card. The teachers were not told ahead of time that they would receive a gift card for participating in the study. Of the 7 board members who were given questionnaires, 6 (86%) returned them. Of the 7 administrators who were given questionnaires, 7 (100%) returned them. The board members and administrators who completed the questionnaire were given a \$10 gift card. Once again, the participants were not told ahead of time that they would receive a gift card for participating in the study.

In late spring of 2009, parents/guardians of the student participants were sent the same questionnaire as the teachers, board members, and administrators. Along with the questionnaire was a letter of explanation concerning the research study, a consent form (see Appendix F), and a self-addressed stamped envelope in which to return the consent form and questionnaire. A total of 50 questionnaires were mailed to parents/guardians of

students in the experimental group. Questionnaires were not sent to those parents who had moved. In two instances siblings were participants and only one questionnaire was sent. Questionnaires were sent to parents/guardians even if the student chose not to participate by answering the questionnaire at school. The initial mailing resulted in a return of 13 (26%) of the questionnaires. Three questionnaires were returned by the post office because the addressee had moved and left no forwarding address. About the middle of June a second letter and a self-addressed stamped postcard was mailed to the 34 participants who had not responded to the first mailing. The letter was a second invitation to participate in the study by answering the questionnaire. The postcard provided a place for the recipient to mark one of three choices: I would like to participate, and I will return the questionnaire; I would like to participate, but I need a new questionnaire; I do not wish to participate. The second mailing resulted in one postcard being returned with a request for a new questionnaire and the return of one additional questionnaire. The additional returned questionnaire made a total of 14 (28%) returned questionnaires. At the end of the questionnaire that was sent to parents/guardians, there was a note thanking them for their participation and an offer of a \$10 gift card to one of six local businesses. No mention was made of the gift card in the letter of explanation. The participant needed to reach the end of the questionnaire before discovering the offer. Personal thank you notes along with the gift cards were sent to those who indicated they would like to receive one.

The questionnaire administered to the teachers, board members, administrators, and parents was an adaptation of one used by Cowley et al. (2002). The questionnaire used by Cowley et al. was the Nesselrodt and Schaffer 2000 version of the school

Extended School Services coordinator questionnaire. Cowley et al. revised the Nesselrodt and Schaffer survey to a scannable format and included additional questions. Cowley et al stated, “The survey was reviewed and approved by AEL’s Institutional Review Board in August 2001” (p. 3). The questionnaire used for the current research followed the same format as the Cowley questionnaire; the wording was changed to reflect the interventions of the current research. Permission was requested and received from Cowley et al to use the adaptation of their questionnaire. The questionnaire used in the current study was approved by Olivet Nazarene University’s Institutional Review Board in December 2008. It contained 33 items, 7 of which were open-ended.

The questionnaires administered to the students were created for the purpose of the current study. Those students attending only Newton’s Academy answered five questions; those students attending only summer school answered four questions; those students attending both interventions answered an additional five questions. The questionnaire was reviewed by the superintendent of the district and was approved by Olivet Nazarene University’s Institutional Review Board in December 2008.

Following the collection of the data, various tools were used to analyze and evaluation the data.

Analytical Methods

The statistical program used for analyzing data collected during the current research was Statistical Package for the Social Sciences (SPSS), Versions 15.0 and 16.0. Test selection was determined by the data collected.

The current study was designed to answer three research questions, two of which sought quantitative answers and one of which sought both quantitative and qualitative answers. The first research question seeking a quantitative answer was:

1. To what extent did two intervention programs in one small, rural school district impact the ISAT scores of the program participants?

A mixed-model ANOVA was used to compare the students' pretest and posttest scores on the ISAT reading test based on the four conditions: control group, Newton's Academy only, summer school only, and both Newton's Academy and summer school. For triangulation purposes, a second mixed-model ANOVA was used to compare the Stanford 10 Achievement Test reading pretest/posttest scores based on the four conditions. The scores from the Stanford 10 Achievement Test administered in October 2007 and the scores from the ISAT administered in March 2008 provided pretest scores in the study. Likewise, the scores from the Stanford 10 Achievement Test administered in September 2008 and the scores from the ISAT administered in March 2009 provided posttest scores in the study. The mixed-model ANOVAs were followed up with one-way ANOVAs where significant interactions emerged. A Tukey HSD test was used as a final follow up test.

A mixed-model ANOVA was the appropriate test to use for the comparisons. The University of Texas at Austin posted a document on the Internet entitled "Mixed-model ANOVAs" (n.d.). In the document the author indicated that mixed-model ANOVAs are used to analyze how a between-subjects factor affects, or interacts with, the within-subjects factor. The author further stated, "Mixed models analysis of variance requires that the repeated measure variables be interval level and the between-subject factor be

any level that defines groups (dichotomous, nominal, ordinal, or grouped interval)” (para. 6). In the present study, the pre- and posttest scores represented the interval level variable, and the conditions were the factor that defined the groups.

The second research question also sought a quantitative answer:

2. To what extent might other factors such as school attendance, native language, socio-economic status, primary classroom teacher, IEP, and gender have impacted the effects of the intervention programs?

A series of mixed-model ANOVAs were used to make comparisons within-subjects and between-subjects to answer the second research question. The pretest and posttest scores from the ISATs served as the dependent variable. The four research conditions served as one independent variable; while school attendance, native language, socio-economic status, primary classroom teacher, IEP, or gender served as a second independent variable. Appropriate follow up tests were performed on all significant between-subjects results. A similar series of mixed-model ANOVAs were used to make comparisons of the Stanford 10 Achievement Test pretest and posttest scores for purposes of triangulation. The mixed-model ANOVAs were followed up with one-way ANOVAs where significant interactions emerged. A Tukey HSD test was used as a final follow up test when necessary.

The third research question sought both quantitative and qualitative answers:

3. To what extent might other factors such as student, parent, teacher, administrator, and school board perceptions of the two interventions have impacted the effects of the intervention programs?

The source of data to answer this question was the questionnaires administered to the student participants, their parent/guardian, the teachers, and school board members/school administrators. The student participants who attended only Newton's Academy responded to five questions; those students who participated only in the summer school program responded to four questions; and those students who participated in both Newton's Academy and the summer school programs responded to an additional five questions. To respond to the questions, the student participants selected answers from a Likert-type scale. The student responses were analyzed using descriptive statistics, and the means and standard deviations were reported in a table.

The questionnaire completed by all adult participants included 33 items: 10 items requiring rank order of top three answers, 2 items requiring all applicable answers, 14 items requiring one best answer, and 7 items requiring open-ended answers. In order to compare the three adult participant categories—parent, teacher, school board members/administrator—a Kruskal-Wallis H test was used to analyze the 10 items requiring rank order of top three answers. Two separate 4 x 7 chi squares were used to compare the answers to the two questions for which the participants were to mark any answer that applied. A series of between-subjects ANOVAs was used to compare how the three groups of adult participants answered the 14 questions requiring one best answer. Tukey HSD tests were used to follow up any significant results.

The seven open-ended questions provided qualitative data for the study. An analysis of the open-ended questions required a coding system. The first step of the coding process was open coding. Robson (2002) described open coding, “[In open coding] the researcher forms initial categories of information about the phenomenon

being studied from the initial data gathered” (p. 194). In the current study, one researcher performed the open coding and asked two researchers not affiliated with the current study to complete individually the open coding process on the data in order to provide triangulation. Robson then elaborated by stating that once this initial coding was completed, each category should be examined for sub-categories or properties and ultimately dimensionalized “to show the dimensions on which properties vary and to seek the extreme possibilities on the continua” (p. 194). The second step of the coding process was axial coding. Robson stated, “This involves assembling the data in new ways after open coding” (p. 194). Robson further explained that axial coding was meant to identify a central phenomenon, explore causal conditions, specify strategies, identify the context and intervening conditions and delineate consequences. The final step of the coding process resulted in selective coding. Robson stated, “[Selective coding] involves the integrations of the categories in the axial coding model” (p. 194). During this step, hypotheses were presented relevant to the current study.

The quantitative and qualitative tools were employed during the current study for the purpose of answering the four research questions presented at the beginning of the study. In the process of analyzing the data that had been collected, several limitations of the study became evident.

Limitations

A primary limitation of the study was due to the very nature of the study. It was a case study of two interventions, the purpose of which was to improve ISAT scores, in a small, rural school. Therefore, the number of participants was limited by the size of the school and the characteristics of the participants. As mentioned earlier, a review of the

literature indicated that few small, rural schools have been the subject of research on summer school and after-school programs. The population of such schools is usually small, so the question arises as to the appropriate number for the sample size. Gay et al. (2006) stated, “For smaller populations, say, $N = 100$ or fewer, there is little point in sampling; survey the entire population” (p. 110). The population in the current study was those students participating in the interventions, $N = 58$; therefore, it was appropriate and necessary to include every participant in the study. Because some students moved from the district during the study and because some chose not to participate in the questionnaire, it was impossible to include every participant in the interventions in the study.

A second limitation was the lack of attendance records specific to Newton’s Academy. Attendance records were available for regular school attendance, but no record was available for Newton’s Academy attendance. There was no way to ascertain that attendance during the regular school day resulted in attendance after school for Newton’s Academy, making it was impossible to determine if the number of days of attendance at Newton’s Academy had any effect on posttest ISAT scores.

A third limitation was the commencement of Newton’s Academy. The program was implemented from January through May of the 2007-2008 school year and was not implemented at all during the 2008-2009 school year. The 2008 ISAT was administered during March 2008, approximately two months after the commencement of the Newton’s Academy after-school program. The 2008 ISAT served as the pretest for statistical purposes; yet, the intervention was in place for approximately two months before the

pretest was administered and in place approximately two and one half months between the pretest and posttest.

A final limitation was the coding process of the qualitative data. The open coding was performed by three researchers individually for triangulation purposes, but the axial coding and selective coding were performed by one researcher independently.

Several of these limitations arose because of the nature of a case study. This research was the study of one particular school with specific participants. It was impossible to increase the number of participants beyond those who actually participated. When working with small samples, the question of validity always arises. Triangulation was used to increase internal validity. External validity could only be determined from subsequent case studies of schools and participants with similar demographics. The implementation of Newton's Academy in relationship to the pre- and posttest in addition to its short duration created issues with reliability. It was impossible to overcome this limitation during the time framework of the study.

CHAPTER IV

FINDINGS AND CONCLUSIONS

Introduction

School administrators have long sought methods to increase student learning. As the interest in student learning increased, so did the issues of how to measure student learning as well as how to implement a system of accountability. The No Child Left Behind Act of 2001 mandated that school administrators implement methods of measuring student learning in order that schools could be held accountable for the standards of learning set by the federal government. Since 2001 school administrators have increasingly sought ways to improve student learning. The Illinois State Achievement Tests (ISAT) has been designated as the means of measuring student learning in Illinois. The purpose of the current case study was to determine to what extent two interventions implemented in a small, rural school in the Midwest raised the ISAT scores of students in grades 3-5. Furthermore, the study sought to determine what other factors in addition to the interventions may have impacted the learning of the students as expressed in their ISAT scores. Such elements as school attendance, socio-economic status, primary classroom teacher, IEP, native language, gender, and grade level were studied as factors that may have impacted ISAT scores. A final component of the case study was the investigation of how the perceptions of the stakeholders—students, parents, teachers, administrators, and school board members—may have impacted student learning.

Stuckart and Glanz (2007) traced the interest in student learning back to the publication of John Dewey's monograph *Experience and Education* in 1938. By 1965 President Lyndon B. Johnson sought means of measuring student learning in the passage of the Elementary and Secondary Education Act (ESEA). Robelen (2005) pointed out that one of the primary targets of ESEA was to improve the learning of disadvantaged students. In 1983 the U.S. Department of Education released a report entitled *A Nation at Risk* which assessed the progress that had been made in the education of American students since the original ESEA had been issued (National Commission on Excellence in Education, 1983). The report found progress lacking in American educational efforts and recommended that schools raise their expectations of students and implement more rigorous and measurable standards for academic performance and student conduct. Among the specific recommendations made was the need to identify and implement remedial interventions. According to Robelen (2005), President Bill Clinton mandated that states develop standards and align assessments for all students as a part of the reauthorizations of the ESEA in 1994. Another extension of the ESEA occurred in 2001 when President George Bush signed what has become known as the No Child Left Behind Act (NCLB) of 2001. Once again schools were mandated to have a plan to raise standards and to demonstrate that students were reaching these high standards, but NCLB also stated that schools receiving federal grant money would have sanctions imposed for not making adequate yearly progress towards the high standards.

As school administrators faced the possibility of losing federal money if students did not meet the high standards mandated by NCLB, they began to investigate interventions that might increase student learning and thus increase standardized test

scores. Two interventions with a long history of use in the public school system were extended-year programs and extended-day programs. Extended-year programs had been in existence since the mid-nineteenth century and were commonly known as summer school. Fashola (1998) noted that extended-day programs in the form of before school or after-school programs is a more recent development but are implemented for some of the same reasons as summer school.

Originally, both extended-year and extended-day programs provided a safe environment for students who needed adult supervision beyond the traditional school year or day. Furthermore, Fashola (1998) noted that such programs could also provide enrichment activities. As administrators tried to meet the needs of struggling students and as NCLB mandates heightened the interest in high expectations for all students, administrators saw extended-year and extended-day programs as a way to improve the academic performance of all students, but low achieving students in particular.

Although one of the primary reasons administrators have implemented extended-year and extended-day programs is to improve student learning, according to a review of literature researchers have disagreed over the effects of such programs. An extensive study (Klibanoff & Haggart, 1981) of summer programs implemented in schools throughout the United States indicated that students who attended these extended-year programs showed the same rate of academic growth as those students who did not attend such programs. Other researchers (Curtis et al., 1982; Heyns, 1986; Hoepfner, 1980) reached similar conclusions concerning the effectiveness of summer programs. Furthermore, Austin et al. (1972), Alexander and Entwisle (2007), and Heyns questioned

the methodology used by earlier researchers including testing schedules and testing procedures.

On the other hand, more recent studies conducted by Cooper et al. (2000), Stone et al. (2005), and Borman and Dowling (2006) indicated that under specific circumstances, voluntary summer school programs could be beneficial for students who might normally fall behind in academic achievement. Specifically, Cooper et al. contended that summer programs were more effective for early primary grade students and secondary grade students than middle grade students. Cooper et al. also suggested that students made higher gains in math than in reading during summer programs. Borman and Dowling indicated that the summer program should be a 3-year voluntary commitment by the student. Likewise, Stone et al. indicated that summer programs could be beneficial because of small class size, uniform ability levels, and standardized curriculum.

Similar inconsistencies exist in the findings of researchers who have studied extended-day programs. Slavin and Fashola (1998) conducted a study of different after-school programs in an attempt to provide standards that educators could use to determine which programs they might wish to implement. Although Slavin and Fashola deemed some programs ineffective based on their criteria for effectiveness, their study did result in a list of conditions that were usually present in effective programs. Likewise, Lyle (2007) indicated that after-school programs were effective based on stake holders' perceptions of the programs. Lyle, like Slavin and Fashola, compiled a list of conditions that were generally present in effective programs.

Not all researchers concurred with the positive results presented by Lyle (2007) and Slavin and Fashola (1998). For instance, James-Burdumy et al. (2005) conducted one of the most extensive studies of extended-day programs for the U.S. Department of Education. These researchers concluded that extended-day programs made no difference on most academic outcomes of the participants. Furthermore, James-Burdumy et al. concluded that extended-day programs made little difference in homework completion, class preparation, absenteeism, parent involvement, occurrence of negative behavior, or developmental outcomes. There appears to be a more positive perception of after-school programs than what is warranted based on quantitative studies.

Much of the research that has been conducted to determine the effectiveness of extended-year and extended-day programs has been conducted in large metropolitan districts. Examples include the Summer Bridge Program in Chicago and the Teach Baltimore Summer Academy. The subject of the current study is a small, rural school in the Midwest. The study is an attempt to determine the impact of an after-school program and a summer school program on academic achievement of students in grades 3-5.

Data from standardized tests, student participant surveys, adult participant surveys, and school demographic records were used to answer the three research questions:

1. To what extent did two intervention programs in one small, rural school district impact the ISAT scores of the program participants?
2. To what extent might other factors such as school attendance, native language, socio-economic status, primary classroom teacher, IEP, gender, and grade level have impacted the effects of the intervention programs?

3. To what extent might other factors such as student, parent, teacher, administrator, and board member perceptions of the two interventions have impacted the effects of the intervention programs?

Findings

SPSS, Versions 15.0 and 16.0 were the statistical program used for analyzing the data to answer the three research questions developed to guide the current study.

Research Question 1: To what extent did two intervention programs in one small, rural school district impact the ISAT scores of the program participants?

To answer the first research question, a mixed-model ANOVA was used to compare the impact of four conditions on students' ISAT reading scores. Students in the study were assigned to four conditions. Condition 1 was comprised of students who received just the extended-day intervention known as Newton's Academy. Condition 2 was comprised of those students who received just the extended-year intervention known as summer school. Condition 3 was comprised of students who received both the extended-day and extended-year interventions, while Condition 4 was comprised of those students who received no interventions and were in the control group. The students' ISAT pre- and posttest reading scores were compared. The ISAT test administered in March 2008 served as the pretest; the ISAT test administered in March 2009 served as the posttest. The test of within-subjects effects was not significant, $F(3, 85) = 0.319$. However, a test of between-subjects effects showed there to be a significant difference among the four conditions, $F(1, 85) = 18.11, p < .01$. A Tukey HSD was used as a follow-up test. There was a significant difference between students in Newton's Academy and those students in summer school, $p < .05$; there was also a significant

difference between the students in Newton's Academy and those students in the control group, $p < .01$. There was a significant difference between students in summer school and those students who participated in both Newton's Academy and summer school, $p < .01$. Finally, there was a significant difference between those students who participated in both Newton's Academy and summer school and those students in the control group, $p < .01$. See Table 1 for a summary of means and standard deviations of the ISAT pre- and posttest reading scores for all four conditions.

Table 1

Pre- and Posttest ISAT Statistics by Condition

Condition	ISAT Test				Marginal Mean
	Pretest		Posttest		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Newton's Academy	21.59	7.18	23.82	8.02	22.71
Summer School	29.33	6.50	29.72	8.89	29.52
Both Interventions	18.00	4.09	20.60	6.67	19.30
Control	30.51	7.32	32.31	6.88	31.41
Marginal Mean	26.46		28.19		27.33

In order to provide triangulation in answering the first research question, a mixed-model ANOVA was used to compare the impact of four conditions on students' Stanford 10 Achievement Test reading scores. The Stanford 10 Achievement Test administered in October 2007 served as the pretest; the Stanford 10 Achievement Test administered in

September 2008 served as the posttest. The test of within-subjects effects was not significant, $F(3, 83) = 0.99$. However, a test of between-subjects effects showed there to be a significant difference among the four conditions, $F(1, 83) = 23.21, p < .01$. A Tukey HSD was used as a follow-up test. There was a significant difference between students in Newton's Academy and those students in summer school, $p < .05$; there was also a significant difference between the students in Newton's Academy and those students in the control group, $p < .01$. There was a significant difference between students in summer school and those students who participated in both Newton's Academy and summer school, $p < .01$. Finally, there was a significant difference between those students who participated in both Newton's Academy and summer school and those students in the control group, $p < .01$. See Table 2 for a summary of means and standard deviations of the Stanford 10 Achievement Test pre- and posttest reading scores for all four conditions.

Table 2

Pre- and Posttest Stanford 10 Achievement Test Statistics by Condition

Condition	Stanford 10Test				Marginal Mean
	Pretest		Posttest		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Newton's Academy	44.00	7.63	49.31	13.16	46.66
Summer School	62.94	10.72	60.44	16.05	61.69
Both Interventions	40.40	7.78	41.93	11.86	41.17
Control	65.12	14.92	63.62	17.84	64.37
Marginal Mean	53.12		53.83		53.47

Research Question 2: To what extent might other factors such as school attendance, native language, socio-economic status, primary classroom teacher, IEP, gender, and grade level have impacted the ISAT scores of the participants?

A second mixed-model ANOVA was used to compare impact of school attendance on students' ISAT reading scores. School records provided attendance for each student. The students were divided into five categories based on the number of days present throughout the school year. Students in Category 1 were present 98-100% of attendance days; students in Category 2 were present 95-97% of attendance days; students in Category 3 were present 92-94% of attendance days; students in Category 4 were present 88-91% of attendance days; and students in Category 5 were present for 88% or fewer of attendance days.

There was no significant interaction between the two variables, $F(4, 84) = 2.34$, nor was the main effect of attendance significant, $F(1, 84) = 0.60$. See Table 3 for means and standard deviations for ISAT reading pre- and posttest reading scores for the factor of attendance.

Table 3

Pre- and Post ISAT Statistics Based on Attendance

Attendance	ISAT Test				Marginal Mean
	Pretest		Posttest		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
98-100%	26.64	8.20	27.00	7.92	26.82
95-97%	27.35	8.33	27.54	9.31	27.45
92-94%	27.58	9.41	30.33	10.24	28.96
89-91%	26.10	8.58	32.20	8.61	29.15
88% or less	21.62	6.84	27.00	7.62	24.31
Marginal Mean	26.46		28.19		27.33

A third mixed-model ANOVA was used to compare the impact of being an English Language Learner (ELL) on students' ISAT reading scores. The school counselor provided information on the designation of those students considered ELL. Participants were divided into two categories. Category 1 was comprised of students who were not considered ELL while Category 2 was comprised of students who were considered ELL. There was no significant interaction between the two variables, $F(1, 87) = 0.01$, nor was the main effect of ELL significant, $F(1, 87) = 0.12$. See Table 4 for the means and standard deviations for ISAT reading scores based on designation of ELL.

Table 4

Pre- and Posttest ISAT Statistics Based on Language

Language	ISAT Test				Marginal Mean
	Pretest		Posttest		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Non- ELL	26.38	8.34	28.13	8.76	27.26
ELL	27.80	8.64	29.20	8.90	28.50
Marginal Mean	26.46		28.19		27.33

A fourth mixed-model ANOVA was used to compare the impact of socioeconomic status (SES) on students' ISAT reading scores. School records provided information on students who received free or reduced lunch. Students in Category 1 were not eligible for free or reduced lunch while students in Category 2 were eligible. There was no significant interaction between the two variables, $F(1, 87) = 1.42$, nor was the

main effect of SES significant, $F(1, 87) = 0.44$. See Table 5 for the means, standard deviations, and marginal means for ISAT reading scores based on socio-economic status.

Table 5

Pre- and Posttest ISAT Statistics Based on SES

Socio-Economic Status	ISAT Test				Marginal Mean
	Pretest		Posttest		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Regular Lunch	27.24	8.45	28.27	8.76	27.76
Free/reduced Lunch	25.21	8.04	28.06	8.90	26.64
Marginal Mean	26.46		28.19		27.33

A fifth mixed-model ANOVA was used to determine the impact that students' primary classroom teachers may have had on students' ISAT reading scores. Students in the study were assigned to a total of 14 different homeroom teachers who were responsible for teaching the core subjects to their homeroom students. The test of within-subjects effects was not significant, $F(13, 75) = 0.792$. However, a test of between-subjects effects showed there to be a significant difference among the various homeroom teachers, $F(1, 75) = 2.42, p < .05$. A Tukey HSD was used as a follow-up test. Because the number of participants in each teacher's classroom was small, n ranged from 4 to 9, the Tukey HSD was inconclusive. See Table A1 in Appendix A for means and standard deviations for ISAT reading scores based on homeroom teacher.

A sixth mixed-model ANOVA was used to compare the ISAT reading scores of students with no individualized education plan (IEP) and those with an IEP. The school

counselor provided information concerning students with IEPs. Students in Category 1 did not have IEPs while students in Category 2 had IEPs. There was no significant interaction between the two variables, $F(1, 87) = 0.28$, but there was a significant difference between the main effect of IEP or no IEP, $F(1, 87) = 12.05$, $p < .05$. Table 6 shows the means, standard deviations, and marginal means for the two categories.

Table 6

Pre- and Posttest ISAT Statistics Based on IEP

Category	ISAT Test				Marginal Mean
	Pretest		Posttest		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
No IEP	28.22	8.30	29.71	8.07	28.96
IEP	21.71	6.36	24.08	9.25	22.89
Marginal Mean	26.46		28.19		25.93

A seventh mixed-model ANOVA was used to compare the students' ISAT scores based on their gender. School records provided the gender of student participants. Category 1 was comprised of male students while Category 2 was comprised of female students. There was no significant interaction between the two variables, $F(1, 87) = 0.09$, nor was the main effect of gender significant, $F(1, 87) = 0.80$. See Table 7 for means and standard deviations of ISAT reading scores based on participant gender.

Table 7

Pre- and Posttest ISAT Statistics Based on Gender

Gender	ISAT Test				Marginal Mean
	Pretest		Posttest		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Male	25.78	8.23	27.69	9.32	26.74
Female	27.51	8.44	28.97	7.76	28.24
Marginal Mean	26.46		28.19		27.49

An eighth mixed-model ANOVA was used to compare the students' ISAT scores based on their grade level during the study. School records provided the grade level of each student participant. There was a significant interaction between the two variables, $F(2, 86) = 5.00, p < .05$. Additionally, the main effect of grade level was significant, $F(1, 86) = 4.60, p < .05$. A Tukey HSD showed that Grade 3 was significantly different from Grade 5, $p < .05$, and Grade 4 was significantly different from Grade 5, $p < .01$. See Table 8 for means and standard deviations of participant ISAT scores based on grade level at the time of the study.

Table 8

Pre- and Posttest ISAT Statistics Based on Grade Level

Category	ISAT Test				Marginal Mean
	Pretest		Posttest		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Grade 3	26.94	8.62	25.82	9.35	26.38
Grade 4	23.48	8.10	27.23	8.44	25.36
Grade 5	29.62	7.03	32.79	6.38	31.21
Marginal Mean	26.46		28.19		27.65

Research Question 3: To what extent might other factors such as student, parent, teacher, administrator, and board member perceptions of the two interventions have impacted the effects of the intervention programs?

Student participants were asked a series of questions to determine their perceptions of the two interventions. Those students who participated in Newton's Academy answered five questions (see Appendix B) while those students attending summer school answered four questions (see Appendix C) concerning summer school. Those students attending both Newton's Academy and summer school answered an additional five questions (see Appendix D) that asked them to compare their perceptions of the two interventions. A summary of answers given by students who participated in Newton's Academy can be found in Table 9.

Table 9

Summary of Answers to Survey Questions by Students in Newton's Academy

Survey Questions (1,2,3,4,5)	Did not help %	Helped a little %	Helped quite a bit %	Helped a lot %
Attending Newton's Academy helped me earn better grades in school.	4	29	38	29
Attending Newton's Academy helped make homework easier.	33	25	21	21
Attending Newton's Academy helped me do better on my ISAT test.	8	42	33	17
Attending Newton's Academy helped me feel better about myself.	17	33	38	13
Attending Newton's Academy helped me feel safer after school.	29	25	17	29

A summary of answers given by students who participated in summer school can be found in Table 10.

Table 10

Summary of Answers to Survey Questions by Students in Summer School

Survey Questions	Possible Answers			
	Did not help	Helped a little	Helped quite a bit	Helped a lot
	%	%	%	%
Attending Summer School helped me earn better grades in school.	13	30	17	40
Attending Summer School helped me do better on my ISAT test.	13	40	37	10
Attending Summer School helped me feel better about myself.	30	17	20	33
Attending Summer School helped me feel safer.	20	33	20	27

Students who attended both Newton's Academy and Summer School were asked five additional questions. The questions were designed so that students would compare Newton's Academy to Summer School. A summary of the answers to the five questions appears in Table 11.

Adult participants were placed in 4 categories based on the role each participant played in the school setting. Teachers were assigned to Category 1; school administrators were assigned to Category 2; parents were assigned to Category 3; and school board

Table 11

Summary of Answers to Survey Questions by Students in Newton's Academy and Summer School

Survey Questions (1, 2, 3, 4, 5)	Condition			
	Newton's Academy	Summer School	Both	Neither
	%	%	%	%
Did NA or SS help you the most to earn better grades in school?	25	25	25	25
Did NA or SS help you the most with your homework?	25	25	8	42
Did NA or SS help you the most on your ISAT test?	17	25	33	25
Did NA or SS help you the most to feel safe at school?	17	8	25	50
Did NA or SS help you the most to feel better about how well you can do in school?	17	25	25	33

members were assigned to Category 4. All adult participants completed a survey consisting of 33 questions (see Appendix E).

Fourteen survey questions required one best answer. A series of one-way ANOVAs was used to compare the answers of the participants based on their role.

Survey Question 7 asked adult participants how often teachers in Newton's Academy consult with regular classroom teachers on instruction and goals. There were six possible answers from which to select. There was no significant difference among the four groups of adult participants, $F(3, 38) = 2.18$.

Survey Question 8 asked participants to select from 6 answers and asked how often teachers in the summer school program consult with regular classroom teachers on instruction and/or goals. There was no significant difference among the four groups of adult participants, $F(3, 37) = 0.40$.

Survey Question 9 asked participants to select from six answers and asked how often teachers in the Newton's Academy consult with regular classroom teachers on student performance. The difference among the adult roles was significant, $F(3, 38) = 3.82, p < .05$. A Tukey HSD was used as a follow up test to compare the four roles. The answers given by administrators were significantly different from the answers given by the board members, $p < .05$. Likewise, the answers given by parents were significantly different from the answers given by board members, $p < .05$.

Survey Question 10 asked participants to select from six answers and asked how often teachers in the summer school program consult with regular classroom teachers on student performance. The difference among the four adult roles was not significant, $F(3, 37) = 0.61$.

Survey Question 11 asked participants to select from five answers and asked how often teachers in the Newton's Academy consult with parents on student goals. The difference among the four adult roles was not significant, $F(3, 38) = 1.60$.

Survey Question 12 asked participants to select from five answers and asked how often teachers in the summer school program consult with parents on student goals. The difference among the four adult roles was significant, $F(3, 37) = 5.94, p < .05$. A Tukey HSD test showed that the answers given by teachers were significantly different from the answers given by parents, $p < .05$; likewise the answers given by teachers were significantly different from those given by school board members, $p < .05$.

Survey Question 13 asked participants to select from five answers and asked how often the teachers in the Newton's Academy consult with parents about student performance. The difference among the four adult roles was not significant, $F(3, 39) = 1.48$.

Survey Question 14 asked participants to select from five answers asked how often teachers in the summer school program consult with parents about student performance. There was a significant difference among the four adult roles, $F(3, 38) = 8.94, p < .01$. A Tukey HSD test was used as a follow up test to compare the four roles. The answers given by the teachers were significantly different from those answers given by parents, $p < .01$; likewise, the answers given by the teachers were significantly different from the answers given by school board members, $p < .05$.

Survey Question 15 asked participants to select from five answers and asked how often the teachers in the Newton's Academy consult with the student on student goals. The difference among the four adult roles was not significant, $F(3, 39) = 1.19$.

Survey Question 16 asked participants to select from five answers and asked how often teachers in the summer school program consult with the student on student goals. The difference among the four adult roles was significant, $F(3, 38) = 4.54, p < .05$. A Tukey HSD test was used as a follow up test to compare the four roles. The answers given by the teachers were significantly different from the answers given by the parents, $p < .05$. Likewise, the answers given by the teachers were significantly different from those given by the school board members, $p < .05$.

Survey Question 17 asked participants to select from five answers and asked how often the teachers in Newton's Academy consult with the student on student performance. There was no significant difference among the four adult roles, $F(3, 39) = 1.47$.

Survey Question 18 asked participants to select from five answers and asked how often teachers in the summer school program consult with the student on student performance. The difference among the four adult roles was significant, $F(3, 38) = 3.49, p < .05$. A Tukey HSD test was used as a follow up test to compare the four conditions. The answers given by the teachers were significantly different from those given by the board members, $p < .05$. See Table 12 for descriptive statistics for adult participants on Survey Questions 7-18.

Survey Questions 25 and 26 were designed to determine adult participants' perception of the overall effectiveness of the two interventions. On Survey Question 25, participants selected from four answers and were asked to rate the overall effectiveness of Newton's Academy. There was a significant difference among the four adult roles, $F(3, 32) = 4.02, p < .05$. The ANOVA was followed up with a Tukey HSD test which showed

that the answers given by the teachers were significantly different from those given by the parents, $p < .05$.

Table 12

Descriptive Statistics For Adult Participants' Answers on Survey Questions 7-18

Question	Role of Adult Participants							
	Teachers		Administrators		Parents		School Board Members	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
SQ 7	4.38	1.45	4.71	1.38	5.38	1.5	3.5	2.07
SQ 8	4.92	0.76	5.00	1.00	5.00	1.54	4.33	1.97
SQ 9	4.30	1.32	5.58	0.79	5.38	1.05	3.33	2.16
SQ 10	5.00	0.71	5.14	0.9	5.17	1.59	4.33	1.97
SQ 11	4.23	1.3	3.14	2.04	3.15	1.46	2.83	1.83
SQ 12	4.77	0.60	3.42	1.71	2.83	1.19	2.83	1.83
SQ 13	4.08	1.44	2.71	1.89	3.29	1.54	2.83	1.72
SQ 14	4.69	1.03	3.29	1.89	2.08	0.95	2.83	1.72
SQ 15	3.85	1.72	4.00	1.53	3.93	1.64	2.50	1.97
SQ 16	4.62	1.12	4.00	1.53	2.77	1.59	2.50	1.97
SQ 17	3.92	1.71	3.29	1.89	4.00	1.66	2.33	2.07
SQ 18	4.53	1.13	3.29	1.89	3.00	1.53	2.33	2.07

On Survey Question 26, participants chose from four answers and were asked to rate the overall effectiveness of the summer school program. There was a significant difference among the four adult roles, $F(3, 35) = 5.96, p < .05$. A follow up Tukey HSD

test indicated that the answers given by the teachers were significantly different from the answers given by the parents, $p < .05$. Likewise, the answers given by the administrators were significantly different from the answers given by the parents, $p < .05$. See Table 13 for descriptive statistics for adult participants' answers to survey questions 25 and 26.

Table 13

Descriptive Statistics For Adult Participants' Answers on Survey Questions 25-26

Question	Role of Adult Participants							
	Teachers		Administrators		Parents		Board Members	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
SQ 25	3.00	0.67	2.71	0.49	1.90	0.74	2.67	1.03
SQ 26	2.64	0.81	2.86	0.69	1.67	0.49	2.17	0.75

A series of Kruskal-Wallis tests were used to compare the answers of the four categories of adult participants on 10 questions in which they were asked to rank their top three answers. When necessary, Mann-Whitney tests were used to follow up significant differences. The questions had 7 to 11 possible answers. Participants were asked to rank their top three answers with 1 being used to rank their first choice, 2 being used to rank their second choice, and 3 being used to rank their third choice.

Survey Question 1 asked participants to rank possible reasons why students may have attended Newton's Academy. There was not a significant difference between any of the four roles of adult participants on their selection of choice A, $X^2(3) = 7.16$; of choice B, $X^2(3) = 3.46$; of choice C, $X^2(3) = 0.50$; of choice D, $X^2(3) = 0.70$; of choice E, $X^2(3) = 1.92$; or of choice F, $X^2(3) = 2.27$. There were insufficient data to complete a

Kruskal-Wallis test for choices G, H, I, and J. See Table 14 which shows the frequency of each choice by role.

Table 14

Frequency of Answers on SQ1 by Adult Participants

Answer choice	Role			
	Teacher	Admin.	Parent	Board
To decrease possibility of failing	10	6	7	4
To improve academic achievement	13	6	11	6
To improve self-esteem	0	0	4	2
To sustain present level of performance	1	0	5	1
To extend learning time	3	4	4	1
To raise standardized achievement test scores	3	2	3	3
To raise ISAT scores	8	2	2	0
To provide a safe afterschool environment	0	1	0	0
To improve attendance	0	0	0	0
Other	0	0	0	1

Survey Question 2 asked participants to rank possible reasons why students might have attended summer school. There was not a significant difference between any of the four roles of adult participants on their selection of choice A, $X^2(3) = 0.32$; of choice B, $X^2(3) = 0.26$; of choice C, $X^2(3) = 0.50$; of choice D, $X^2(3) = 0.46$; of choice E,

$X^2(3) = 1.19$; or of choice F, $X^2(3) = 2.85$. The data for choices G, H, I, and J were insufficient to complete a Kruskal-Wallis test. See Table 15 which shows the frequency of each selection by role.

Table 15

Frequency of Answers on SQ2 by Adult Participants

Answer choice	Role			
	Teacher	Admin.	Parent	Board
To decrease possibility of failing	11	6	9	5
To improve academic achievement	13	7	11	6
To improve self-esteem	0	0	2	1
To sustain present level of performance	6	0	7	2
To extend learning time	3	4	0	3
To raise standardized achievement test scores	1	1	4	1
To raise ISAT scores	4	2	1	0
To provide a safe afterschool environment	0	0	0	0
To improve attendance	0	0	0	0
Other	0	0	0	0

Survey Question 3 asked participants to rank the possible ways that students might have been selected to attend Newton's Academy. An analysis of the data suggested a significant difference in the number of times participants marked choice A, $X^2(3) = 13.16$, $p < .05$, and the way the participants marked choice D, $X^2(3) = 8.23$,

$p < .05$. There were no significant differences in the way participants marked choice B, $X^2(3) = 5.32$; choice E, $X^2(3) = 5.91$; or choice G, $X^2(3) = 1.00$. There were insufficient data to complete a Kruskal-Wallis test for choices C and F. To compare the rank orders of adults from the four role groups, Mann-Whitney tests were used. Six tests were run; each test compared the ranks of two groups (e.g., teachers to parents, teachers to administrators, board members to parents). There was a significant difference on selection A between teachers and parents, $z = 26.50$, $p < .05$; between teachers and board members, $z = 7.50$, $p < .05$; between administrators and parents, $z = 11.00$, $p < .05$; and between administrators and board members, $z = 2.50$, $p < .05$. There was no significant difference between teachers and administrators, $z = 31.00$, or between parents and board members, $z = 20.00$. There was also a significant difference on selection D between teachers and parents, $z = 16.00$, $p < .05$, and between administrators and parents, $z = 5.00$, $p < .05$. See Table 16 which shows the frequency of each selection by role.

Table 16

Frequency of Answers on SQ3 by Adult Participants

Answer choice	Role			
	Teacher	Admin.	Parent	Board
Teacher recommendation	11	6	11	5
Parent request	3	2	8	3
Student request	0	0	0	2
Standardized test scores	10	6	7	4
ISAT scores	9	7	4	3
I don't know	2	0	3	0
Other	1	0	0	1

Survey Question 4 asked participants to rank the possible ways that students might have been selected for summer school. There was no significant difference between any of the four roles on their selection of choice A, $X^2(3) = 6.45$; of choice C, $X^2(3) = 2.00$; of choice D, $X^2(3) = 5.98$; of choice E, $X^2(3) = 0.15$; or of choice G, $X^2(3) = 0.00$. There was a significant difference of choice B, $X^2(3) = 7.83$, $p < .05$. A Mann-Whitney test revealed a significant difference between teachers and parents on their selection of choice B, $z = 5.50$, $p < .05$. Likewise, there was a significant difference between the parents and the board members on their selection of choice B, $z = 2.00$, $p < .05$. There was no significant difference on select of choice B between teachers and administrators, $z = 4.50$; between teachers and board members, $z = 10.00$; between administrators and parents, $z = 6.50$; or between administrators and board members, $z = 2.00$. See Table 17 which shows the frequency of each selection by role.

Table 17

Frequency of Answers on SQ4 by Adult Participants

Answer choice	Role			
	Teacher	Admin.	Parent	Board
Teacher recommendation	11	7	11	5
Parent request	6	3	5	4
Student request	0	1	1	1
Standardized test scores	9	5	9	5
ISAT scores	9	4	5	2
I don't know	1	0	2	0
Other	1	1	0	1

Survey Question 19 asked participants to rank what might have been positive outcomes for students who attended Newton's Academy. There were no significant differences among the four roles for their selection of choice A, $X^2(3) = 2.18$; of choice B, $X^2(3) = 4.23$; of choice D, $X^2(3) = 3.06$; of choice E, $X^2(3) = 1.60$; of choice G, $X^2(3) = 2.00$; of choice H, $X^2(3) = 2.00$; of choice I, $X^2(3) = 0.00$; of choice J, $X^2(3) = 2.20$; or of choice K, $X^2(3) = 1.00$. There were insufficient data to analyze the selection of choices C and F. See Table 18 which shows the frequency of each selection by role.

Table 18
Frequency of Answers on SQ19 by Adult Participants

Answer choice	Role				Total
	Teacher	Admin.	Parent	Board	
Enhanced academic achievement	5	4	9	3	21
Increased self-esteem	7	3	3	2	15
Improved attendance	0	2	0	0	2
Increased motivation	7	3	4	2	16
Increased scores on standardized achievement tests	0	1	4	1	6
Increased scores on ISAT	1	1	3	0	5
A safe after-school environment	1	1	1	3	6
Promotion to the next grade	1	0	1	1	3
There were no positive outcomes	1	2	0	0	3
I don't know	6	1	4	3	8
Other	1	0	0	1	2

Survey Question 20 asked participants to rank what might have been positive outcomes for students attending summer school. There were no significant differences among the four roles for their selection of choice A, $X^2(3) = 5.42$; of choice B, $X^2(3) = 5.88$; of choice C, $X^2(3) = 0.00$; of choice D, $X^2(3) = 3.57$; of choice E, $X^2(3) = 1.25$; of choice H, $X^2(3) = 3.11$; of choice J, $X^2(3) = 2.36$; or of choice K, $X^2(3) = 1.00$. There were insufficient data to analyze the selection of choices F, G, and I. See Table 19 which shows the frequency of each selection by role.

Table 19

Summary of Answers on SQ20 by Adult Participants

Answer choice	Role				Total
	Teacher	Admin.	Parent	Board	
Enhanced academic achievement	7	5	9	5	26
Increased self-esteem	7	2	4	3	16
Improved attendance	2	2	0	0	4
Increased motivation	3	4	3	0	10
Increased scores on standardized achievement tests	1	1	2	2	6
Increased scores on ISAT	1	0	3	0	4
A safe after-school environment	0	1	0	0	1
Promotion to the next grade	5	2	4	4	15
There were no positive outcomes	0	1	0	0	1
I don't know	5	1	3	1	10
Other	0	0	1	1	2

Survey Question 21 asked adult participants to rank several factors that might have contributed to the success of Newton's Academy. There were no significant differences among the four roles for their selection of choice A, $X^2(3) = 4.25$; of choice B, $X^2(3) = 4.51$; of choice D, $X^2(3) = 3.20$; of choice E, $X^2(3) = 5.83$; of choice G, $X^2(3) = 4.50$; or of choice H, $X^2(3) = 2.20$. There were insufficient data to analyze the participants' selection of choices C, F, or I. See Table 20 which shows the frequency of each selection by role.

Table 20

Frequency of Answers on SQ21 by Adult Participants

Answer choice	Role				Total
	Teacher	Admin.	Parent	Board	
Clear support from the district	5	6	2	5	18
Clear support from parents	2	6	2	4	14
Clear support from community	0	0	0	0	0
Additional financial support	3	3	0	1	7
Excellent staff development and follow-up	2	0	3	2	7
Excellent relationships among staff	2	0	0	0	2
Outstanding administration (Principal/coordinator)	1	3	1	2	7
I don't know	5	1	8	2	16
Other	3	0	2	0	5

Survey Question 22 asked adult participants to rank several factors that might have contributed to the success of summer school. There were no significant differences among the four roles for their selection of choice A, $X^2(3) = 3.39$; of choice B, $X^2(3) = 2.51$; of choice D, $X^2(3) = 2.94$; of choice E, $X^2(3) = 3.90$; of choice G, $X^2(3) = 0.27$; or of choice H, $X^2(3) = 2.25$. There were insufficient data to analyze choices C, F, and I. See Table 21 which shows the frequency of each selection by role.

Table 21

Summary of Answers on SQ22 by Adult Participants

Answer choice	Role				Total
	Teacher	Admin.	Parent	Board	
Clear support from the district	5	6	5	6	21
Clear support from parents	5	6	5	3	19
Clear support from community	2	0	0	0	2
Additional financial support	1	2	3	0	6
Excellent staff development and follow-up	2	1	2	3	8
Excellent relationships among staff	1	3	1	0	5
Outstanding administration (Principal/coordinator)	2	0	2	5	9
I don't know	7	1	5	2	15
Other	0	0	2	0	2

Survey Question 23 asked adult participants to rank several obstacles to the success of Newton's Academy. There were no significant differences among the four roles for their selection of choice B, $X^2(3) = 1.00$; of choice E, $X^2(3) = 0.46$; of choice F, $X^2(3) = 3.71$; of choice G, $X^2(3) = 1.50$; of choice H, $X^2(3) = 3.11$; of choice I, $X^2(3) = 3.21$; or of choice J, $X^2(3) = 0.00$. There were insufficient data to analyze choices A, C, and D. See Table 22 which shows the frequency of each selection by role.

Table 22

Summary of Answers on SQ23 by Adult Participants

Answer choice	Role				Total
	Teacher	Admin.	Parent	Board	
Opposition or demands from key district, school, or other staff	6	2	2	0	10
Opposition or demands from parents	1	0	0	1	2
Opposition or demands from community	0	0	0	0	0
Inadequate financial support	3	1	3	0	7
Inadequate preparation of teachers or other school staff	9	6	1	0	16
Insufficient teachers or other school staff	5	4	1	1	11
Student transportation	2	0	1	1	4
Opposition or demands from students	5	1	0	2	8
I don't know	3	2	11	3	19
Other	0	1	0	2	3

Survey Question 24 asked adult participants to rank several obstacles to the success of summer school. There were no significant differences among the four roles for their selection of choice B, $X^2(3) = 3.33$; of choice E, $X^2(3) = 0.50$; of choice G, $X^2(3) = 1.61$; of choice H, $X^2(3) = 2.12$; of choice I, $X^2(3) = 2.40$; or of choice J, $X^2(3) = 3.00$. There were insufficient data to analyze the choices A, C, D, and F. See Table 23 which shows the frequency of each selection by role.

Table 23

Summary of Answers on SQ24 by Adult Participants

Answer choice	Role				
	Teacher	Admin.	Parent	Board	Total
Opposition or demands from key district, school, or other staff	2	1	1	0	4
Opposition or demands from parents	1	2	1	4	8
Opposition or demands from community	1	1	0	0	2
Inadequate financial support	1	0	3	0	4
Inadequate preparation of teachers or other school staff	3	5	0	1	9
Insufficient teachers or other school staff	3	4	3	0	10
Student transportation	2	0	1	3	6
Opposition or demands from students	2	2	1	3	8
I don't know	7	2	8	2	19
Other	1	1	1	1	4

Survey Question 5 and Survey Question 6 were designed to determine if adult participants knew what subjects were offered during Newton's Academy and summer school. Participants were to mark all answers that they thought were taught during each intervention.

A 4 X 7 chi-square was used to compare the four different adult roles on their understanding of what subjects were taught during Newton's Academy. Chi-square could not be computed for choices 5A, 5C, or 5D due to insufficient data. There was not a significant difference among the four adult roles for choice 5B, $X^2 (3) = 1.91$. Likewise, there was not a significant difference among the four roles for choice 5E, $X^2 (3) = 1.91$, nor was there a significant difference for choice 5G, $X^2 (3) = 2.13$. There was a significant difference among the groups for choice 5F, $X^2 (3) = 10.61, p < .05$. See Table 24 for the frequency of each choice by role.

Table 24

Frequency of Choice by Adult Role

Survey Question 5	Role of Participants			
	Teachers	Admin.	Parents	Board
Reading	13	6	8	5
Science	0	0	1	0
Math	4	2	3	4
English	0	1	1	1
Social Studies	0	0	1	0
I don't know	0	0	5	0
Other	1	0	0	0

A second 4 X 7 chi-square was used to compare the four adult roles on their understanding of what subjects were taught in summer school. Chi-square could not be computed for choices 6A, 6B, 6C, 6D, 6E, or 6G due to insufficient data. There was no significant difference among the four roles for choice 6F, $X^2 (3) = 6.02$.

Survey Questions 27-33 were open-ended questions and adult participants were invited to share thoughts or perceptions that may not have been addressed in the previous questions. Initial coding resulted in 10 categories of participants' comments. These categories included: curriculum, communication, time, class size, motivation, student selection, professional development, transportation, parental involvement, and financial considerations. Eventually 18 categories resulted from breaking down and adding dimensions to the original categories. For example, the category of "motivation" was further broken down to include "student motivation," "student behavior," and "teacher motivation." Likewise, "curriculum" became "curriculum" and "professional development."

Teachers made 119 comments in 12 different categories. Thirteen teachers participated for an average of 9.2 comments per teacher. A total of 50% of their comments were in the areas of "curriculum" and "communication." Administrators made 59 comments in a total of 14 categories. Seven administrators participated in the survey, making an average of 8.4 comments per administrator. A total of 50% of the comments made by administrators were in the categories of "curriculum" and "professional development." Parents made 60 comments in a total of 14 categories. Fourteen parents participated in the survey, making an average of 4.3 comments per parent. A total of 44% of the comments made by parents were in the categories of "curriculum" and

“communication.” School board members made 28 comments in a total of 7 categories. A total of 67% of the comments made by school board members were in the categories of “curriculum” and “student motivation.” See Table A2 in Appendix A for a summary of representative comments.

In order to provide internal validity for the study, the Stanford 10 Achievement Test was used for triangulation. The Stanford 10 Achievement Test was an appropriate test to use because it was used in the process of determining who would be invited to participate in both Newton’s Academy and summer school. Furthermore, the school administrators had chosen the Stanford 10 achievement test as one of its achievement and accountability measures due to its close association with the ISAT test. Both tests are designed by the Harcourt Brace publishing company and both tests use the same norm referencing criteria.

Mixed-model ANOVAs were used to analyze the data provided by the pre- and posttests administered to the study participants. This method of analysis was similar to that used for the data provided by the ISAT. The Stanford 10 Achievement Test administered in October 2007 served as a pretest while the Stanford 10 Achievement Test administered in September 2008 served as a posttest. The data from the Stanford 10 Achievement pre- and posttest provided similar outcomes to that provided by the data from the ISAT pre- and posttest.

Specifically, the data from the Stanford 10 Achievement pre- and posttest provided triangulation for the first research question: To what extent did two intervention programs in one small, rural school district impact the ISAT scores of the program participants? Results from the mixed-model ANOVA indicated that there was a

statistically significant difference in the mean scores of the reading test based on the condition of the participants. The Newton's Academy condition was significantly different from both the summer school condition and the control group. Newton's Academy participants increased the mean of their reading score by 5.13 points while the summer school participants' mean score decreased by 2.94 points and the control group participants' mean score decreased by 3.37 points. Likewise, the ISAT reading scores of those students who participated in both interventions were significantly different from the ISAT reading scores of those students in summer school and those students in the control group. Those students who attended both Newton's Academy and summer school increased the mean score of their ISAT reading test by 1.53 points. Once again this increase is compared to the decrease in the mean score of the ISAT reading test of the students in the summer school condition and the control condition. Similar results were noted for the ISAT data analysis.

Further analysis provided triangulation for the second research question: To what extent might other factors such as school attendance, native language, socio-economic status, primary classroom teacher, IEP, gender, and grade level have impacted the effectiveness of the interventions? The results from the series of mixed-model ANOVAs used to analyze the data from the reading section of the Stanford 10 Achievement Test were similar to the results of the mixed-model ANOVAs used to analyze the data from the reading section of the ISAT. Specifically, there were no statistically significant differences among the participants based on the interaction of the Stanford 10 Achievement test scores and attendance, ELL, SES, IEP, gender, or grade level. Unlike the analysis of the ISAT data, there were no significant differences between grade levels

on the Stanford 10 test. Also, there were similar results for the two tests from the analysis of the data concerning the impact of homeroom teacher. Data from both the ISAT test and the Stanford 10 test indicated that there was a significant difference in the interaction between the test and homeroom teacher. Unlike the ISAT test for which the follow-up Tukey HSD was inconclusive, the follow-up Tukey HSD for the Stanford 10 indicated a significant difference between homeroom teacher #4 and homeroom teachers #1, #9, and #13.

The similar results from data analysis for the ISAT and Stanford 10 Achievement test provide validity to the current study.

Data collection and reporting is an important step in answering the three research questions that guided this case study, but collection and reporting are not enough to answer the research questions. The next section will be a discussion of the conclusions that might be drawn from the data.

Conclusions

The current research was a case study, the purpose of which was to study the impact of two interventions implemented in grades 3-5 in a small, rural school in the Midwest. Data were collected from school records, student participant surveys, and adult participant surveys. Three research questions were developed for the purpose of determining the impact of an extended-day program called Newton's Academy and an extended-year program called summer school.

The first research question to be answered was: To what extent did two intervention programs in one small, rural school district impact the ISAT scores of the program participants.

Student ISAT scores from March 2008 were used as a pretest, while the March 2009 ISAT scores served as the posttest. The scores derived from the ISAT test indicated that there was a significant difference between the pre- and posttest scores. Further analysis of the data indicated a statistically significant difference in the mean scores of the ISAT reading test based on the condition in which the students had been placed. The mean of the ISAT reading scores of those students who participated only in Newton's Academy were significantly different from those students who participated only in summer school. Students who attended Newton's Academy raised the mean of their ISAT reading scores by an average 2.23 points, while those students who attended only summer school raised the mean score of their ISAT reading scores by an average of .39 points. Additionally, those students who participated in the control group raised the mean score of their ISAT reading test an average of 1.80 points which was statistically different from the 2.23 points gain in mean score made by students who attended Newton's Academy. Comparing those students who attended both Newton's Academy *and* summer school to those students who attended only summer school, the students receiving both interventions raised the mean score of their ISAT reading test an average 2.60 points compared to an average .39 points for those who attended only summer school. Finally, those students receiving both interventions raised the mean score of their ISAT reading test an average of 2.60 points compared to an average of 1.80 points increase realized by the control group. Overall, the most successful condition based on this study was the group of students who participated in both Newton's Academy *and* summer school, but the scores of these students were not significantly different from those students who participated in just Newton's Academy.

One factor that may have made a difference in the outcomes from the statistical analysis is the fact that students who attended summer school could attend a class in reading, in math, or in both subject areas. The assignment of condition did not separate those students who received instruction in only math classes from those who received reading instruction in summer school. All students who attended summer school were assigned the condition of summer school.

The second research question to be answered was: To what extent might other factors such as school attendance, native language, socio-economic status, primary classroom teacher, IEP, gender, and grade level have impacted the effectiveness of the interventions? The nature of a case study is such that the researcher gathers in-depth data to study, in this case a group, taking the group's context into account (Robson, 2002). Part of the context of this study was the myriad of factors that may have impacted the effectiveness of the interventions implemented in the school to raise ISAT scores. Consequently, data from school records were used to determine the significance of various factors on the ISAT scores of the participants. For this series of mixed-model ANOVAs, students were not grouped according to condition but rather by other factors.

The first factor considered was the number of days that students were in attendance of the school year during which the study took place. Students who missed 0-4 days comprised Category 1; 5-8 days, Category 2; 9-12 days, Category 3; 13-16 days, Category 4; and 17 or more days, Category 5. An analysis of the data indicated there was no significant difference in the mean scores of the ISAT reading test between any of the categories. Even those students who missed the least number of days of school did not

perform significantly better on the ISAT reading test than those students who missed 17 days or more during the school year.

A second factor considered for the study was the impact on the mean score of the ISAT reading test if the participant was an English language learner. According to the analysis of the data, there was no statistically significant difference in the mean scores of the ISAT reading test between those students in the study whose primary language was English and those students who were identified as English language learners. One point of consideration might be that no determination was made as to the extent of the language capabilities of the English language learners. From the study, there is no way to know if the student was a recent arrival in an English-speaking school or whether the student had become fairly well acclimated to the English-speaking environment. Even so, for this particular group of ELL students, there was no statistically significant difference in the performance of English language learners when compared to their peers who were native speakers of English.

The next factor considered was the effect that the socio-economic status of student participants may have had on the two interventions. The scores of the ISAT reading test of students who received free or reduced lunch during the time period of the study were compared to the scores of those students who paid the regular price for lunch. There was no statistically significant difference in the mean scores of the ISAT reading test of those students who received free or reduced lunches when compared to the scores of those students who did not receive this financial assistance.

Among the student participants in the study were students who had IEPs. To determine whether this factor was statistically significant, the ISAT reading scores of

students with IEPs were compared to those students without IEPs. An analysis of the scores indicated that there was a statistically significant difference. As a group, students having IEPs gained an average of 2.37 points in the mean score of their ISAT reading test as compared to an average of 1.49 points gained by students without IEPs. Therefore, an analysis of the data from this study suggests that participants in the study with IEPs made statistically significant higher gains than did their counterparts without IEPs. What is not accounted for in this study is what academic services may have been provided for the IEP students which were not provided for the non-IEP students. Also of note is that of the 89 participants in the study, 24 students had IEPs; but of these 24 students with IEPs only 4 were in the control group that did not receive either intervention. Further study would be needed to determine if the interventions or some other factor were responsible for the performance of those students with IEPs.

Another factor considered in determining what may have impacted the effectiveness of the interventions was the gender of the participants. There were 54 male student participants and 35 female student participants in the study. An analysis of the data suggests that there was no statistically significant difference between the ISAT reading scores of the male participants when compared to ISAT reading scores of the female participants.

Another factor examined during the case study was the grade level of the student participants during the year-long study. The school in which the study took place was a 3-5 grade center with a total student enrollment of 340. Participants in the four conditions represented a little over one-fourth of the school enrollment (26%). Of the 89 participants, 34 students were in the 3rd grade, 31 students were in the 4th grade, and 24

students were in the 5th grade. Data analysis indicated that there was a statistically significant difference in the ISAT reading scores based on grade level of the participants. The pre- and posttest scores of 3rd grade students showed an average loss in the mean score of 1.12 points on the ISAT reading test. Both 4th grade and 5th grade participants experienced a gain on the mean score of the posttest. The 4th grade students exhibited an average gain on the mean score of 3.75 points while the 5th grade participants showed an average gain of 3.17 points. Therefore, statistical analysis suggested that there was a significant difference between the scores of 3rd grade participants compared to 5th grade participants and between 4th grade participants when compared to 5th grade participants. However, there was no statistically significant difference between the 3rd and 4th grade participants.

A final factor studied that may have impacted the effectiveness of the interventions was the assignment of participants to their homeroom teachers. Students were placed in homerooms that were heterogeneously mixed. Each homeroom had students who participated in one or more of the interventions, who were assigned to the control group, and who were not a part of the study. The initial mixed-model ANOVA used to determine whether or not there was a significant difference in ISAT reading test scores among the students assigned to the various homeroom teachers indicated that there was a significant difference based on the homeroom teacher of the participants. However, a follow up Tukey HSD test proved inconclusive due to the small number of students participating in the study from each homeroom.

From an analysis of the data from various factors investigated in the case study, it appears that few factors other than condition made a significant difference between pre-

and posttest ISAT reading scores. The extended-day intervention known as Newton's Academy made a statistically significant difference in the mean scores of the ISAT reading test as did the combined interventions of Newton's Academy and summer school. Likewise, students with IEPs had a statistically significant difference in the mean scores of their ISAT reading test when compared to their peers who did not have IEPs. Lastly, grade level of the participants appeared to impact the mean scores of the ISAT reading test.

The third research question to be answered was: To what extent might other factors such as student, parent, teacher, and administrator perceptions of the two interventions have impacted the effects of the intervention programs? This research question required a more qualitative analysis of data. Tests were run to determine any statistically significant differences; but even in instances where outcomes were not statistically significant, it was appropriate to look at the data to find emerging trends and patterns. Therefore, in the following section some of the non-statistically significant data are examined as part of the qualitative analysis in this case study.

Students who attended Newton's Academy were asked five questions, the purpose of which was to determine the students' perception of the impact that Newton's academy may have had on their school life. When asked if Newton's Academy helped them earn better grades in school, 96% of the students said that Newton's Academy helped at least a little bit with 29% saying Newton's Academy helped a lot. When asked if Newton's Academy helped to make homework easier, students were not quite as positive in their responses. Thirty-three percent of the students said Newton's Academy did not help make homework easier, while the other 67 % said the program helped at least a little.

When asked if attending Newton's Academy helped them do better on their ISAT tests, 92% said it helped at least a little. Students were more divided in their answer to the question asking them if Newton's Academy make them feel better about themselves. Seventeen percent of the Newton's Academy participants said it did not help, while the remaining 83% said it helped at least a little. When asked if attending Newton's Academy helped them feel safer after school, 29% said it did not help, but 71% said it helped at least a little. Of interest is the fact that 92% of the participants in Newton's Academy said they thought the intervention helped them at least a little bit on their ISAT test. According to the data derived from the ISAT reading scores, they might very well have been correct.

All students who attended summer school were asked four questions. When asked if attending summer school helped them earn better grades in school, 13% said it did not help while the remaining 87% said it helped at least a little bit. Likewise, 13% of those participants who attended summer school felt that summer school did not help them do better on their ISAT test, while 87% said it helped at least a little. When asked if attending summer school made them feel better about themselves, 30% said it did not help while 70% said it helped at least a little. A final question asked students if attending summer school made them feel safer. Twenty percent responded that it did not help, while 80% said it helped at least a little bit. Based on the data, the actual gain in the ISAT reading scores did not reflect the summer school students' perception of the benefits of summer school.

After adjusting for the difference in number of questions on the two questionnaires, it appears that students who attended Newton's Academy were slightly

more positive than students who attended summer school. Overall, there was a lower percentage of “did not help” responses on the Newton’s Academy questionnaires than on the summer school questionnaires. Likewise, there was a slightly larger percentage of answers in the “helped quite a bit” and “helped a lot” categories on the Newton’s Academy questionnaires.

A third series of questions was designed for those students who attended both Newton’s Academy and summer school. Student participants were asked to compare their experience in the two interventions. They were to respond by marking Newton’s Academy, summer school, both, or neither. When asked which intervention helped them the most to earn better grades, their responses were equally divided with 25% selecting each choice. When asked which intervention helped them the most with homework, the students were equally divided between Newton’s Academy and summer school with each intervention receiving 25% of the total count. The other half of the participants was largely in agreement that neither intervention helped with 42% marking “neither” as their choice. When asked which program helped them the most with their ISAT test, summer school was chosen 25% of the time; while Newton’s Academy was chosen 17 % of the time. Another 25% of the students said neither program helped, and 33% said both did. When asked about which intervention made them feel safer, 17% said Newton’s Academy and 8% said summer school. Half of the students said neither, while 25% said both. The final question asked which program helped them feel better about how well they could do in school. Once again, the answers were fairly evenly distributed: 17% said Newton’ Academy, 25% said summer school; 25% said both; and 33% said neither. It appears that students were more positive about the helpfulness of the interventions when

asked separately about them. Those students who participated in both interventions were less positive about the benefits derived from the two programs with anywhere from 25% to 50% of the responses for each question indicating that neither Newton's Academy nor summer school was helpful.

A separate questionnaire was designed for adult participants. The same questionnaire was distributed to participants in all four roles: teachers, administrators, parents, and board members.

Survey Questions 1 and 2 were designed to determine if all adult participants were in agreement about the possible reasons that students might have attended Newton's Academy and/or summer school. Although data analysis indicated that there was no significant difference in the way the four roles marked their selections for SQ1 and SQ2, it may be of interest to determine the areas of agreement. As recorded in Table 13, a total of 113 selections were made from the 7 choices given. Of the total 113 selections, 63 (56%) of the selections were the first two choices: To decrease the possibility of failing; To improve academic achievement. It appears that adult participants in all four roles had similar perceptions as to why students attended Newton's Academy. Survey Question 2 asked a similar question about the reasons that students might have attended summer school. According to Table 14, a total of 110 selections were made from the 7 choices given. Of the 110 selections, 68 (62%) of the selections were the first two choices: To decrease the possibility of failing; To improve academic achievement. Once again it appears that adult participants in all four roles have a similar perception as to why students attended summer school.

Survey Questions 3 and 4 were designed to determine if adult participants agreed on the selection process for students attending Newton's Academy and/or summer school. A complete table of the frequency for each choice for Survey Question 3 can be found in Table 15. Likewise, a complete table of the frequency for each choice for Survey Question 4 can be found Table 16.

For SQ3, participants were asked how students were selected for Newton's Academy. Participants were given seven choices and asked to rank their first, second, and third choices. There were four significant differences among the four roles on their selection of choice A. A total of 108 choices were made among the four roles. Data analysis indicated that there was a significant difference between teachers and parents, between teachers and board members, between administrators and parents, and between administrators and board members. Choice A (Teacher recommendation) was marked a total of 33 times by participants in the four roles. Choice A was marked by teachers a total of 11 times, 31% of their total choices. Choice A was marked by administrators a total of 6 times, 29% of their total choices. Choice A was marked by parents a total of 11 times, 33% of their total choices; and choice A was marked by board members a total of 5 times, 28% of their total choices. Overall, there appears to be a difference in the perceptions of the participants in the four adult roles as to whether teacher recommendation was used in the selection of students for Newton's Academy. Likewise, choice D (standardized test scores) was significantly different between teachers and parents, and between administrators and parents. Adult participants marked choice D a total of 27 times. Choice D was selected by teachers a total of 10 times, 28% of their total choices. Choice D was selected by administrators a total of 6 times, 29% of their total

choices. Choice D was selected by parents a total of 7 times, 21% of their total choices. Choice D was selected by board members a total of 4 times, 22% of their total choices. There appeared to be some differences in perception as to whether standardized test scores were used for selection of students for participation in Newton's Academy.

SQ4 asked participants in the four roles to mark how students were selected for summer school. They were given seven choices and asked to rank their first, second, and third choices. There were two significant differences for the selection of choice B. There was a difference in selection between teachers and parents, and between parents and board members. Choice B (parent request) was marked a total of 109 times by participants in the four roles. Choice B was selected by teachers a total of 6 times, 16% of their total choices. Choice B was selected by administrators a total of 3 times, 14% of their total choices. Choice B was selected by parents a total of 5 times, 15 % of their total choices. Choice B was selected by board members a total of 4 times, 22% of their total choices. Even though there is little difference in the percentages of teacher and parent selection of Choice B, they were statistically significant when all of the choices of the teachers and parents were analyzed. Perhaps of more importance for determining perception of the four roles is the fact that 100% of the administrators and 100% of the board members marked that selection for summer school was at least partially based on teacher recommendation while only 85% of the teachers marked teacher recommendation as a choice. Likewise, 79% of parents marked teacher recommendation as a choice. This discrepancy about whether teacher recommendations were used for inviting students to summer school became an object of comment in the open-ended questions later in the

questionnaire. Further discussion of this issue appears in the discussion of the open-ended questions.

Survey Questions 5 and 6 were designed to determine if participants in the four roles agreed on the subjects that were taught in Newton's Academy (SQ5) and summer school (SQ6). Choices included reading, science, math, English, social studies, I don't know, and other. Participants were to mark all that applied. There were insufficient data to make a statistical analysis of the participants' answers. It may be of interest to note that reading was the only subject taught in Newton's Academy, and 90% of the participants marked reading as one of their choices including 13 (100%) of the teachers, 6 (86%) of the administrators, 8 (57%) of the parents, and 5 (83%) of the board members. Likewise, it may be of interest to note that 33% of the participants chose math as one of the subjects taught in Newton's Academy even though it was not taught. This number included 4 (31%) of the teachers, 2 (29%) of the administrators, 8 (57%) of the parents, and 4 (67%) of the board members.

Reading and math were taught in grades 3-5 in summer school. A total of 36 (90%) of the participants chose reading as one of the subjects taught in summer school, while 35 (88%) chose math as one of the subjects taught in summer school. It may be of interest to note that 13 (100%) of the teachers, 7 (100%) of the administrators, 10 (71%) of the parents, and 5 (83%) of the board members chose math as one of the subjects taught in summer school. It appears that the subjects taught in summer school were more familiar with the adult participants than the subjects taught in Newton's Academy. This may be due to the fact that summer school has been used as an intervention in the school

district for several years, while the Newton's Academy was implemented for the first time during the 2007-2008 school year.

Survey Questions 7 and 8 were designed to determine if the adult participants in the four roles knew how often teachers in the Newton's Academy and summer school consulted with the regular classroom teachers on instruction and/or goals of each program. Participants were asked to make one selection from six choices. Analysis of the data showed that there were no significant differences among the four roles in how they selected answers for SQ7 and SQ8. See Table 11 for a complete table of means and standard deviations for SQ7 and SQ8. It may be interesting to note that a total of 17 (43%) participants said they did not know. Of the 17 participants who did not know how often Newton's Academy teachers consult with classroom teachers about the instruction and/or goals of the Newton's Academy program, 1 (8%) was a teacher, 3 (43 %) were administrators, 10 (71 %) were parents, and 2 (33%) were board members. When asked how often summer school teachers consult with classroom teachers about the instruction and/or goals of the summer school program, 16 (40%) of the adult participants said they didn't know. Of the 16 participants who did not know how often summer school teachers consulted with classroom teachers about the instruction and/or goals of the summer school program, 2 (15 %) were teachers, 3 (43%) were administrators, 8 (57%) were parents, and 3 (50%) were board members. It would be appropriate that a much higher percentage of teachers than parents knew how often summer school teachers consulted with classroom teacher.

Survey Questions 9 and 10 were designed to determine if the adult participants in the four roles knew how often teachers in Newton's Academy and teachers in summer

school consulted with regular classroom teachers on student performance. Participants were asked to select one answer from six choices.

Analysis of the data suggested that there was a statistically significant difference between the choice made by administrators and the board on SQ9. There were a total of 7 administrators who answered SQ9. One (14%) administrator answered, “Only prior to the start of school;” 1 (14%) answered, “Not at all;” and 5 (71%) answered, “I don’t know.” There were a total of 6 board members who answered SQ9. Two board members (33%) answered, “Regular classroom teachers teach their own students in Newton’s Academy;” 2 (33%) answered, “Regularly throughout the school year;” 1 (17%) answered, “As needed throughout the school year;” and 2 (33%) answered, “I don’t know.” There was also a significant difference between parents and the board. A total of 13 parents answered SQ9. Two parents (15%) answered, “Regularly throughout the school year;” and 11(85%) answered, “I don’t know.” Although there was a statistically significant difference between the answers of administrators and the board when all choices were analyzed, it may be of note that a fairly large percentage of the answers was “I don’t know.” Likewise, there was a statistically significant difference between the answers of board members and parents when all choices were analyzed, but again it may be noteworthy that a large percentage was “I don’t know.”

Data analysis suggested there was no statistically significant difference in the way the four roles answered SQ10. Although the statistical analysis of the data produced no significant outcomes, it may be of note that of the 38 adult participants who answered question SQ11, 18 (46%) answered, “I don’t know.” It also may be important that 10 (77%) of the teachers, answered, “Not at all.”

Survey Questions 11 and 12 were designed to determine if the adult participants in the four roles agreed on how often the teachers in Newton's Academy and the teachers in summer school consulted with parents on student goals. For each question, participants were to make one selection from five choices. Once again, even when statistical significance was not present in the data analysis output, for qualitative purposes it was appropriate to look further for emerging patterns and issues.

Data analysis for SQ11 indicated that there was no significant difference among the responses of the four adult participant roles. A total of 39 adult participants answered the question asking how often teachers in Newton's Academy consulted with parents on student goals. Of the 39 participants, 18 (46%) answered, "I don't know." Of the 13 teachers, 9 (69%) answered, "I don't know;" 4 (31%) of the 13 parents selected, "I don't know;" 2 (33%) of the 6 board members selected, "I don't know;" and 3 (43%) of the 7 administrators selected, "I don't know." The "not knowing" pattern will be discussed in the section on the comments by participants in the open-ended questions.

Data analysis for SQ12 indicated that there was a significant difference in the responses of the four adult roles when participants were asked how often the teachers in summer school consult with parents on student goals. There was a statistically significant difference between the way teachers and parents answered the question. Of the 13 teachers who answered the questions, 11 (85%) selected, "I don't know;" while 1 (8%) selected, "Only prior to the start of the summer school program;" and 1 (8%) selected, "Not at all." On the other hand, of the 13 parents who answered the question, 7 (54%) selected, "As needed throughout the summer school program;" 3 (23%) selected, "I don't know;" 2 (15%) selected, "Only prior to the start of the summer school program;" and 1

(8%) selected, “Not at all.” There was also a significant difference between the way teachers and board members answered the questions. Of the 6 board members, 2 (33%) selected, “I don’t know;” 2 (33%) selected, “Regularly throughout the summer school program;” 1 (17%) selected, “As needed throughout the summer school program;” and 1 (17%) selected, “Only prior to the start of the summer school program.” Although there was no significant difference between the answers of the administrators and any other group, it may be noteworthy that of the 7 administrators, 3 (43%) selected, “I don’t know;” while 2 (29%) selected, “As needed throughout the summer school program;” 1 (14%) selected, “Regularly throughout the summer school program;” and 1 (14%) selected, “Not at all.” Overall, there seemed to be a good deal of confusion as to how often teachers consulted with parents on student goals.

Survey Questions 13 and 14 were designed to determine if the adult participants agreed on the frequency with which teachers in Newton’s Academy and teachers in summer school consulted with parents about student performance. Each question had five answers from which the participants could select. Data analysis determined that there was no significant difference in the way the various categories of adult participants answered either question, but once again further examination of the data showed a continuing pattern that started with Survey Question 8. As the answers to the survey questions continued, a pattern of “not knowing” began to emerge.

Of the 40 participants who answered SQ13 which asked how often teachers in Newton’s Academy consulted with parents about student performance, 17 (43%) selected, “I don’t know.” Nine of the 13 teachers (69%) selected, “I don’t know;” 2 of 7 administrators (29%) selected, “I don’t know;” 4 of 14 parents (29%) selected, “I don’t

know;” and 2 of 6 six board members (33%) selected, “I don’t know.” It seems surprising that of the four adult participant roles, teachers appeared the least knowledgeable about teacher consultation with parents about student performance during Newton’s Academy. This could be due to the fact that not all teachers taught in Newton’s Academy. Parents ranked with administrators as the most knowledgeable.

Of the 40 participants who answered SQ14 which asked how often summer school teachers consulted with parents about student performance, 16 (40%) selected, “I don’t know.” Once again teachers were unsure about the frequency of summer school teacher/parent consultations. Of the 13 teachers, 11 (85%) selected, “I don’t know;” 3 of the 7 administrators (43%) selected, “I don’t know;” and 2 of the 6 board members (33%) selected, “I don’t know.” Of the 13 parents who answered SQ 14, 10 (77%) selected, “As needed throughout the summer school program;” while 2 (15%) selected, “Regularly throughout the summer school program;” while only 1 parent (7%) selected, “I don’t know.” Once again, parents appeared more knowledgeable about the number of times parents were consulted about student performance during the summer school program. Their answer selections were also generally more positive than the other three adult participant roles.

Survey Questions 15 and 16 were designed to determine if there was any difference in the understanding of the adult participants concerning how often the Newton’s Academy teachers and the summer school teachers consulted with the students on student goals. Participants were asked to select an answer from five choices to answer each question. Data analysis for both questions suggested that there was no statistically significant difference in the way the four adult participant roles answered either question.

However, further examination of the data showed a continuing pattern even though the data analysis indicated no significant differences.

Of the 40 adult participants who answered SQ15, 23 (58%) selected, “I don’t know” when asked how often Newton’s Academy teachers consult with students on student goals. “I don’t know” was selected by 8 (62%) of the teachers, by 4 (57%) of the administrators, by 9 (64 %) of the parents, and by 2 (33%) of the board members. The pattern of “not knowing” continued with the answers given for SQ 15.

Of the 39 adult participants who answered SQ16, 20 (51%) answered “I don’t know” when asked how often summer school teachers consult with students on student goals. “I don’t know” was selected by 11 (85%) of the teachers, by 4 (57%) of the administrators, by 3 (23%) of the parents, and by 2 (33%) of the board members. The pattern of “not knowing” was still prevalent, especially for the teachers and the administrators.

Survey Questions 17 and 18 were designed to determine if there was any difference in the understanding of the four adult participant roles concerning how often Newton’s Academy teachers and summer school teachers consulted with students on student performance. Participants were asked to select one of five answers for each question. Data analysis for SQ17 and SQ 18 indicated that there was no statistically significant difference in the way the four adult participant roles answered either question. In order to determine if the “not knowing” pattern continued, further investigation of the data was necessary.

Of the 40 participants who answered SQ 17, 24 (60%) selected “I don’t know” when asked how many times Newton’s Academy teachers consult with students about

student performance. Once again, there was a strong indication that the “I don’t know pattern” continued. “I don’t know” was selected by 9 (69%) of the teachers, by 3 (43%) of the administrators, by 10 (71%) of the parents, and 2 (33%) of the board members.

Of the 39 participants who answered SQ18, 20 (51%) selected, “I don’t know” when asked how often summer school teachers consult with students on student performance. “I don’t know” was selected by 11 (85%) of the teachers, by 3 (43%) of the administrators, 4 (31%) of the parents, and 2 (33%) of the board members. Parents appeared a little more confident in their knowledge of summer school teacher/student consultation than they were in their knowledge of Newton’s Academy teacher/students consultations. Again, this could be due to the fact that Newton’s Academy is a new intervention compared to the longevity of the summer school program in this district. “Regularly throughout the summer school program” was select by 2 (29%) of the administrators, by 1 (8%) of the parents, and by 4 (67%) of the board members. “As needed throughout the summer school program” was selected by 2 (15%) of the teachers, by 1 (14%) of the administrators, and by 7 (54%) of the parents. “Only at the end of the summer school program” was selected by 1 (14%) of the administrators. “Not at all” was selected by 1 (14%) of the administrators and 1 (8%) of the parents. Teachers appeared the least positive about how often summer school teachers consulted with the students when compared to the other roles. Administrators (53%), parents (62%), and board members (67%) felt that summer school teachers consulted with students on student performance either regularly or as needed throughout the summer school program.

Survey Questions 19 and 20 were designed to determine what the adult participants might consider to be positive outcomes of Newton’s Academy and summer

school. Participants were given 11 possible positive outcomes and asked to rank their top three choices. Because of the limited number of participants and the extensive number of choices, there were insufficient data to determine if there were any statistically significant differences in the way the four roles ranked the positive outcomes. An alternative way to seek qualitative data was to look at the frequency with which participants chose each possible outcome. See Table 17 and Table 18 which summarize the frequency with which the outcomes were chosen by each of the adult participant roles. Although the frequency tables do not indicate first, second, and third choice, they do indicate the total times each outcome was selected by each of the four roles. Summarizing how the four roles chose positive outcomes for Newton's Academy continues the qualitative analysis of the data.

For question SQ19, participants were to rank possible positive outcomes of Newton's Academy. Overall, the top three positive outcomes chosen by all of the participants were "Enhanced academic achievement," "Increased self-esteem," and "Increased motivation." Teachers, administrators, and board members chose the same outcomes as their top three choices when the data was analyzed by role. Only parents did not list "Increased self-esteem" as one of their top three choices. Instead, parents as a group were the only group who marked "Increased standardized test scores" as one of their top three outcomes. Generally, adult participants had similar views concerning the positive outcomes of Newton's Academy. A review of Table 17 shows the frequency of each choice.

For SQ20, participants were to rank the possible positive outcomes of the summer school program. Overall, the top three positive outcomes chosen by all adult participants were "Enhanced academic achievement," "Increased self-esteem," and "Promotion to the

next grade.” Teachers, parents, and board members all agreed that these were the top three positive outcomes of the summer school program. Administrators chose the same three; but a fourth choice, “Improved attendance,” tied for third place with the administrators. It appeared that adult participants were mostly in agreement about the positive outcomes of the summer school program. A review of Table 18 shows the frequency of each choice.

Survey Questions 21 and 22 were designed to determine what adult participants might consider as contributing factors to the success of Newton’s Academy and the summer school program. Participants were given nine possible contributing factors and were asked to rank their top three choices. Once again, because of the limited number of participants and the extensive number of choices, there were insufficient data to determine if there was any statistically significant difference in the way the four roles ranked the possible contributing factors. Therefore, a frequency table was used to seek qualitative data.

For SQ21, the overall top three choices for all participants were “Clear support from the district,” “Clear support from the parents,” and “I don’t know.” All four groups of adult participants included “Clear support from the district” in their top three choices. Administrators, parents, and board members all included “Clear support from parents” in their top three choices, while teachers did not. Teachers and parents included “I don’t know” in their top three choices, but administrators and board members did not. Generally, there were fewer consensuses about the factors that contributed to the success of Newton’s Academy than there were concerning the positive outcomes of Newton’s

Academy as discussed in SQ19. See Table 19 for a summary of the frequency with which each contributing factor was selected.

For SQ22, the top three overall choices for all participants when asked about possible contributors to the success of summer school were “Clear support from the district,” “Clear support from parents,” and “I don’t know.” All four groups of adult participants included “Clear support from the district” and “Clear support from parents” in their top three choices. On the other hand, there was a wide variety in the selections for third choice. See Table A 20 for a summary of the frequency with which each contributing factor was selected.

Survey Questions 23 and 24 were designed to determine if there was any significant difference in what adult participants perceived as obstacles to the success of Newton’s Academy and summer school. Participants were presented ten choices and asked to rank in order their first, second, and third choices. As with the other similar type questions, there were insufficient data to determine if a statistically significant difference existed among the four roles of the adult participants. Consequently, it became necessary once again to examine the frequency of selections in order to qualitatively examine the data.

For SQ23, the top three selections for adult participants when asked what might be considered obstacles to the success of Newton’s Academy were “I don’t know,” “Inadequate preparation of teachers or other staff,” and “Opposition or demands from key district, school, or other staff.” It may be of interest that “I don’t know” received more selections than any of the others and continues the trend of “not knowing.” Parents, in particular, seemed not to know what obstacles might have existed as demonstrated by

their marking “I don’t know” as their top-ranked response. Teachers, administrators, and parents, all chose “Opposition or demands from key district, school, or other staff” among their top three choices, while board members did not. Other choices by the various adult groups were distributed in such a way that it was difficult to observe any patterns or trends. See Table A 21 for summary of the frequency with which each choice was selected.

In SQ24, the top three selections for adult participants when asked what might be considered obstacles to the success of summer school were “I don’t know,” “Insufficient teachers or other school staff,” and “Inadequate preparation of teachers or other school staff.” Once again, the pattern of “not knowing” continued. “I don’t know” was the most often chosen response for both teachers and parents. Teachers, administrators, and parents chose “Insufficient teachers or other school staff” among their top three choices. As before, it was difficult to discern any patterns or trends in the rest of the answers due to the variety exhibited in the choices. See Table A 22 for summary of the frequency with which each choice was selected.

Survey Questions 25 and 26 were designed in such a way that adult participants were asked for their overall perception of Newton’s Academy and the summer school program. Participants were presented with four choices ranging from excellent to poor and were asked to select one choice. Data analysis determined that there was a statistically significant difference in the way the adult participants in the four roles answered both questions. See Table 11 for the means and standard deviations for SQ25 and SQ26.

For SQ25, there was a significant difference between the overall rating of the Newton's Academy by teachers and parents. Parents rated the effectiveness of Newton's Academy higher than teachers did. Neither teachers nor administrators rated Newton's Academy as "excellent." Overall the highest rating from teachers, administrators, and board members was "fair." Parents mostly perceived Newton's Academy as "excellent" or "good." See Figure 1.

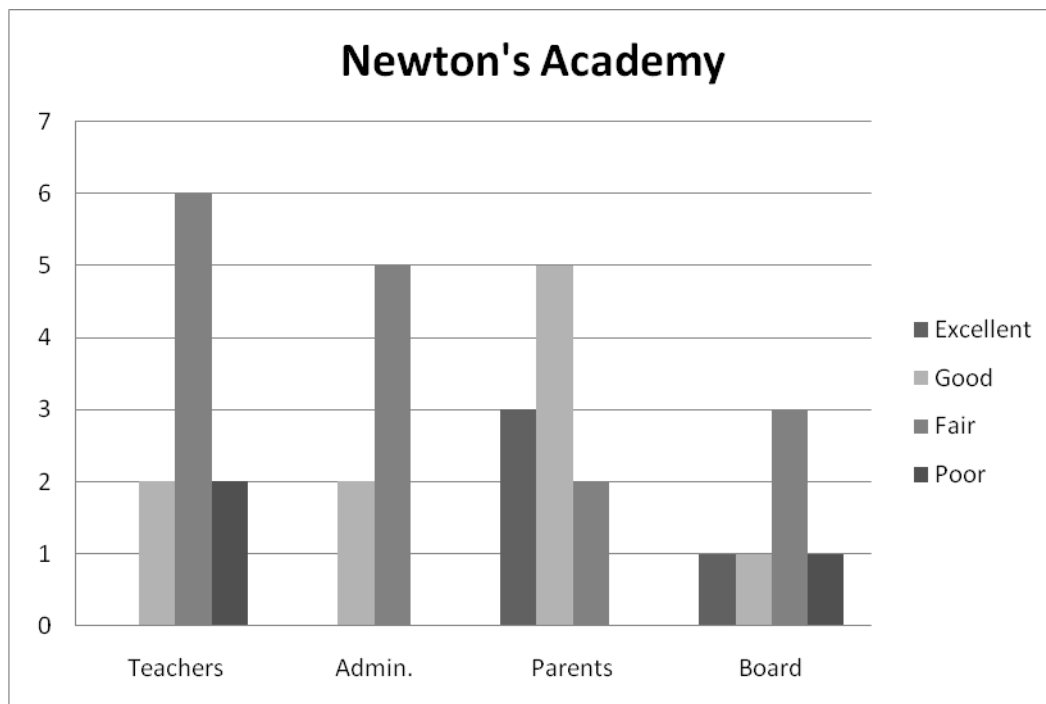


Figure 1. Perception of overall effectiveness of Newton's Academy.

For SQ26, data analysis indicated that there was a significant difference in the overall perception of the effectiveness of the summer school based on the roles of the adult participants. Parents perceived the summer school program to be more effective than teachers did. Likewise, parents perceived the summer school program to be more effective than did administrators. See Figure 2.

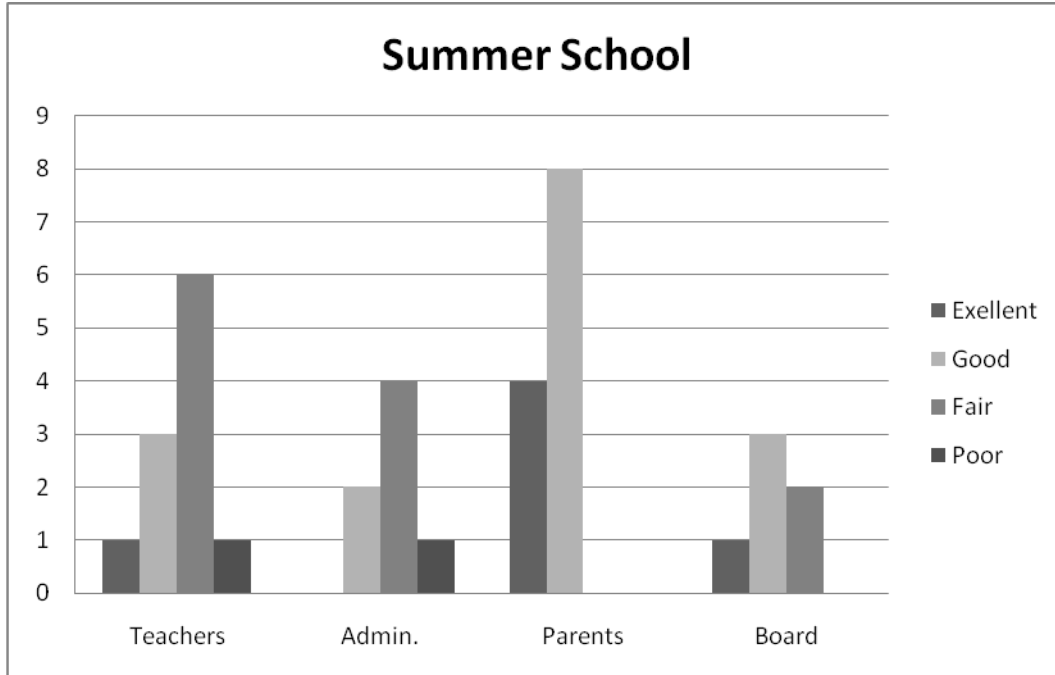


Figure 2. Perceptions of overall effectiveness of summer school.

Because the current research was a case study of one small school, it is not appropriate to draw sweeping conclusions based on the limited data available. As discussed before, many times traditional tests commonly used for analyzing data were inconclusive due to lack of sufficient data from the current study. Therefore, it became necessary to take a qualitative approach to analyzing the data. The open-ended questions from the adult participant surveys helped the researcher gain insight into how the perceptions of teachers, administrators, parents, and board members may have impacted the effectiveness of Newton’s Academy and the summer school program.

During the coding process of the open-ended questions, several categories of concerns began to surface. All four adult roles recorded the most comments under the category of curriculum, and most of the comments on curriculum from teachers and administrators were negative. Concerns ranged from teachers commenting that there was

no real curriculum for Newton's Academy to writing that goals were unclear for individual students in both interventions. Administrators concurred with the teachers. Administrators felt that especially Newton's Academy lacked a prescriptive curriculum, that there needed to be targeted interventions, and that there was a need for identification and focus on the exact learning problems that each child had. The negative comments that school board members made echoed some of the same concerns of the administration. Board members were concerned that individual student skill deficiencies were not addressed either in Newton's Academy or in the summer school program. Parents, on the other hand, were generally very positive in their comments about the curriculum of both Newton's Academy and the summer school program. In general, parents felt that the curriculum of the interventions helped students understand difficult concepts, kept knowledge fresh in students' minds, and in the case of summer school gave the students a "jump start" on a new school year. One parent thought the curriculum needed to be more challenging, but almost all of the comments from parents on curriculum were positive. Slavin and Fashola (1998) concluded from their research that there were four conditions that led to the effectiveness of after-school and summer school programs. These researchers noted, "Effective programs have clear goals, emphasize methods and materials linked to those goals, and constantly assess students' progress toward the goals" (p. 64). The perception of teachers, administrators, and board members concerning the weaknesses of the curriculum of Newton's Academy and summer school might very well be the reason that the programs were less effective than they had hoped.

An inadequate curriculum did not surface in SQ23 and SQ24, perhaps because curriculum was not listed as one of the obstacles from which the adult participants could

choose. Participants did have the opportunity to insert an obstacle that was not listed in the choices by selecting “other” and writing a personal comment which one teacher and one board member chose to do.

A second area of concern expressed in written comments by teachers and administrators was that of professional development. Once again, most of the comments were negative. Administrators felt that there had been insufficient professional development for teachers particularly for those teachers who taught in Newton’s Academy. Teachers were in agreement, and several commented on the lack of professional development before Newton’s Academy was implemented. Few negative comments were made concerning professional development for the teachers in the summer school program, but there was a strong feeling on the part of both teachers and administrators that professional development for Newton’s Academy was inadequate.

Once again this obstacle to the effectiveness of the interventions was not noted in SQ23 and SQ24. It was not listed as one of the possible obstacles from which participants could choose; therefore, if participants wanted to choose professional development as an obstacle to Newton’s Academy or summer school, it was necessary for them to choose “other” and write in their choice. It was in the open-ended questions about ways to improve Newton’s Academy and summer school that particularly teachers and administrators commented that there was a need for better professional development. Another of Slavin’s and Fashola’s (1998) conditions for effective after-school and summer school programs addressed the subject of professional development. These researchers said, “Effective programs provide extensive professional development” (p. 66). Therefore, the perception of teachers and administrators that Newton’s Academy

lacked adequate professional development might well have impacted the success of this newly implemented program. On the other hand, it is interesting to note that quantitative analysis of data suggested that Newton's Academy was the one condition in the study that raised the mean scores of the ISAT reading test of the student participants.

A third category of concern developed primarily from comments from teachers and parents. Participants in both roles noted that the lack of communication was a detriment to the success of Newton's Academy and summer school. Parents were divided on their concerns about communication. About half of the comments from parents praised the communication they had with the teachers in both interventions and thought the teachers had communicated with them frequently and well. The other half felt that there was a lack of communication, but the comments were more about not knowing much about Newton's Academy than about lack of communication between teacher and parent or teacher and student. Comments about communication comprised almost 25% of the total comments made, ranking second only to comments about curriculum. Most of the teachers' comments about communication were concerned about the lack of communication between administrators and teachers concerning what was expected of teachers in Newton's Academy and summer school programs. Teachers also noted a lack of communication between the teachers in the two interventions and the regular classroom teachers. Classroom teachers felt that intervention teachers did not share with them concerning student goals, performance, or intervention curriculum. Perhaps it is important to note that Lyle (2007) suggested,

Whenever possible regular day classroom teachers should be involved in working with after-school teachers with planning and development. And

there should be links to the regular school program so that after-school teachers are more closely teaching the same standards that are taught during the regular school day” (p. 106).

It might also be noteworthy that administrators only commented about communication three times, and none of the comments were negative. There even appeared to be a lack of communication about communication.

This concern over communication seemed to be reflected in the answers given for SQ1-SQ18. As noted earlier many times the answer “I don’t know” ranked as one of the top three selections on the first 18 survey questions. It might have been that better communication among the four adult participant roles would allow for a better understanding of the issues addressed in SQ1-SQ18.

One specific area of concern that could be attributed to the lack of communication is that of the selection of students for the interventions. Teachers, in particular, made 18% of their comments about how students were selected to take part in Newton’s Academy and in summer school. They felt that classroom teachers should be involved in recommending students for participation in the interventions. One teacher noted he/she did not know how students were selected and made the comment that some students that were not selected could have benefitted. Another teacher suggested that test scores alone should not determine eligibility for participation in the interventions. On the other hand, administrators felt that it was a positive sign that students were identified with data rather than teacher recommendation. One administrator did note that there was an unclear selection process. It would appear that there is some confusion over the selection of

participants as well as a discrepancy between teachers and administrators as to the best way to determine which students should participate.

Another concern shared by all adult participants was student motivation.

Comments were mixed. Participants in all four roles noted that lack of student motivation in the after-school and summer school programs was a problem and may have kept the programs from being as successful as they might have been. One administrator said that student buy-in was one of the greatest challenges faced by Newton's Academy, and a board member concurred when he/she said that gaining acceptance from the students was the greatest challenge. Likewise, teachers and board members commented that student motivation was one of the greatest challenges faced by the summer school program. Even so, there were also positive comments about student motivation. Especially some parents noted that their students enjoyed the programs and had benefitted greatly from them. One teacher said that the students liked staying after school.

The open-ended questions revealed other issues such as student behavior, parental involvement, and transportation; but these concerns were not shared by large numbers of the participants who provided comments in SQ27-SQ33. See Table A2 in Appendix A for representative comments made by teachers, administrators, parents, and board members in the extended response section of the survey.

Implications and Recommendations

As previously noted, this study focused on one, small rural school in the Midwest. It would be inappropriate to imply that what was learned from this study applies to all schools or even to all small rural schools. Yet, the very reason the study took place confirms its importance for the students, parents, teachers, administrators, and board

members of at least one small school district. Few school districts have unlimited funds to use for educating the student population. Administrators are constantly seeking effective ways to increase student learning, and the only way to know if student learning is increasing is to execute an in-depth study of the practices and procedures that have been put into place.

Specifically, the administrators of the school, which was the subject of this case study, wanted to know if the two interventions that had been implemented raised the ISAT scores of the student participants. Simply put, the answer is “yes” there was a statistically significant difference in the mean scores of the ISAT reading test of those students who attended Newton’s Academy and those students who attended both Newton’s Academy and summer school. Those students who attended Newton’s Academy raised the mean of their ISAT reading scores 2.23 points, and those students who attended both Newton’s Academy and summer school raised the mean of their ISAT reading scores 2.60 points. These increases were statistically significant, but only the school leaders can determine if the increase was significant enough to warrant the financial support needed to continue these programs.

It would appear that based on this study, the school leaders were correct in implementing an after school program. The negative comments from the open-ended questions provided by adult participants indicate that perhaps attention should be given to curriculum development, teacher selection for the intervention, and professional development prior to continuing Newton’s Academy or before implementing a different after school program.

In addition to studying the impact of Newton's Academy and summer school on students' ISAT scores, this case study attempted to determine what other factors may have impacted the ISAT scores of the students. Overall, the only factor studied that might have had an impact was the grade level of the students during the study. Such factors as attendance, IEP, ELL, SES, or homeroom teacher made no statistically significant difference in the participants' ISAT scores. Further study is warranted to determine if the two interventions or other services provided the help to students with IEPs that kept their scores from being significantly different from those students without IEPs. It should also be taken into consideration that all student participants were at the lower end of the achievement scale when they were invited to take part in the interventions. Therefore, there may not be a great difference in the academic ability of the IEP and non-IEP students.

Another factor to consider is the lack of improvement in the ISAT scores of those students who only attended summer school. Even though these students gained less on the mean score of their ISAT tests than the students in the other conditions, it is impossible to discern from this study if they would have gained even less had they not attended summer school. It is also impossible to tell from this study if they would have performed better had they been in the after-school program.

Perhaps the most helpful information derived from this study came from the qualitative analysis of the impact that the perceptions of student participants, teachers, administrators, parents, and board members may have had on the effectiveness of the two interventions being studied. Whether the school leaders decide to continue with the current interventions or whether they decide to implement different interventions that

might increase student learning, there are some recommendations that might apply to their decisions:

- Before continuing the present interventions or implementing new ones, a concerted effort should be made to have a specific curriculum developed for the intervention.
- Before continuing the present interventions or implementing new ones, adequate professional development should be provided for those teaching the curriculum.
- Attention should be given to the selection of students for any intervention, and the selection process should be clearly shared with all stakeholders.
- Lines of communication should be examined and improved where necessary so that various stakeholders feel informed and knowledgeable about any interventions that are implemented.
- Communication between regular classroom teachers and teachers in the intervention programs needs to be improved so that all teachers can best meet the needs of the students in all learning environments.

Further study of small, rural schools and their efforts to improve student learning is implicated. One case study, such as the current one, does little to help guide school officials in determining how they can best improve student learning. One suggestion to increase the amount of data available would be to use data from several small schools with similar demographics and intervention programs. This would help alleviate some of the difficulties with insufficient data experienced in the current study.

Based on comments from the adult participants, there is a need to study the impact of student behavior on any intervention that may be implemented. The current study did not address the issue of student behavior, but this is an area of concern for future studies.

Further studies of teaching strategies and pedagogy are indicated by the literature review. The current study did not address the quality of teaching or the experience of the teachers who taught in the interventions. Based on comments from adult participants, the impact that teacher qualifications and expertise may have had on the interventions were worthy of further study.

In future case studies, it might be advantageous to incorporate personal interviews with parents of the participants. The format of the survey seemed daunting to some parents, and there may have been a better response if parents could have answered the questions orally in a comfortable setting rather than trying to answer the questions in writing. This became evident on surveys where parents were willing to mark the questions that gave choices from which to select but left the open-ended questions blank.

Another recommendation would be to include a qualitative element as well as a quantitative element in any future study. Especially in the current study, the qualitative data proved to be as revealing as the quantitative data. Especially in studies where the number of participants is likely to be low, the qualitative data become invaluable in answering the research questions.

Whether No Child Left Behind remains in effect or whether it is replaced by a new system of high standards and accountability, stakeholders in the educational system of our country will continue to seek ways to improve student learning. Careful and

constant study of interventions and programs intended to raise the level of student achievement is necessary in our global society where American students must be academically prepared for the world that faces them upon graduation.

REFERENCES

- Austin, G. R., Rogers, B. G., & Walbesser, H. H., Jr. (1972, Spring). The effectiveness of summer compensatory education: A review of the research. *Review of Educational Research*, 42(2), 171-181.
- Alexander, K., Entwisle, D., & Olson, L. (2007). Lasting consequences of the summer learning gap. *American Sociological Review*, 72, 167-180.
- Blanton, R., & Harmon, H. (2005, Winter). Building capacity for continuous improvement of math and science education in rural schools. *The Rural Educator*, 26, 6-11.
- Borman, G. (2001). Summers are for learning. *Principal*, 80(3), 27-29.
- Borman, G. D., Benson, J., & Overman, L. T. (2005). Families, schools, and summer learning. *The Elementary School Journal*, 106(2), 131-152.
- Borman, G. D., & Dowling, N. M. (2006, Spring). Longitudinal achievement effects of multiyear summer school: Evidence from the Teach Baltimore randomized field trial. *Educational Evaluation and Policy Analysis*, 28, 25-48.
- Christie, K. (2003). Making use of summer time. *Phi delta Kappan*, 84, 485-487.
- Cooper, H., Charlton, K., Valentine, J., & Muhlenbruck, L. (2000). *Making the most of summer school: A meta-analytic and narrative review*. Malden, MA: Blackwell.
- Cortiella, C. (2006). *NCLB and IDEA: What parents of students with disabilities need to know and do*. Minneapolis, MN: National Center on Educational Outcomes. (ERIC document Reproduction Service No. ED495910)

- Cowley, K., Meehan, M., Finch, N., & Blake, J. (2002). *Kentucky district and school coordinators' perceptions of their extended school services programs*. Paper presented at the annual meeting of the American Evaluation Association, Washington, D.C.
- Curtis, J., Doss, D., & Totusek, P. (1982). *Improving achievement for pupils of low socioeconomic strata: The gamble we must take*. New York: American Educational Research Association Annual Meeting. (ERIC Document Reproduction Service No. ED 218371)
- Daly, E. J., III, Persampieri, M., McCurdy, M., & Gortmaker, V. (2005). Generating reading interventions through experimental analysis of academic skills: Demonstration and empirical evaluation. *School Psychology Review*, 34, 395-414.
- Denton, D. (2002). *Summer school: Unfulfilled promise*. Atlanta, GA: Southern Regional Education Board.
- Entwisle, D. R., Alexander, K. L., & Olson, L. S. (2001, Fall). Keep the faucet flowing: Summer learning and home environment. *American Educator*, 25(3), 10-15, 47. Retrieved July 7, 2007 from http://www.aft.org/pubs-reports/american_educator/fall2001/faucet.html
- Executive Summary. (n.d.). Transforming the federal role in education so that no child is left behind. Retrieved April 9, 2008, from <http://www.whitehouse.gov/news/reports/no-child-left-behind.html>
- Farmer, T., Leung, M., Banks, J., Schaefer, V., Andrews, B., & Murray, R.A. (2000). Adequate yearly progress in small rural schools and rural low-income schools. *The Rural Educator*, 27(3), 1-7.

- Fashola, O. S. (1998). *Review of extended-day and after-school programs and their effectiveness* (Report No. 24). Baltimore, MD: Johns Hopkins University.
- Finn, C., Rotherham, A., & Hokanson, Jr., C. (2001). *Rethinking special education for a new century* (pp. 259-287). Thomas Fordham Foundation and the Progressive Policy Institute. Retrieved on December 30, 2008, from http://edexcellence.net/doc/special_ed_final.pdf
- Fuchs, D., & Fuchs, L. (2005). Responsiveness-to-intervention: A blueprint for practitioners, policymakers, and parents. *Teaching Exceptional Children*, 38, 57-61.
- Gay, L. R., Mills, G. E., & Airasian, P. (2006). *Educational research: Competencies for analysis and applications* (8th ed.). Upper Saddle River, NJ: Pearson Education, Inc.
- Heyns, B. (1986). Summer programs and compensatory education: The future of an idea. *Designs for Compensatory Education: Conference Proceedings and Papers*. (ERIC Document Reproduction Service No. ED293906)
- Heyns, B. (1987). Schooling and cognitive development: Is there a season for learning. *Child Development*, 58, 1151-1160.
- Hoepfner, R. (1980, October). How important is summer school? *Educational Leadership*, 80-82.
- Illinois State Board of Education (2008). *No Child Left Behind (NCLB) overview and highlights of NCLB*. Springfield: Author. Retrieved February 15, 2008, from <http://www.isbe.net/nclb/htmls/highlights.htm>

- Individuals with learning disabilities act* of 2004, Pub. L. No. 108–446 (2004). Retrieved December 30, 2008, from <http://ies.ed.gov/ncser/pdf/pl108-446.pdf>
- James-Burdumy, S., Dynarski, M., Moore, M., Deke, J., Mansfield, W., & Pistorino, C., et al. (2005). *When schools stay open late: The national evaluation of the 21st Century Community Learning Centers Program: Final report*. U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. Available at <http://www.ed.gov/ies/ncee>
- Jimerson, L. (2004). *The devil is in the details: Rural-sensitive best practices for accountability under No Child Left Behind*. Washington, D.C.: The Rural School and Community Trust.
- Kavale, A., & Spaulding, L. (2008). Is response to intervention good policy for specific learning disability? *Learning Disabilities Research & Practice*, 23, 169-179.
- Klibanoff, L. S., & Haggart, S. A. (1981). *Summer growth and the effectiveness of summer school*. Mountain View, CA: RMC Research Corporation. (ERIC Document Reproduction Service No. ED213789)
- Kociemba, G. D. (1995). *The impact of compensatory summer school on student achievement-grades 2 and 5 in the Minneapolis public schools*. (Doctoral dissertation, University of Minnesota, 1995). UMI 9529686.4
- Kovaleski, J. F., & Prasse, D. P. (2004). *Response to instruction in the identification of learning disabilities: A guide for school teams* [Brochure]. Bethesda, MD: National Association of School Psychologists.

- Lauer, P. A., Akiba, M., Wilkerson, S. B., Apthorp, H. S., Snow, D., & Martin-Glenn, M. L. (2006). Out-of-school-time programs: A meta-analysis of effects for at-risk students. *Review of Educational Research*, 76(2), 275-313.
- Leedy, P. D., & Ormand, J. E. (2005). *Practical research* (8th ed.). Upper Saddle River, NJ: Pearson Education, Inc.
- Lyle, R. L. (2007). *A study of the perceptions of elementary teachers, parents, and students regarding an after-school program in one Tennessee school*. (Doctoral dissertation, Capella University, 2007). UMI 3243585
- Lyon, G., Fletcher, J., Shaywitz, S., Shaywitz, B., Torgesen, J., Wood, F., Schulte, A., & Olson, R. (2001). Rethinking learning disabilities. In C. Finn, Jr., A. Rotherham, & C. Hokanson, Jr. (Eds.), *Rethinking special education for a new century* (pp. 259-287). Washington, D.C.: Thomas B. Fordham Foundation.
- Mixed models ANOVA. (n.d.). Retrieved August 7, 2009, from http://74.125.95.132/search?q=cache:Qp9ZTfYemR8J:www.utexas.edu/courses/schwab/sw388r7_spring_2007/SolvingProblemsInSPSS/Solving%2520Mixed%2520Models%2520ANOVA%2520Problems.doc+mixed+model+anova+spss&cd=5&hl=en&ct=clnk&gl=us
- National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform*. Retrieved December 16, 2008, from <http://www.ed.gov/pubs/NatAtRisk/recomm.html>
- National Joint Committee on Learning Disabilities. (2005). *Responsiveness to intervention and learning disabilities*. Retrieved on December 30, 2008, from <http://www.ldonline.org/?module=uploads&func=download&fileId=461>

- No Child Left Behind Act* of 2001, Pub. L. No. 107-110, 115 Stat. 1425. (2001). Retrieved April 28, 2008, from <http://www.ed.gov/policy/elsec/leg/esea02/index.html>
- Opalinski, G., Ellers, S., & Goodman, A. (2004, February). I know what you did last summer. *Principal Leadership*, 4, 32-37.
- Reschley, D. (2005, November/December). Learning disabilities identification: Primary intervention, secondary intervention, and then what? *Journal of Learning Disabilities*, 38, 510-515.
- Robelen, E. (2005, April 13). 40 years after ESEA, federal role in schools is broader than ever. *Education Week*, 24(31), 1-4.
- Robson, C. (2002). *Real world research* (2nd ed.). Malden, MA: Blackwell Publishing.
- Salkind, N. (2008). *Statistics for people who (think they) hate statistics* (3rd ed.). Thousand Oaks, CA: Sage Publications, Inc.
- Schacter, J., & Jo, B. (2005). Learning when school is not in session: A reading summer day-camp intervention to improve the achievement of exiting first-grade students who are economically disadvantaged. *Journal of Research in Reading*, 28, 158-169.
- Slavin, R., & Fashola, O. (1998). *Show me the Evidence: Proven and promising programs for America's schools*. Baltimore, MD: Center for Research on the Education of Students Placed at Risk. (ERIC Document Reproduction Service No. ED421488)
- Smith, E. (2005). Raising standards in American school: The case of No Child Left Behind. *Journal of Education*, 16, 159-167.

- Stone, S. I., Engel, M., Nagaoka, J., & Roderick, M. (2005, May). Getting it the second time around: Student classroom experience in Chicago's Summer Bridge Program. *Teachers College Record* 107, 935-957.
- Stuckart, D., & Glanz, J. (2007). What Dewey can still teach us. *Principal Leadership*, 8(4), 16-21.
- U.S. Census Bureau. (2009). *Population Finder*. Retrieved July 3, 2009 from <http://www.census.gov>
- U.S. Department of Education. (2008). *A nation accountable: Twenty-five years after A Nation at Risk* (ED Pubs). Jessup, MD: Author.
- U.S. Government Accountability Office. (2004). *No Child Left Behind Act: Additional assistance and research on effective strategies would help small rural districts* (GAO-04-909). Washington, D.C.: Author. (ERIC Document Reproduction Service No. ED483246)

APPENDIX A

Data Tables

Table A1

Means and Standard Deviations for Homeroom Teachers

Core Subject Teacher	ISAT Test				Marginal Mean
	Pretest		Post Test		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Teacher 1	21.29	8.86	21.86	9.63	21.58
Teacher 2	24.00	6.63	22.83	9.00	23.42
Teacher 3	31.00	6.90	29.57	10.50	30.29
Teacher 4	34.60	7.64	33.40	7.02	33.55
Teacher 5	25.89	8.27	23.78	7.74	24.84
Teacher 6	20.00	5.18	23.50	7.77	21.75
Teacher 7	27.00	7.81	30.80	8.41	28.90
Teacher 8	24.43	7.28	28.14	8.82	26.29
Teacher 9	20.43	9.91	23.29	9.46	21.86
Teacher 10	31.40	5.23	34.40	5.68	32.90
Teacher 11	30.50	8.38	34.00	4.60	32.25
Teacher 12	32.25	6.95	33.25	8.02	32.75
Teacher 13	25.86	6.36	30.00	8.02	27.93
Teacher 14	26.50	9.16	31.50	5.93	29.00
Marginal Mean	26.46		28.19		27.66

Table A2

Summary of Answers to Open Ended Survey Questions

Question	Representative Comments
What do you think were the major strengths of Newton's Academy?	<p>Comments from teachers:</p> <p>Extended time for kids to learn</p> <p>Focused teaching on specific skills</p> <p>Student group size was small</p> <p>Students liked staying after school</p> <p>None</p> <p>Students felt success in different areas</p> <p>Gained a better understanding in some areas</p> <p>Opportunity for additional help for students</p> <p>Comments from administrators:</p> <p>Students were selected utilizing a rubric that was data driven and those students that need the most help were selected</p> <p>We moved ahead on something. We have an idea about what works and what does not work now</p> <p>Extended learning time</p> <p>Student participation at the elementary level</p> <p>Don't know</p> <p>Focus on reading</p> <p>After school time slot</p> <p>Motivated instructional staff</p> <p>Low teacher/student ratio, 1:4</p> <p>Concentrated effort in specific content area</p> <p>Comments from parents:</p> <p>Don't know</p> <p>The extra help it gave my child to help her catch up</p> <p>Extra time on reading where structure was involved</p>

(table continues)

Table A2 (continued)

	<p>It was something that students very much benefited from</p> <p>My child enjoyed it</p> <p>The one-on-one time spent with teacher and student</p> <p>I'm not certain that it was a successful program</p> <p>Newton's Academy was a very positive environment for learning</p> <p>Good feedback to the students</p> <p>The teacher was wonderful</p> <p>Comments from school board members:</p> <p>The staff's commitment to the program</p> <p>Supplemental reading instruction</p> <p>The time devoted to the program</p> <p>The staff and administration were willing to take new ideas and run with them</p>
What do you think were the major strengths of the summer school program?	<p>Comments from teachers:</p> <p>Student group size was small</p> <p>Self esteem improvement</p> <p>Extended learning period</p> <p>Reinforcing skills that students were weak in</p> <p>Repetition of certain areas, extra practice in areas, understanding by students of difficult concepts they learned the previous year</p> <p>The continuous learning throughout the summer</p> <p>Gives students a jumped start to the following year</p> <p>Comments from administrators:</p> <p>Students who needed the most help were selected</p> <p>We offer a lot of classes and are willing to provide transportation</p> <p>Identifying students with data rather than teacher recommendation</p> <p>Location and transportation</p> <p>Safe environment during summer months</p> <p>Held in new facility</p>

(table continues)

Table A2 (continued)

Comments from parents:

Good coordination, good transportation, good curriculum
 For us it was math
 Not sure
 To sustain present level of performance
 The fact that [my son] was learning in the summer and it was just like school, so no messing around
 District support, financial support, teacher instruction
 More time for students to learn and understand a subject, ex. math. It really helped my kids last summer.
 Caring teachers who took the time to understand my daughter as an individual
 [My daughter] seemed to be more positive about reading.
 Small size
 Dividing the subjects in different sessions
 The teachers who showed students hands on with learning and made it fun

Comments from school board members:

Student exposure to learning material
 Scheduling later in the summer seems to help
 Well attended; students were helped

What do you think were the biggest challenges faced by Newton's Academy?

Comments from teachers:

Materials were not sufficient
 More direction on what the district wanted to see in the end

 Students were not identified on specific areas of academic concern. Individual goals were not made known to the classroom teacher. Students were not working on individual needs.

(table continues)

Table A2 (continued)

Not being prepared

Organization and communication

Lack of communication with the teaching staff. Everyone (teachers, parents, Newton's Academy teachers, and administration) needs to be informed and involved in selection and the progress of each student.

No set curriculum--some supplies were insufficient, goals unclear for individual students

The biggest challenges were the amount of students in the room at one time, and the lack of motivation at times.

I am not for sure how students were selected. I thought some students could have benefitted that did not get selected.

Transportation/Teacher/Money

Comments from administrators:

Lack of a prescriptive curriculum

Staff needed additional professional development

It would have been great to have staff from each grade level teach instead of using subs and staff from other grade levels.

Student buy-in

Total lack of instructional materials

Financial--should have been longer and over a span of years, just not "one and done"

Comments from parents:

Don't know

Not too sure--didn't seem to be any

I would think money and having it after school

[My son] had a lot of problems, but none from Newton's Academy. I think [my son] would benefit more now that we have taken care of them.

(table continues)

Table A2 (continued)

	<p>Lack of instruction/professional development for teachers</p> <p>Support from parents</p> <p>Comments from school board members:</p> <p>Gaining acceptance from the students</p> <p>You have to be aware of the skills the students are deficient in</p> <p>Getting staff to work the longer days, asking a lot from them</p> <p>Disappointment on helping the students do better in school subjects covered</p>
<p>What do you think were the biggest challenges faced by the summer school program?</p>	<p>Comments from teachers:</p> <p>Students <u>did not</u> get to summer school by strong teacher recommendation. Students were not working on individual needs. No feedback was given to classroom teacher. Parents were frustrated that some students couldn't get summer school help.</p> <p>Motivation</p> <p>No clear set of goals</p> <p>Parents</p> <p>Having a large base of teachers who have experience</p> <p>Some supplies were insufficient</p> <p>No set curriculum</p> <p>Transportation and money</p> <p>Comments from administrators:</p> <p>Student and parent buy-in</p> <p>Getting the students who would benefit the most to attend</p> <p>Attendance</p> <p>Don't know</p> <p>Unclear selection process</p> <p>Random use of instructional materials</p> <p>Unclear notion of student learning problems</p> <p>Faculty preparation</p> <p>Motivation</p>

(table continues)

Table A2 (continued)

	<p>Comments from parents:</p> <p>Some of the children have behavioral problems that interfere with the other students' class time</p> <p>Transportation for the kids to get there, due to parents and their work hours</p> <p>Don't know</p> <p>Due to a clerical error, many parent participant surveys did not include this question. It was not discovered until it was too late to correct the error.</p> <p>Comments from school board members:</p> <p>Motivating students</p> <p>You need to know the skills the students are deficient in</p> <p>Participation by those who could benefit the most</p> <p>Transportation until this last year</p> <p>Drop off in attendance by some students</p> <p>Student attitude</p>
What would you recommend to improve Newton's Academy?	<p>Comments from teachers:</p> <p>Materials that focus on specific skills which should coincide with the state framework</p> <p>Have a program in place</p> <p>Use teacher recommendation</p> <p>Place students first that are high functioning and can make gains</p> <p>Pair up "like" academic needs</p> <p>Give classroom teacher feedback on student progress</p> <p>Being more prepared/more training?</p> <p>Better organization and communication</p> <p>Having clear criteria</p> <p>Allowing those who can benefit the most in</p> <p>Give classroom teacher feedback on student progress</p> <p>Involve school staff by allowing them to have a voice in which students participate</p> <p>Give updates at staff meetings so that we are all aware of what is being taught; let staff know how students as a whole are progressing</p>

(table continues)

Table A2 (continued)

	<p>Smaller class sizes</p> <p>Have program earlier in the year</p> <p>It wasn't long enough</p> <p>Comments from administrators:</p> <p>Increase professional development</p> <p>Prescriptive curriculum</p> <p>Increase parental involvement</p> <p>Experienced staff or better training for staff providing instruction</p> <p>Improved planning</p> <p>Adopt a single curriculum for reading remediation and provide excellent professional development to all teachers.</p> <p>Sufficient financial support</p> <p>Comments from parents:</p> <p>Let people know what its purpose is</p> <p>More parent interactions</p> <p>More communication with the teacher and parent. Basically, I received little to no knowledge as to how things were progressing.</p> <p>Have program throughout the year</p> <p>Continue the program</p> <p>Comments from school board members:</p> <p>Formative assessment and then a determination of what you will do with the data</p> <p>Go back to the drawing board</p>
What would you recommend to improve the summer school program?	<p>Comments from teachers:</p> <p><u>Use</u> teacher recommendations</p> <p>Use interventions that allow higher level thinking</p> <p>Meet students' learning style needs</p> <p>Make known success of student in summer school to classroom teacher, include specific goals that students worked on</p> <p>Guidance</p> <p>Collaboration between classroom teachers and summer school teachers in addition to using test results</p>

(table continues)

Table A2 (continued)

Have a better defined curriculum with needed materials, especially in reading classes

Let the classroom teacher know the results of summer school and how the student did

Comments from administrators:

Increased professional development

Prescriptive curriculum

Increased professional development

Increased parental involvement

Allow students to recover lost credits

Increase the focus on teachers and framework

Targeted interventions

More intensive program with more similarity to actual school year program

Add behavior to the subjects being taught

Identify the exact learning problems that each child has and focus on those

Commitment from motivated faculty who want to teach struggling students, just not to be there for "easy money"

Comments from parents:

Nothing--very good

Start earlier in the summer

I have no recommendations--great program

I think classrooms with several high demand students could benefit from extra staffing

Have more areas of subjects other than just math and reading

Comments from school board members:

Formative assessment and then a determination of what you will do with the data

More classes

Better transportation which we have improved

(table continues)

Table A2 (continued)

A final question gave adult participants the opportunity to share any other information they wished to share about Newton's Academy or the summer school program.

Comments from teachers:

Newton's Academy was an overall successful program, but the goals were not clearly defined.

Teachers that are working with learning challenges need to have training in special needs (ex. Autism). The teachers need time and direction and to know the district's goal of the program. Co-teaching would be an advantage with either program.

For any program to be effective, there needs to be strong support, confidence, and the belief that change can be made.

It was difficult to answer many of these questions. I did not teach either program and received little feedback.

The concept of Newton's academy is a good one. However, classroom teachers need to be actively involved since we know our students. Test scores alone should not determine eligibility. There was little communication between the administrators with others who set up the academy, chose the students, and developed the items to be taught. No feedback about the details of the program was shared with the staff.

I think they [Newton's Academy and the summer school program] have a lot of positive qualities but just need a little tweaking or improvements.

I think they are both wonderful programs that need to be adjusted. I would like to see a program similar to Newton's be put back into our schools. The best way would be to co-teach these children that struggle in certain subjects, making sure a special ed and general ed teacher are present.

(table continues)

Table A2 (continued)

Comments from administrators:

The intentions were good, but after reflecting on the program and reviewing data, it had little impact on the main goal of increasing student achievement. [From Newton's Academy] I believe we learned some key things if we ever implemented another after school program.

Data did not support continuing Newton's Academy.

I believe that the negative outcomes of summer school are overlooked. I suspect that students actually do worse the following year (as a whole) when they participate in summer school. Social stigmas are attached to summer school, and it is seen as punishment for failure rather than as assistance to learning. Furthermore, there is almost no consideration of the individual learning problems and deficits of students. A student who is unable to decode using phonics might spend all summer listening to stories read aloud--to no benefit, when a short course in phonics could have remediated (and empowered/motivated) the student.

I believe we should form a cooperative with U of I, EIU, or ISU to have young, highly motivated student teachers take part as staff members. This might allow attendees to see new ideas and approaches to teaching and learning.

Comments from parents:

Very satisfied about summer school program. Don't know much about Newton's Academy.

[Newton's Academy] was a great resource. Thanks so very much.

[Newton's Academy] sounds like a good program, but more valuable with communication.

I would like to know more of what is going on, so if there [are] problems I can take care of them. [My son] will not suffer in school if they are addressed, but I think it will be so much better.

(table continues)

Table A2 (continued)

I would like to see [summer school] continue. Excellent program and I am hoping to get both of my kids in it again this summer. My kids never complained about going. It is good to keep everything fresh in their minds for next school year. They both have July birthdays and I probably should have waited a year to start them in pre-school and kindergarten but didn't---so each year we struggle in the beginning of the school year.

Newton's Academy needs to be promoted more. More info to the parents and the school population. The summer school classes are taught at a level too low for some of the students. Not quite challenging enough.

Maybe should be mandatory for students with low grades on ISAT scores and other very important tests. So we can instill that school is very important and without you don't get as far in life.

Comments from school board members:

There were no additional comments.

APPENDIX B

Student Questionnaire: Newton's Academy

Questionnaire

2007-2008 School Year

Students

Read each statement below. Then mark the answer that best tells how you feel about the statement.

1. Attending Newton's Academy helped me earn better grades in school:

It did not help.

☐

It helped a little.

☐

It helped quite a bit.

☐

It helped a lot.

☐

2. Attending Newton's Academy helped make homework easier.

It did not help.

☐

It helped a little.

☐

It helped quite a bit.

☐

It helped a lot.

☐

3. Attending Newton's Academy helped me do better on my ISAT test.

It did not help.

☐

It helped a little.

☐

It helped quite a bit.

☐

It helped a lot.

☐

4. Attending Newton's Academy helped me feel better about myself.

It did not help.

☐

It helped a little.

☐

It helped quite a bit.

☐

It helped a lot.

☐

5. Attending Newton's Academy helped me feel safer after school.

It did not help.

☐

It helped a little.

☐

It helped quite a bit.

☐

It helped a lot.

☐

APPENDIX C

Student Questionnaire: Summer School

Questionnaire

2007-2008 School Year

Students

Read each statement below. Then mark the answer that best tells how you feel about the statement.

1. Attending Summer School helped me earn better grades in school:

It did not help.

☐

It helped a little.

☐

It helped quite a bit.

☐

It helped a lot.

☐

2. Attending Summer School helped me do better on my ISAT test.

It did not help.

☐

It helped a little.

☐

It helped quite a bit.

☐

It helped a lot.

☐

3. Attending Summer School helped me feel better about myself.

It did not help.

☐

It helped a little.

☐

It helped quite a bit.

☐

It helped a lot.

☐

3. Attending Summer School helped me feel safer.

It did not help.

☐

It helped a little.

☐

It helped quite a bit.

☐

It helped a lot.

☐

APPENDENDIX D

Student Questionnaire: Newton's Academy and Summer School

Questionnaire

2007-2008 School Year

Students

You attended both Newton's Academy and Summer School. I am trying to find out which one helped you the most. If Newton's Academy helped you the most, mark **Newton's Academy**. If Summer School helped you the most, mark **Summer School**. If Newton's Academy and Summer School helped you about the same, mark **Both**. If neither Newton's Academy nor Summer School helped you, mark **Neither**.

- | | | | | | |
|----|---|---|--|-------------------------------|----------------------------------|
| 1. | Did Newton's Academy or Summer School help you the most to earn better grades in school? | Newton's Academy
<input type="radio"/> | Summer School
<input type="radio"/> | Both
<input type="radio"/> | Neither
<input type="radio"/> |
| 2. | Did Newton's Academy or Summer School help you the most with your homework? | Newton's Academy
<input type="radio"/> | Summer School
<input type="radio"/> | Both
<input type="radio"/> | Neither
<input type="radio"/> |
| 3. | Did Newton's Academy or Summer School help you the most on your ISAT test? | Newton's Academy
<input type="radio"/> | Summer School
<input type="radio"/> | Both
<input type="radio"/> | Neither
<input type="radio"/> |
| 4. | Did Newton's Academy or Summer School help you the most to feel safe at school? | Newton's Academy
<input type="radio"/> | Summer School
<input type="radio"/> | Both
<input type="radio"/> | Neither
<input type="radio"/> |
| 5. | Did Newton's Academy or Summer School help you the most to feel better about how well you can do in school? | Newton's Academy
<input type="radio"/> | Summer School
<input type="radio"/> | Both
<input type="radio"/> | Neither
<input type="radio"/> |

APPENDIX E

Adult Participant Questionnaire

Newton's Academy and Summer School Questionnaire

The purpose of the following survey is to collect data to be used in a doctoral dissertation. The time period covered by the data collection begins with the Stanford 10 test administered during October 2007 and ends with the ISAT test given in March 2009. Included in this time frame are the Newton's Academy program during 2008 and the summer school program during 2008.

Please select the **best** description of your role during the 2007-2008 and 2008-2009 school years.

Role:

- ☐ Teacher: regular classroom teacher; summer school teacher; Newton's Academy teacher
- ☐ Administrator: superintendent; principal/ assist. principal; summer school coordinator, Newton's Academy coordinator; curriculum director
- ☐ Parent/guardian
- ☐ Board Member
- ☐ Other role (specify)_____

Please respond to the following questions based on your understanding of the Newton's Academy and Summer School Program at Eastlawn School.

1. Below are listed possible reasons that students might have attended **Newton's Academy** during the 2007-2008 school year. Based on your understanding, place a 1 in front of the most common reason that students attended. Place a 2 in front of the second most common reason, and place a 3 in front of the third most common reason.

_____ To decrease possibility of failing
_____ To improve academic achievement
_____ To improve self-esteem
_____ To sustain present level of performance
_____ To extend learning time
_____ To raise standardized achievement test scores
_____ To raise ISAT scores
_____ To provide a safe afterschool environment
_____ To improve attendance
_____ Other: _____

2. Below are listed possible reasons that students might have attended **summer school** during the 2007-2008 school year. Based on your understanding, place a 1 in front of the most common reason that students attended. Place a 2 in front of the second most common reason, and place a 3 in front of the third most common reason.

_____ To decrease possibility of failing
_____ To improve academic achievement
_____ To improve self-esteem
_____ To sustain present level of performance
_____ To extend learning time
_____ To raise standardized achievement test scores
_____ To raise ISAT scores
_____ To provide a safe afterschool environment
_____ To improve attendance
_____ Other: _____

3. Below are listed possible ways that students might have been selected to attend **Newton's Academy** during the 2007-2008 school year. Based on your understanding, place a 1 in front of the most common way that students were selected. Place a 2 in front of the second most common way, and place a 3 in front of the third most common way.

_____ Teacher recommendation
_____ Parent request
_____ Student request
_____ Standardized test scores
_____ ISAT scores
_____ I don't know
_____ Other: _____

4. Below are listed possible ways that students might have been selected to attend **summer school** during the 2007-2008 school year. Based on your understanding, place a 1 in front of the most common way that students were selected. Place a 2 in front of the second most common way, and place a 3 in front of the third most common way.

_____ Teacher recommendation
_____ Parent request
_____ Student request
_____ Standardized test scores
_____ ISAT scores
_____ I don't know
_____ Other: _____

5. What subjects were taught in **Newton's Academy**? (Select all that apply)

☐ Reading
☐ Science
☐ Math
☐ English
☐ Social Studies
☐ I don't know
☐ Other: _____

6. What subjects were taught in **summer school**? (Select all that apply)

☐ Reading
☐ Science
☐ Math
☐ English
☐ Social Studies
☐ I don't know
☐ Other: _____

7. How often did teachers in the **Newton's Academy** consult with regular classroom teachers on instruction and/or goals? (choose one)

☐ Regular classroom teachers teach their own students in Newton's Academy.
☐ Regularly throughout school year
☐ As needed throughout school year
☐ Only prior to the start of school
☐ Not at all
☐ I don't know

8. How often did teachers in the **summer school** program consult with regular classroom teachers on instruction and/or goals? (choose one)
- ☐ Regular classroom teachers teach their own students in the summer school program.
 - ☐ Regularly throughout school year
 - ☐ As needed throughout school year
 - ☐ Only prior to the start of school
 - ☐ Not at all
 - ☐ I don't know
9. How often did teachers in the **Newton's Academy** consult with regular classroom teachers on student performance? (choose one)
- ☐ Regular classroom teachers teach their own students in Newton's Academy.
 - ☐ Regularly throughout school year
 - ☐ As needed throughout school year
 - ☐ Only prior to the start of school
 - ☐ Not at all
 - ☐ I don't know
10. How often did teachers in the **summer school** program consult with regular classroom teachers on student performance? (choose one)
- ☐ Regular classroom teachers teach their own students in the summer school program.
 - ☐ Regularly throughout school year
 - ☐ As needed throughout school year
 - ☐ Only prior to the start of school
 - ☐ Not at all
 - ☐ I don't know
11. How often did teachers in the **Newton's Academy** consult with parents on student goals? (choose one)
- 12.
- ☐ Regularly throughout school year
 - ☐ As needed throughout school year
 - ☐ Only prior to the start of school
 - ☐ Not at all
 - ☐ I don't know

13. How often did teachers in the summer school program consult with parents on student goals? (choose one)
- ☐ Regularly throughout the summer school program
 - ☐ As needed throughout the summer school program
 - ☐ Only prior to the start of the summer school program
 - ☐ Not at all
 - ☐ I don't know
14. How often did teachers in the Newton's Academy consult with parents about student performance? (choose one)
- ☐ Regularly throughout school year
 - ☐ As needed throughout school year
 - ☐ Only prior to the start of school
 - ☐ Not at all
 - ☐ I don't know
15. How often did teachers in the summer school program consult with parents about student performance? (choose one)
- ☐ Regularly throughout the summer school program
 - ☐ As needed throughout the summer school program
 - ☐ Only at the end of the summer school program
 - ☐ Not at all
 - ☐ I don't know
16. How often did teachers in the Newton's Academy consult with the student on student goals? (choose one)
- ☐ Regularly throughout school year
 - ☐ As needed throughout school year
 - ☐ Only prior to the start of school
 - ☐ Not at all
 - ☐ I don't know
17. How often did teachers in the summer school program consult with the student on student goals? (choose one)
- ☐ Regularly throughout the summer school program
 - ☐ As needed throughout the summer school program
 - ☐ Only at the end of the summer school program
 - ☐ Not at all
 - ☐ I don't know

18. How often did teachers in **Newton's Academy** consult with the student on student performance? (choose one)
- ☐ Regularly throughout school year
 - ☐ As needed throughout school year
 - ☐ Only prior to the start of school
 - ☐ Not at all
 - ☐ I don't know
19. How often did teachers in the **summer school** program consult with the student on student performance? (choose one)
- ☐ Regularly throughout the summer school program
 - ☐ As needed throughout the summer school program
 - ☐ Only at the end of the summer school program
 - ☐ Not at all
 - ☐ I don't know
20. There may have been several important positive outcomes for the students in **Newton's Academy** during the 2007-2008 school year. Based on your understanding of the outcomes of Newton's Academy, place a 1 in front of the most important outcome. Place a 2 in front of the second most important outcome, and place a 3 in front of the third most important outcome.
- _____ Enhanced academic achievement
 - _____ Increased self-esteem
 - _____ Improved attendance
 - _____ Increased motivation
 - _____ Increased scores on standardized achievement tests
 - _____ Increased scores on ISAT
 - _____ A safe after school environment
 - _____ Promotion to the next grade
 - _____ There were no positive outcomes
 - _____ I don't know
 - _____ Other: _____

21. There may have been several important positive outcomes for the students in **summer school** during the 2007-2008 school year. Based on your understanding of the outcomes of summer school, place a 1 in front of the most important outcome. Place a 2 in front of the second most important outcome, and place a 3 in front of the third most important outcome.
- ☐ Enhanced academic achievement
 - ☐ Increased self-esteem
 - ☐ Improved attendance
 - ☐ Increased motivation
 - ☐ Increased scores on standardized achievement tests
 - ☐ Increased scores on ISAT
 - ☐ A safe after school environment
 - ☐ Promotion to the next grade
 - ☐ There were no positive outcomes
 - ☐ I don't know
 - ☐ Other: _____
22. There may have been several factors that contributed to the success of **Newton's Academy** during the 2007-2008 school year. Based on your understanding, place a 1 in front of the most important factor. Place a 2 in front of the second most important factor, and place a 3 in front on the third most important factor.
- ☐ Clear support from the district
 - ☐ Clear support from parents
 - ☐ Clear support from community
 - ☐ Additional financial support
 - ☐ Excellent staff development and follow-up
 - ☐ Excellent relationships among staff
 - ☐ Outstanding administration (Principal/coordinator)
 - ☐ I don't know
 - ☐ Other: _____
23. There may have been several factors that contributed to the success of **summer school** during the 2007-2008 school year. Based on your understanding, place a 1 in front of the most important factor. Place a 2 in front of the second most important factor, and place a 3 in front on the third most important factor.
- ☐ Clear support from the district
 - ☐ Clear support from parents
 - ☐ Clear support from community
 - ☐ Additional financial support
 - ☐ Excellent staff development and follow-up
 - ☐ Excellent relationships among staff
 - ☐ Outstanding administration (Principal/coordinator)
 - ☐ I don't know
 - ☐ Other: _____

24. There may have been several obstacles to the success of **Newton's Academy** during the 2007-2008 school year. Based on your understanding, place a 1 in front of the most important factor. Place a 2 in front of the second most important factor, and place a 3 in front on the third most important factor.

- ☐ Opposition or demands from key district, school, or other staff
- ☐ Opposition or demands from parents
- ☐ Opposition or demands from community
- ☐ Inadequate financial support
- ☐ Inadequate preparation of teachers or other school staff
- ☐ Insufficient teachers or other school staff
- ☐ Student transportation
- ☐ Opposition or demands from students
- ☐ I don't know
- ☐ Other: _____

25. There may have been several obstacles to the success of **summer school** during the 2007-2008 school year. Based on your understanding, place a 1 in front of the most important factor. Place a 2 in front of the second most important factor, and place a 3 in front on the third most important factor.

- ☐ Opposition or demands from key district, school, or other staff
- ☐ Opposition or demands from parents
- ☐ Opposition or demands from community
- ☐ Inadequate financial support
- ☐ Inadequate preparation of teachers or other school staff
- ☐ Insufficient teachers or other school staff
- ☐ Student transportation
- ☐ Opposition or demands from students
- ☐ I don't know
- ☐ Other: _____

26. Overall, how would you rate the effectiveness of **Newton's Academy**? (choose one)

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor

27. Overall, how would you rate the effectiveness of the **summer school** program? (choose one)

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor

Open ended questions:

28. What do you think were the major strengths of Newton's Academy?
29. What do you think were the major strengths of the summer school program?
30. What do you think were the biggest challenges faced by Newton's Academy?
31. What do you think were the biggest challenges faced by the summer school program?
32. What would you recommend to improve Newton's Academy?
33. What would you recommend to improve the summer school program?
34. What else should we know about Newton's Academy and/or the summer school program?

Thank –you for your participation in this survey. Your participation has provided valuable data that will help the PBL District in future decisions about how to best improve education for its students.

APPENDIX F

Consent Forms

Consent Form for Student Participants

My name is Vicki Good. I am doing research on a project entitled "A Study of the Impact of Two Interventions on ISAT Scores of Students in a Small, Rural School District in the Midwest." This project is being completed in partial fulfillment of the requirements for the Degree of Doctor of Education in Ethical Leadership. The degree is to be conferred by Olivet Nazarene University upon completion of all requirements for the degree.

I am directing the project and can be contacted by mail at 496 Rulison Drive, Loda, IL 60948 or by telephone at 217-386-2919 should you have any questions.

Thank you for agreeing to take part in the project. Before we start, I would like to emphasize that:

- Your participation is entirely voluntary;
- You are free to refuse to answer any question;
- You are free to withdraw from the project at any time.

You will be asked to complete a questionnaire(s) about your participation in Newton's Academy and/or summer school. The answers to the questionnaire(s) will be kept strictly confidential and will be available only to members of the research team. Excerpts from the questionnaire(s) may be made part of the final research report, but under no circumstances will your name or any identifying characteristics be included in the report.

Please sign this form to show that I have read the contents to you.

_____ (signed)

_____ (printed)

_____ (date)

Please send a report on the results of the project:

YES NO (circle one)

Address for those requesting a research report

(Researcher to keep signed copy and leave unsigned copy with respondent.)

Consent Form for Parent/Guardian of Student Participants

Your child has been invited to participate in a study of the impact that two interventions have had on the ISAT scores of students attending Eastlawn School in Paxton, IL. The purpose of the study is to determine if participation in summer school and/or Newton's Academy has raised the ISAT scores of participants. Your child was selected to participate in this study because he/she attended summer school during the summer of 2007, participated in Newton's Academy during the 2007-2008 school year, participated in both summer school and Newton's Academy, or met all of the criteria to participate in one or both of these programs but did not participate.

If you agree that your child may participate in the study, he or she will be asked to complete a survey. The survey asks questions about how your child felt about his or her participation in the two interventions. Completion of the survey will take no longer than 15 minutes.

Any information that is obtained in connection with this study and that can be identified with your child will remain confidential and will be available only to the research team. Excerpts from the questionnaire may be made part of the final research report, but under no circumstances will your child's name or any identifying characteristics be included in the report.

Your decision whether or not to participate will not prejudice your future relation with the Paxton-Buckley-Loda School District. If you decide to allow your child to participate, you are free to discontinue your child's participation at any time without prejudice.

If you have any questions, please do not hesitate to contact me. If you have any additional questions later, please contact Vicki Good at 217-386-2919, and I will be happy to answer them.

You will be offered a copy of this form to keep.

You are making a decision whether or not to allow your child to participate. Your signature indicates that you have read the information provided above and have decided to allow your child to participate. You may withdraw your child at any time without penalty or loss of benefits to which you may be entitled after signing this form should you choose to discontinue participation in this study.

Child's name (Please Print)

Signature of Parent/Legal Guardian

Date

Signature of Investigator

Date

Consent Form for Adult Participants

You are invited to participate in a study entitled “A Study of the Impact of Two Interventions on ISAT Scores of Students in a Small, Rural School District in the Midwest.” I hope to learn what impact Newton’s Academy and summer school may have had on the ISAT scores of student participants in grades 3 through 5 during the 2007-2008 school year. You were selected as a possible participant in this study because you are a parent or guardian of a student participant.

I am asking you to answer questions on a survey that should take no more than 15 minutes to complete. By participating in this research study, you will help Paxton-Buckley-Loda School District #10 determine the effectiveness of programs it has put in place to help raise ISAT scores. An analysis of the data that will be collected will be made available to Superintendent McClure and the Board of Education to use in whatever manner they deem appropriate.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. The results that are published publicly will not include the name of any individual because the study will only analyze relationships among groups of data.

Your decision whether or not to participate will not prejudice your future relation with Paxton-Buckley-Loda District #10. If you decide to participate, you are free to discontinue participation at any time without prejudice.

If you have any questions, please do not hesitate to contact me. If you have any additional questions later, please contact Vicki J. Good at 217-386-2919.

You will be offered a copy of this form to keep.

You are making a decision whether or not to participate. Your signature indicates that you have read the information provided above and have decided to participate. You may withdraw at any time without penalty or loss of benefits to which you may be entitled should you choose to discontinue participation in this study.

Signature

Date

Printed Name

Signature of Investigator

Date