A Statewide Impact Study of 21st Century Community Learning Center Programs in Florida

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COLLEGE OF EDUCATION

A STATEWIDE IMPACT STUDY OF 21ST CENTURY COMMUNITY LEARNING CENTER PROGRAMS IN FLORIDA

By

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A Dissertation submitted to the Department of Educational Leadership and Policy Studies in partial fulfillment of the requirements for the degree of Doctor of Philosophy

Degree Awarded:
Summer Semester, 2007

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This dissertation is dedicated to:

My wife, who is my life, my love, and my best friend,
and to my beautiful daughters, Christina and Diana,
who are the greatest loves of my life.
ACKNOWLEDGEMENTS

I would like to express my sincere appreciation to my major professor, Dr. Judith Irvin and the members of my committee for their guidance and encouragement. I am also indebted to Dr. Irvin for her patience and guidance. Special thanks and appreciation go to my committee members, including Dr. Milton, for his valuable suggestions and assistance; Dr. Beckham for his support and understanding; and Dr. Gutierrez for providing unique perspectives and valuable recommendations while serving as the outside member on my advisory committee.

I am grateful to Dr. James Zhang and his exceptional 21st Century Community Learning Center Leadership Team at the University of Florida with whom I have had the privilege to work since 2004. I especially thank Joe Davis and Lani Lingo at the Florida Department of Education for their leadership and support. I am grateful to Dr. Charles Byrd at the University of Florida for unselfishly providing his valuable guidance and giving his free time to assist with data collection and analysis.
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ABSTRACT

This study examined the impacts of the after school programs on the academic, motivational, behavior/social development of the students who attended the 21st Century Community Learning Center (21st CCLC) programs.

The following overarching research questions guided this study: (a) What are the academic impacts of after school programs on participating students, as measured by mathematics grades, reading grades, and grade point averages measured at four points during the academic year; (b) What are the motivational impacts of after school programs on participating students, as measured by number of school absences, number of school tardies, and teacher ratings of student dedication towards completing assigned work measured at four points during the academic year; and (c) What are the behavioral and social impacts of after school programs on participating students, as measured by number of disciplinary referrals, number of suspensions from school, and teacher ratings of student activities to get along with others measured at four points during the academic year? Since this study sought to understand the impact of the after school program on the academic, motivation, and behavioral/social development of students who attended the 21st CCLC programs in Florida, an intervention group (i.e., students attended at least 30 days of programming) and control group (i.e., students attended fewer than the requisite 30 days of programming) were compared.

Results in academic gains indicated that there was no significant difference in estimated marginal means of math grades between the control and intervention groups at the initial performance period. However, control group students were significantly lower than intervention group students at the remaining performance periods. Although all students had decreases in mathematics grades across time, students who attended the 21st CCLC programs for more than 30 days had significantly lower levels of decline than did students who did not attend the programs for at least 30 days. There was no significant difference in estimated marginal means of reading grades between the control and
intervention groups at the initial performance period. However, as with mathematics, control group students were significantly lower than intervention group students at the remaining performance periods. Although all students demonstrated decreases in reading grades over the course of the academic year, students who attended the 21st CCLC programs for more than 30 days had significantly lower levels of decline than did students who did not attend the programs for at least 30 days. There was so significant difference in estimated marginal means of grade point averages between the control and intervention groups at the initial performance period. However, as with mathematics and reading grades, control group students were significantly lower than intervention group students at the remaining performance periods. Although all students demonstrated an overall reduction in overall GPA over the course of the academic year, students in the control group initially had increases in GPA during the second performance period, but then demonstrated significant declines in the third and fourth performance periods, during which time students who attended the 21st CCLC programs for more than 30 days had significantly higher GPAs than did students who did not attend the programs for at least 30 days.

Results in dedication and motivation indicated that there were significant differences between estimated marginal means of in-school absences between the control and intervention groups at all four performance periods, with students in the intervention group having fewer absences across the year. Students who attended the 21st CCLC programs for more than 30 days had significantly lower levels of absences across the year, with the final performance period having the greatest difference between the two groups of students. There was no significant difference in estimated marginal means of number of regular-school tardies between the control and intervention groups at the initial or second performance periods. However, control group students had significantly fewer tardies than did intervention group students during period 3, while intervention group students had significantly fewer tardies during the final performance period of the academic year. Although both control group and intervention group students demonstrated similar trends in the number of tardies, students who attended the 21st CCLC programs for more than 30 days eventually had significantly lower level of tardiness than did students who did not attend the programs for at least 30 days. There
were no significant differences in estimated marginal means of teacher ratings of academic work completion between the control and intervention groups at the initial performance period. However, intervention group students received significantly higher ratings than control group students at the remaining performance periods. Although all students demonstrated an overall improvement in teacher ratings of academic work completion, students who attended the 21st CCLC programs for more than 30 days had significantly greater increases in teacher ratings of work completion than did students who did not attend the programs for at least 30 days.

Results in in-school behavior indicated that there were significant differences in estimated marginal means of periodic school suspensions between the control and intervention groups at all four performance periods. Ultimately, students who attended the 21st CCLC programs for more than 30 days had significantly lower rates of disciplinary referrals throughout the four performance periods than those students who did not attend the programs for at least 30 days. It should be noted that the discrepancy between student groups was greater in the fourth period than in the initial two performance periods. There were significant differences in estimated marginal means of teacher ratings of students’ ability to get along with others between the control and intervention groups at all four performance periods. Ultimately, although there were significant differences at each performance period, students who attended the 21st CCLC programs for more than 30 days maintained significantly higher ratings of ability to get along with others throughout the four performance periods than those students who did not attend the programs for at least 30 days.
CHAPTER 1
PURPOSE OF THE STUDY

Introduction

The 21st Century Community Learning Center program is a key component of President’s Bush’s No Child Left Behind Act. It presents an opportunity for students and their families to continue to learn new skills after the regular school day has ended. The focus of the program is to provide expanded academic enrichment opportunities for children attending schools with high concentration of low-income households and low-performing schools. Tutorial services and academic enrichment activities are designed to help students meet local and state academic standards in subjects such as reading and math. In addition, programs provide youth development opportunities, drug and violence prevention programs, technology education programs, art, music, and recreation programs, counseling, and character education to enhance the academic component of the program.

The 21st Century Community Learning Center programs are generally located in local public schools, but other eligible entities include community-based organizations, public or private entities, or consortia of two or more such agencies or organizations. In recent years, the idea of extending the school day has become popular throughout the United States. The potential of such an idea is clear. After school programs can provide additional time for learning the basic skills and enrichment activities tailored to the schools’ individual needs. In addition to the above advantages of after school programs, there are also concerns about what takes place during non-school hours especially when there is no direct supervision of children.

The reasons behind the surge of interest in after school programs have to do with a combination of many different factors. There has been an increase in the number of working mothers, double-parent families needing supervision of children, single-parent
families, violence in communities, low academic performance, and juvenile delinquency in general (Fashola, 2002). Today, more than 28 million school-age children have both parents who work outside the home. An estimated 5 to 7 million, and up to as many as 15 million “latch-key children” return to an empty home after school. When the school’s dismissal bell rings, the anxiety for parents often just begins. Parents worry about whether their children are safe and whether they are susceptible to drugs and crime (U.S. Department of Education, 2000).

Many children whose parents work outside the home do not have access to affordable, quality care during the hours before and after school (U.S. Department of Education, 2000). Additionally, students who spend no time in extracurricular activities are 49% more likely to have used drugs and 37% more likely to become teen parents than those who spend one to four hours per week in extracurricular activities (U.S. Department of Health and Human Services, 1995).

**Theoretical Rationale**

A key contribution to quality after school programs is likely to be a design that is supported by research informing educators and the public about which student experiences determine whether or not these students have interests in learning, improved behavioral patterns, improved social skills, and high aspirations. In this light, steps are needed to move the field away from the atheoretical stance and toward developing and advancing theoretical concepts that treat after school programs as consequences of a dynamic interaction among factors such as scholastic development, social behavior, caring environment, and personal inspiration. The theoretical framework for this study includes: (a) social capital, (b) achievement motivation, (c) social bonding, and (d) authentic education.

Coleman (1990) noted that the concept of “social capital” recognizes the importance of a network of sustained personal connections to convey expectations and conventional norms, and which can be acquired through rich and extensive interaction with adults. Weak social capital describes the failure of families to communicate shared expectations and norms, as well as sanctions for not meeting those norms. According to the theory, the development of social capital by children is significant because it
contributes to their readiness to internalize school norms and expectations. These expectations require personal effort to develop the knowledge and skills that make up human capital, without which children may drop out of school unprepared for responsible participation in mainstream society.

Achievement motivation includes the effects that perceived opportunity, future orientation, and incentives might have on students’ academic behavior, as well as on their transition from youth to adulthood. For example, if we want virtually all youth to complete 12 years or more of schooling, strong, credible social and economic incentives will be necessary to attract and keep youth who start life in socially and economically marginal circumstances. Disproportionate numbers of low-income children develop the view that they are at a disadvantage in school as well as in the marketplace and respond with antisocial behavior and an indifference to learning (Coleman, 1990).

The roles that membership, social bonding, interpersonal caring, and community play in convincing low-income children to overcome their sense of alienation and develop an emotional attachment to social institutions such as school will be studied. For example, engaging alienated students in the tasks of academic work requires that school and learning are viewed as legitimate, fair, and worthwhile (Coleman, 1990).

Authentic education requires clarity of purpose that unites students in the pursuit of common goals rather than distracting them with a “something for everyone” curriculum. Schoolwork involving the learning of skills and content with meaning and motivational appeal to the student is the goal. Students are intrinsically interested in the materials to be mastered so they study and learn of their own volition, develop a sense of ownership derived from personal choice rather than by the imposition of authority, and understand the relationship of schooling to their personal and working life (Coleman, 1990).

These dynamic theories, among others like them, represent at-risk students who are part of a social world and who interact with the people and institutions that surround them. As such, the theories offer a rationale for after school programs based on the motivating properties of student life, rather than the unexamined assumptions that accompany mere membership in the at-risk categories. Accordingly, theories such as these offer an opportunity to replace the “head counting” and descriptive statistics that have, to date, characterized research on after school programs with explanations of
behavior that offer a far more powerful and sophisticated rationale for future research and the design of after school programs.

**History and Context**

In 1994, the U.S. Congress authorized the 21st Century Community Learning Center Program to open up schools for broader use by their communities (U.S. Department of Education, 2003a). In 1998, the program was refocused on supporting schools to provide school-based academic and recreational activities after school and during other times when schools were not in regular session.

During the fiscal year 2002-2003, the 21st Century Community Learning Centers Program became the responsibility of the state government rather than the federal government. Along with that responsibility came the requirement that such programs place more emphasis on academic objectives and not be considered just as a safe haven or recreational environment for children. Many schools use their 21st Century Community Learning Center grant money as a means to bring up low test scores, increase achievement, provide enrichment activities, and help with homework. Because of the high number of children living in poverty, these centers are of special importance. The 21st Century Learning Centers may help fill the gap that many children are facing in their education.

**Statement of the Problem**

Consistent with the *No Child Left Behind Act*, many states in the country are conducting competitions to award 21st Century Community Learning Centers grants. During the 2003-2004 academic year, 43 local educational agencies, community-based organizations, other public and private entities, and/or a consortia of the above in Florida received a 21st Century Community Learning Center grant for a total of five years. During the 2004-05 academic year, 78 21st Century Community Learning Center programs (sub-grantees) in Florida, which included 43 continuing programs and 35 new programs, were being operated. To enhance program sustainability and reduce financial reliance on the 21st Century Community Learning Center funds, the Florida Department of Education (2005) adopted a policy to gradually reduce program funding by 20% in year three, four, and five. Because of this policy, the original 43 programs funded during
the 2003-2004 academic year had their funds reduced by 20% for the 2005-2006 project year.

Currently under a statewide budget of approximately $44 million, Florida’s 21st Century Community Learning Center programs are being implemented in counties and/or cities throughout the state where there is a high concentration of low-income households and low-performing schools. Program sites vary in operational budget from less than $200,000 to over $1.5 million. Each program is required by the Florida Department of Education (2005) to provide services that address the absolute and the competitive priorities.

The absolute priorities are: (a) to target services to students who attend schools that have been identified as in need of improvement, (b) to support the reading initiative, specifically Just Read! Florida, (c) to disseminate and market the 21st Century Community Learning Center program to the appropriate population, and (d) to operate the program jointly between one or more local education agencies and one or more community based organizations. The competitive priorities include the following: (a) to use a significant portion of the program funds to address substantial problems within D and F schools as identified by the Florida Department of Education (2004), (b) to provide nutrition, health, and fitness programs that will help decrease the national obesity epidemic, and (c) to form partnerships with institutions of higher education, libraries, and other private and/or public profit and non-profit entities with technological expertise to improve the use of technology.

These priorities should be programmed into at least four of the following activities (Florida Department of Education, 2005):

1. Remedial education and academic enrichment,
2. Mathematics and science education,
3. Arts and music education,
4. Entrepreneurial education,
5. Tutoring and mentoring,
6. English proficiency and language skills education,
7. Recreational activities,
8. Telecommunication and technology education,
9. Expanded library services,
10. Parental involvement and family literacy,
11. Education and assistance to students with behavioral problems,
12. Drug and violence education, counseling, and character building,
13. Serving students with disabilities (mandatory priority).

According to the Florida Department of Education (2005), in order for an organization in Florida to be granted the project, a potential program site has to demonstrate merits in its application in the following areas: (a) need for project, (b) quality of project design, (c) adequacy of resources, (d) quality of management plan and budget, and (e) quality of project evaluation. Each 21st Century Community Learning Center program site is required to submit an annual performance report that describes project activities, accomplishments, and outcomes for the purpose of demonstrating that substantial progress has been made toward meeting the objectives of the project and collecting data that address performance achievements.

**Purpose of the Study**

The purpose of this study is to examine the impacts of the after school programs on the academic, motivational, and behavioral/social development of the students who attend the 21st Century Community Learning Center programs. Florida conducts program evaluations each year to provide the data that help sub-grantees to improve their programs, but no statewide impact study has been conducted. With a large amount of money provided each year to sub-grantees, a research study is needed to determine the impacts of after school programs on the academic, motivational, and behavioral/social development of the students who attend the Florida’s 21st Century Community Learning Center programs.

**Research Questions**

The study aims to answer the following research questions:

1. What are the academic impacts of after school programs on participating students, as measured by mathematics grades, reading grades, and grade point averages measured at four points during the academic year?
2. What are the motivational impacts of after school programs on participating students, as measured by number of school absences, number of school tardies, and teacher ratings of student dedication towards completing assigned work measured at four points during the academic year?

3. What are the behavioral and social impacts of after school programs on participating students, as measured by number of disciplinary referrals, number of suspensions from school, and teacher ratings of student ability to get along with others measured at four points during the academic year?

**Research Hypotheses**

The following hypotheses are used to provide responses to the overarching research questions:

H1. Students within the intervention sample will exhibit significantly greater academic gains than students within the control sample, as demonstrated by school grades in mathematics courses, school grades in reading/English courses, and school grade point averages reported at defined intervals throughout the 2004-2005 academic year.

H2. Students within the intervention sample will exhibit significantly higher dedication and motivation to succeed in school than students within the control group, as demonstrated by number of regular-school absences, number of regular-school tardies, and teacher ratings of student dedication to complete academic work measured at defined intervals throughout the 2004-2005 academic year.

H3. Students within the intervention sample will demonstrate significantly lower levels of negative school behaviors than students within the control group, as indicated by number of disciplinary referrals, number of school suspensions, and teacher ratings of student ability to get along with others measured at defined intervals during the 2004-2005 academic year.

**Significance of the Study**

With the appropriation of more money from the U.S. Government earmarked for after school education, schools are taking on more responsibility than ever in ensuring that students are given a quality experience in after school programs. Findings from this
study could enable the 21st Century Community Learning Centers to access data that could help them to improve their program and to re-apply for this federal grant program because their current funding will soon run out. In addition, results from this study could provide information for curriculum and activity adjustment, reallocation of funding, improvement of facilities, staff development, decision-making, and accountability.

Definitions of Terms

For the purpose of this study, the following definitions may assist the reader and are defined as follows:

1. **21 Century Community Learning Centers** – A U.S. Department of Education program, administered through the states, providing grants to schools, community and faith-based organizations, and youth development agencies to provide high quality, expanded learning opportunities outside of regular school hours for children in a safe and sound educational environment (National Center for Community Education, 2003).

2. **At-risk students** - Students who have certain kinds of conditions such as living with one parent, being a member of a minority group, and having limited English language proficiency (Atelia, 1993; Matriello, McDill, & Pallas, 1990).

3. **Before- and after school programs** – The time before actual classes start as well as the time after dismissal of the regular school day.

4. **Latchkey children** – Latchkey children are defined as children who spend some amount of time before or after school without supervision of an adult or older adolescent (Holaday & Turner-Henson, 1994).

5. **Partnership** – The association of two or more persons in any business; fellowship (Webster’s Dictionary and Thesaurus, 1992).

6. **Site coordinator** – The person at the learning center site who is responsible for implementing and administering the program. This involves leading recruitment and enrollment efforts, planning and scheduling the youth activities, identifying activity providers, communicating with parents, and providing daily oversight of the program (Hixon & Tinzmann, 2004).
Limitations and Delimitations

This study is limited to individuals who have a connection to the 21st Century Community Learning Centers in Florida. The researcher will use archival data of those individuals who have participated in the after school program, and those who have a connection with the school-based after school program.

The delimitations of this study are that it can only be related to schools and areas with similar features and characteristics. The control group, which consists of non-persisters, may be a problem for comparisons.

Assumptions

Currently, I serve as director of 21st CCLC Policy, Compliance, and Program Development and co-investigator of the statewide 21st Century Community Learning Center Research Team. As director of this office, I provide leadership in areas related to policy, compliance, and technical assistance to members of the Policy and Compliance Unit and Technical Assistance and Training Unit, including school districts and organizations that administer the 21st CCLC programs. Specifically, I provide consultation to the Policy and Compliance Unit staff, the Florida Department of Education, and the 21st CCLC State Task Force to develop statewide policies and monitoring instruments to assist sub-recipients to self-evaluate program compliance. I also conduct the desktop monitoring for all programs in the state. As part of the desktop monitoring, I have opportunities to review program evaluation results of each program to determine whether the program is required to have on-site monitoring. Each year, I conduct on-site monitoring visits as selected by the Florida Department of Education. During on-site visits, I review the program and fiscal documentation, including documentation related to program evaluation. In addition to policy development and monitoring for compliance, I provide technical assistance to the Florida Department of Education, sub-recipients, and members of the Policy and Compliance and Technical Assistance and Training Units in areas of policy implementation, compliance issues, and program implementation. Because of my position with the program, there is a challenge to remain unbiased in the analysis of data, and results need to be understood with this limitation in mind.
Organization of the Study

This quantitative research study will be organized and presented in the following three-chapter outline: Chapter 1 includes an introduction, theoretical rationale, the history and context, statement of the problem, purpose of the study, research questions, research hypotheses, significance of the study, definitions of the terms, limitations and delimitations, and assumptions. Chapter 2 includes a review of literature pertaining to after school programs. The literature review addresses several major areas of focus: (a) historical evolution of child care, (b) at-risk children, (c) evolvement of the 21st Century Community Learning Centers Program, (d) the need for after school programs, (e) program designs, (f) first-year findings concerning 21st Century Community Learning Centers Program, (g) evaluation of Florida’s 21st Century Community Learning Center Program, and (h) the need for a statewide impact study. Chapter 3 includes focus of the study, validity and reliability of archival data, components of the research design, procedures, and ethics. Chapter 4 includes variables of interest, demographic and descriptive statistics, hypothesis testing, and general discussion of hypothesis testing. Chapter 5 provides synopsis of findings, implications, limitations, and future research.
CHAPTER 2

REVIEW OF LITERATURE

Historical Evolution of Child Care

The beginning of the daycare movement originated with the welfare and reform movements of the 19th Century. The concept of daycare grew out of a welfare movement to care for immigrant and working class children while their impoverished mothers worked. The daycare centers of today evolved from day nurseries that began in Boston in the 1940s. These early nurseries cared for children of working wives and widows of merchant seamen who were an economically deprived and disadvantaged group in society (Scarr & Weinberg, 1986). Daycare, according to Scarr and Weinberg, “was founded… as a social service to alleviate the child care problems of parents who had to work and to prevent young children from wandering the streets” (p. 1140).

Child care in the United States has, like other national enterprises, been a melting pot of ideas and interests. During the Great Depression, daycare was sponsored by the federal government. During World War II, the federal government sponsored daycare for 400,000 preschool children. This was not because the U.S. Congress perceived daycare to be beneficial for children, but because the mothers of these children were needed to work in industries producing war materials. Ironically, after the war, the federal government abdicated all support for daycare and instructed women to quit working, go home, and take care of their children. Many women, however, chose not to accept that advice. The ranks of working women have been steadily increasing since World War II (Scarr & Weinberg, 1986).

Despite the postwar emphasis on domesticity, maternal employment continued and even increased during the 1950s. Federal surveys reported that the lack of child care put many children at risk; however, the U.S. Congress, committed to restoring the male-headed household, took no action (Scarr & Weinberg, 1986). Attitudes began to change
in the early 1960s when the U.S. Congress decided to push welfare mothers into the work force by supporting targeted child care through block grants to states. Presidential opposition to child care persisted through the 1980s, but maternal employment continued to increase (Scarr & Weinberg, 1986).

Commercial, voluntary, cooperative, and family-based child care moved in to fill the vacuum. Expense, availability, and quality remained key issues. In 1990, a compromise measure called the Child Care and Development Block Grant was signed into law. Although this law mainly benefited low-income families, child care remained an issue in the debates over welfare reform in the mid-1990s (Michel, 1998).

The United States has yet to establish an underlying principle or to set principles to justify public support of child care. The nation has thus far not recognized the rich, multidimensional character of affordable, quality child care. Some of the most comprehensive child-care programs such as Head Start were supported by the federal government with virtually no public discussion about the care of children. Although some are heartened by the fact that the need for child care subsidies is much more widely appreciated today than it was 60 years ago, others are deeply disheartened that the gap between need and support seems to be growing ever wider (Cohen, 1996). It is evident that the lack of child care puts children in the at-risk category.

**Children at Risk**

The question of what it means for children to be “at-risk” is controversial. When children do not succeed in school, educators and others disagree about who or what is to blame. Many children live in vulnerable families and neighborhoods where the incidence of poverty, teen pregnancy, unemployment, substance abuse, and violence is widespread. Schools are increasingly recognizing that the educational performance of at-risk children will not improve unless efforts are made to remove the barriers to learning created by problems that begin outside the classroom walls (Atelia, 1993).

In the past century, families have changed drastically. Large households are becoming less common as are households headed by a married couple. In 70% of married-couple families with children ages 6 to 17, both parents work outside the home. The fastest growing family group is the single-parent household. In 79% of single-mother
families and 85% of single-father families, the custodial parent works outside the home (U.S. Bureau of Labor Statistics, 2000).

Although a typical workday ends around 5:30 p.m., schools generally dismiss students earlier in the afternoon. The gap between parents’ work schedules and school schedules can amount to 20 hours weekly (Reno & Riley, 2000; Seligson, 1991). Contemporary social issues, such as high divorce rates, increased single parent homes, and the rise in the number of families with two working parents, have resulted in situations in which adults are often not regularly available or attentive in the care of their child(ren) (Nash & Fraser, 1998; Sanacore, 2002). For many youngsters, the primary adult they speak to during the week is their teacher (Schargel & Smink, 2001).

There were an estimated 35 million children in the United States from ages 6 to 14 in the spring of 1999; of these, 22 million (63%) had an employed mother. For the majority of the children with employed mothers (80%), the primary child-care arrangement was the school (Smolensky & Grossman, 2001). Many of these children in turn became classified as at-risk in our schools.

How do children become at-risk? Historically, for schools, at-risk students are primarily those whose appearance, language, culture, values, communities, and families structures do not match those of the dominant White culture that schools are designed to serve and support. These students, primarily minorities, the poor, and immigrants, are considered culturally or educationally disadvantaged or deprived. According to Goodlad and Keating (1990), as it became obvious that a large numbers of these students were not achieving at minimally acceptable levels, “It seemed a natural and certainly easy way to define the problem as arising from deficiencies in the students themselves” (p.6).

Students who have certain kinds of conditions such as living with one parent, being a member of a minority group, and having limited English language proficiency are defined as at-risk because statistically students in these categories are likely to be in the lowest achievement groups or to drop out of school altogether (Matriello, McDill, & Pallas, 1990).

Why is there a need to focus on at-risk students? Each year, increasing numbers of students are entering schools from circumstances and with needs that schools are not prepared to accommodate. As Brown (1986) noted, this requires that increased
understanding and sensitivity to these new contexts for schooling become a more integral part of the national dialogue about educational reform. As noted by Ogden and Germinario (1998), “Society, therefore, can avoid more costly problems in the future by investing more heavily in the development of all its youth today” (p. xvii).

How can we reduce the resources gap? The only way to decrease the equity gap in academic performance is to greatly increase success in school and the achievement of disadvantaged and minority children. If we could place a high floor under the achievement of all children, regardless of social background, we could substantially reduce inequalities (Slavin, 1998). Reducing the equity gap has the potential to assist latchkey children to become successful in school.

**The Emergence of Latchkey Children**

What are latchkey children and when did the term become popular? Latchkey children are children who come home to an unsupervised routine when they leave school. The term latchkey was first used in the 1940s when children first started carrying keys to let themselves into their homes after school. The number of latchkey children in the United States has been growing steadily during the past few decades. Some of this growth is because of more single parent homes, more homes where both parents work, and cases where more responsibility has been turned over to the child (Wall Street Journal, 1999).

Nearly seven million children from 5 to 14 years old are regularly left unsupervised while their parents are at work or away for other reasons. Self-care is much more prevalent among middle school-aged children than among those in elementary school. Nine percent of children (2.4 million) from ages 5 to 11 and 41% of children (4.4 million) from ages 12 to 14 regularly care for themselves. Children caring for themselves spend an average of six hours per week doing so, according to the U.S. Department of Commerce News (2000). Children of grade-school age are more likely to care for themselves if they live with a single father (31%) than with a single mother (17%). Additionally, the chances of self-care increase with family income – from 11% of children in poverty to 22% of those with family incomes at least double the poverty line (U.S. Department of Commerce News, 2000).
The rate for both juvenile crimes and the victimization of juveniles peak in the afternoon hours. Unlike the serious violent crime pattern of adults, juvenile crimes occur most often in the hours immediately following a school’s dismissal. The peak that occurs at 3:00 p.m. is twice high as the percentage of violent crimes committed by juveniles just one hour earlier at 2:00 p.m. A comparison of the crime patterns for school and non-school days shows that the 3:00 p.m. peak occurs only on school days. Thus, juvenile violence peaks in the after school hours on regular school days. Children are also at a much greater risk of being the victim of a violent crime (murder, violent sex offense, robbery, and assault) in the four hours following the end of the school day, roughly between the hours of 2:00 p.m. to 6:00 p.m. (U.S. Department of Education and U.S. Department of Justice, 2000).

When compared to those children and teens who regularly participate in constructive after school activities, those who are unsupervised are much more likely to engage in substance abuse, criminal activities, and other high-risk behaviors. They are more likely to have behavioral problems, receive poor grades, and drop out of school (Reno & Riley, 2000). Children who are exposed to inadequate or nonexistent care are more susceptible to the influence of others than those who attend structured and supervised care (Baker & Witt, 1996). Apparently, providing well-organized enrichment programs to youth, especially during the after school hours from 3:00 p.m. to 6:00 p.m., is essential to transform the potentially destructive hours to nurturing time (Baker & Witt, 1996; Dorman, 1984).

In order to curtail the continuing trend of latchkey children, educators and policymakers have begun to show an increasing interest in programs designed for use in the non-school hours.

In recent years, much emphasis has been placed on after school programs for three reasons. First, attendance in after school programs can provide children with supervision during a time in which many might be exposed to and engaged in more antisocial and destructive behaviors. Second, after school programs can provide enriching experiences that broaden children’s perspectives and improve their socialization. Third, and a more recent emphasis, after school programs can help improve the academic achievement of students who are not achieving as well as they need to during regular school hours.
(Fashola, 2002). The potential of after school programs improving students’ academic, motivational, and behavioral/social skills led to the development of the 21st Century Community Learning Center program.

**Other At-Risk Factors**

Recent research studies found that there are other indicators associated with at-risk factors among young children. Peer influence generally increases over the years among young children. Moderated by connections with parents and other adults, peer influence can have either a positive or negative effect on social and academic behavior (Brown, Steinberg, Mounts, & Philipp, 1990; Peng & Wright, 1994; Quane & Rankin, 2001). Young people who cannot find success in a healthy, pro-social environment will be susceptible to experiences that lead to long-term failure (Blum, Beuhring & Rinehart, 2002; Maggs, Almeida & Galambos, 1995; Quaane & Rankin, 2001). Young people who grow up in poverty are more likely to suffer chronic health problems, be exposed to violence, receive a poor quality education, and live in a dangerous neighborhood (Children’s Defense Fund, 200; Lerner, 1993b).

As important as race, ethnicity, family structure, parent education, and socioeconomic status are in our society, these background characteristics serve merely as indicators of the factors that affect the process of growing up (Blum et al., 2000; Putnam, 2000; Quane & Rankin, 2001; Rankin & Quane, 2002; Resnick et al., 1997). Young people can also be at risk of poor developmental outcomes due to characteristics of their neighborhood, including joblessness, income and lack of social cohesion (Connell, Aber & Walker, 1995; Halpern-Felsher et al., 1997; Putnam, 2000; Sampson, 1997; Wilson, 1987).

**Involvement of the 21st Century Community Learning Center Program**

Early after school programs were primarily regional and local level operations attempting to function with federal subsidies. Much of the funding for after school efforts was a collection of miscellaneous sources. However, Farrow and Joe (1992) pointed out that regional and local funding could only function for the short term. After school programs needed to demonstrate effective financial strategies in order to seek plausible
expansion or continuation over time. This need for a broad and consistent source for after
school funding spawned the 21st Century Community Learning Centers program.

On January 8, 2002, President George W. Bush signed into law the *No Child Left
Behind Act of 2001*. This law redefined the federal role in K-12 education and intended to
help close the achievement gap among at-risk students. Establishment of this law was
based on the following five basic principles: (a) stronger accountability for results, (b)
increased flexibility and local control, (c) expanded options for parents, (d) putting
reading first, and (e) emphasis on effective teaching methods.

The development of the *No Child Left Behind Act of 2001* brought a political focus
and federal funding to the administrative issues associated with after school programs,
which signified the beginning of adopting federal funds to directly address youth needs
for after school programs in a systematic manner. Total federal funding began with
$750,000 in 1995 and grew to approximately $1 billion dollars in 2004 (United States
Department of Education, 2004). The funding design has continued to evolve over time.

Originally, the U.S. Department of Education accepted applications and allocated
funding from a federal level. However, this method was criticized for placing funding
decisions too far removed from the affected communities and creating too much
bureaucracy. In concert with the *No Child Left Behind Act*, and in an effort to keep the
program administration more “in touch” with the local communities, the 21st Century
Community Learning Center funding was restructured into block grants for State
Departments of Education to allocate as they saw fit (United States Department of
Education, 2002). Consequently, the *No Child Left Behind Act* converted the 21st Century
Community Learning Center authority from federal governance to a state formula grant.
This has helped to keep the program more closely tied to the funding agency and helped
the governing agency remain cognizant of local and regional issues.

The 21st Century Community Learning Center program’s design has specifically
focused on being a “jump start” initiative to develop self-sustainable, locally supported
programs. With this intention, the program funding is focused not on long-term support,
but rather on initial start up infusion. In an attempt to accomplish this, funding for any
one program is limited to five years. Although a program could renew funding from year
to year, the overall amount is reduced by 20% in increasing proportions for year three,
four, and five (Florida Department of Education, 2005). Therefore, while there exists a large overall pool of resources, the structure of the program forces local administrators to effectively seek and make use of alternative sources of support in order to keep their programs running. This increases the importance of sound fiscal planning and the allocation of resources to meet future organizational needs associated with decreasing federal funds.

**Research on Effective After School Programs**

Limited research studies have compared students participating in academically focused programs with those involved in enrichment programs, or students in school-based programs with those in community-based programs. There have also been studies that compare the effects of general programs with specific focus or activity-based programs. To date, however, qualitative studies that employ observational methods have provided the most fruitful information on the characteristics of effective programs. These studies (e.g., Appalachia Educational Laboratory, 1990; Scott, Witt & Foss, 1996) pointed to factors related to caring staff, activities that provide structure and challenge, choices, leadership opportunities for youth, and pro-social cooperative group activities.

The few quantitative studies that compare programs are also instructive. An evaluation of the New York City Beacons, an after school program, compared sites that had successfully implemented high quality youth development programming with those that had been less successful (Warren et al., 2002). In effective programs, youth were more likely to report feeling better about themselves and that staff had high expectations for their behavior and performance. They were less likely to report that they cut classes, stole money or belongings, or got into fights (Warren et al., 2002).

There is a wide consensus in the field, however, regarding the features of high quality programs. A number of organizations, including the National School-Age Alliance, the U.S. Department of Education, the Forum for Youth Investment, and the Center for Youth Development and Policy Research, have developed lists of the elements needed to create effective programs. Each organization’s results reflect its own particular interests and perspectives, but there is also a great deal of consistency (Beckett, Hawken & Jacknowitz, 2001; National Institute on Out-of-School Time & Forum for Youth
Recently, the National Research Council’s Committee on Community-Level Programs for Youth published the results of its work (Beckett et al., 2001), including a list of eight features of positive development settings:

1. Physical and Psychological Safety
2. Appropriate Structure
3. Supportive Relationships: explicit mentoring, or implicit program design for extensive on-to-one, or small group connections between young people and adults
4. Opportunities to Belong
5. Positive Social Norms
6. Support for Efficacy and Mattering: opportunities for autonomy, taking responsibility, and challenge
7. Opportunities for Skill Building
8. Integration of Family, School, and Community Efforts

In an attempt to define the most important characteristics of effective programs, researchers from the RAND Corporation employed meta-analysis, an advanced statistical technique (Beckett et al., 2001). Meta-analysis “adds together” the findings from a wide variety of studies to come up with findings about the effects of program characteristics. This study found strong support for positive outcomes linked to three program characteristics: variety of activities, flexibility of programming, and emotional climate. However, the lack of studies in the field limits the utility of these findings. Other characteristics may be just as important, but because they have not yet received as much attention from researchers, they did not show strength in the meta-analysis.

Only two studies, both conducted by Vandell and her colleagues, were assessed by Beckett and her colleagues as meeting high standards of scientific validity (Beckett et al., 2001). Vandell and her colleagues examined the relationship between the emotional climate in the after school program and children’s academic and social adjustment (Pierce et al., 1999; Rosenthal & Vandell, 1996). Results of this study indicated school adjustment was influenced by the quality of the after school environment. Negativity on the part of after school staff in their interactions with children was associated with poorer grades in reading and math for boys. Poorer grades were also linked to frequent negative
interactions with peers in the after school program. Positive interactions with staff and flexibility in program structure were related to better social skills and behavior, especially for boys (Pierce et al., 1999; Rosenthal & Vandell, 1996).

Effective after school practices are likely to be similar to effective in-school practices, especially for programs that focus on building academic performance. Two strategies highlighted in the education literature are particularly relevant to after school programs: cooperative learning and small group/class sizes. Cooperative learning has been widely documented as an effective strategy for supporting academic achievement among all levels of students (Hawkins & Weis, 1985; Thomas, 2000). Cooperative learning is associated with improvement not only in academic achievement, but also social skills (Slavin, 1995; Thomas, 2000). Based on the positive results of the effective after school program, there is a critical need for program expansion.

**Need for After School Programs**

In recent years, there has been a considerable increase in the number of after school programs (Vandell & Shumow, 1999). Federal, state, city, and community efforts, as well as numerous initiatives across the U.S., have been made for new and expanded after school enrichment programs in both public and private organizations (Halpern, 1999). These programs are located in various settings such as schools, community centers, parks and recreation facilities, youth organizations (e.g., Boys and Girls Clubs), religious institutions, museums, libraries, and YMCA/YWCA’s.

Programs often seek financial support from a broad range of funding sources, usually including federal, state, and local grants, business contributions, and community fundraising (Davis, 2001; Lipsitz, 1986). In 2004, the U.S. Congress appropriated $1 billion to establish after school programs (U.S. Department of Education, 2004). As a result, the number of after school programs has increased in all major urban areas. Approximately, 25-30% of U.S. youth now spend three to five afternoons a week in organized after school programs, and participation rates are growing each year (Halpern, 2003; Reno & Riley, 2000).

Across the nation as pressure mounts to improve test scores and boost students’ performance, educators are increasingly considering after school programs to help meet
these challenges. Once built around recreational activities and arts and crafts, after school programs are now being focused on tutoring, skill building in reading and math, and helping with homework (Lauer, 2003). Not only are after school programs needed for improvement of students’ performance, they are also needed to ensure that some children have a safe place to spend their after school time. Children whose families are not home when they return from school face many risks (Schwartz, 2003).

Unfortunately, there is a chronic shortage of after school programs available to serve children. Demand for school-based after school programs outstrips supply at a rate of about two to one. Seventy-four percent of elementary and middle school parents said they would be willing to pay for such a program; yet, only 31% of primary school parents and 39% of middle school parents reported that their children actually attended an after school program at school (U.S. Department of Education and U.S. Department of Justice, 2000).

Many benefits are associated with regular attendance in after school program settings. Quality after school, weekend, and summer programs for children and youth can cut crime dramatically by offering school-aged children a safe heaven from negative influences and providing constructive activities. They also teach core values like responsibility, hard work, and respect and concern for others. For example: A study of juvenile arrests in a public housing project that instituted an after school skills development program showed that the number of juveniles arrested declined by 75% by the end of the program (National Advisory Committee, 1998).

Youth advocates agree that constructive, organized activities are a good use of the adolescents’ time because such activities provide opportunities to (a) acquire and practice specific social, physical, and intellectual skills that may be useful in a wide variety of settings, including school; (b) contribute to the well-being of one’s community; (c) belong to a socially recognized and valued group; (d) establish supportive social networks of peers and adults who can help in the present and future; and (e) experience and deal with challenge (Eccles, Barber, Stone, & Hunt, 2003).

As stated earlier, there is strong support for after school programs from the public safety community. For example, nearly 9 in 10 police chiefs acknowledged that expanding after-school programs would “greatly reduce youth crime and violence”
Nine out of 10 chiefs also agreed with the statement, “If America does not make greater investments in after-school and educational child-care programs to help children and youth now, we will pay more later in crime, welfare, and other costs” (National Advisory Committee, p.3).

The creation of 21st Century Community Learning Centers and after school funding by foundations, legislation, school districts, and community-based organizations addressed not only a need for after school programs but also provided access to services for a large number of students who would otherwise not be able to afford them (Fashola, 2002). The 21st Century Community Learning Centers (2000) served populations in rural and inner-city locales; 55% of the 21st Century projects would be considered rural and 45% were in inner cities. Schools with 21st Century Community Learning Centers grants also served more minority students and were likely to serve more high-poverty students than average schools.

Research from 21st Century Community Learning Centers clearly showed that quality after school programs coordinated their activities with those offered during the regular school day. The 21 Century Community Learning Centers’ grantees conceded the importance of these day-to-day linkages. Among the linkages were: recruit and refer students, provide feedback on students, set goals and objectives, share instructional practices, and communicate school day curriculum to the center’s staff (21st Century Community Learning Centers, 2000).

**Program Designs**

Studies have revealed that good programs can raise math and reading performance, improve attendance, decrease students’ involvement in crime, and reduce dropout rates. Other research has linked such programs to improved behavior at school, increased interest in learning, better social skills, and higher aspirations for the future (Gewertz, 2000; Nask & Fraser, 1998). Conversation in the field has now turned to the critical challenge of how to create programs that yield those results.

To promote optimal development and function, after school environments should be safe, settings and activities should be developmentally appropriate and culturally
relevant, and the arrangements should be stable. According to Nash and Fraser (1998), programs should contain the following:

1. an individual approach,
2. the child’s involvement in the plan,
3. encouragement of academic performance,
4. fun opportunities for play, and
5. a collaborative approach (p.370).

The National Association of Elementary School Principals (1999) presented the following list of quality indicators necessary for program success:

1. The program must reflect a commitment to promote knowledge, skills, and understandings through enriching learning opportunities that complement the school day;
2. The program must seek and promote the involvement and support of the entire community when conducting program planning and implementation;
3. The program must support high quality after school programming for all children;
4. The program must ensure the safety and security of children;
5. The program is supported with adequate financial and material resources;
6. The after school program is supported by provision of professional development opportunities for staff;
7. The school supports safe transportation to and from after school programs;
8. School and after school staff demonstrate respect for the importance of both school and after school experience in children’s development;
9. The school supports families’ choices of after school arrangements by communicating with community based programs; and
10. The school accommodates families’ choices of community based after school programs through supportive transportation policy (pp.20-30).

Another major promoter of after school programs, The National School-Age Care Alliance (as cited in Education Week on the Web, 1996), provided these standards for after school programs:

1. Staff members treat children with respect;
2. Staff and families work together to make arrivals and departures between home and child care go smoothly;
3. The indoor space is regularly maintained;
4. Furniture is suitable for the sizes and physical abilities of the children;
5. Each child has the opportunity to play outdoors for at least 30 minutes for each three hours at the program;
6. The permanent playground equipment is suitable for the sizes, interests, and abilities of all children;
7. Children will spend most of their time involved in activities of their choice and there are materials and supplies for creative arts and dramatic play;
8. A system is in place to keep unauthorized people from taking children from the program;
9. Drinking water is readily available;
10. Staff-child ratios and group sizes vary according to the type and complexity of the activity, but group sizes do not exceed 30; and
11. The director provides continuous supervision and feedback to staff (n.p).

In addition, the U.S. Department of Education (2000) listed components of an exemplary after school programs as:

1. goal setting, strong management, and sustainability;
2. quality after school staffing;
3. attention to safety, health, and nutrition issues;
4. effective partnerships with community based organizations, juvenile justice agencies, law enforcement, and youth groups;
5. strong involvement of families;
6. enriching learning opportunities;
7. linkages between school day and after school personnel; and
8. evaluation of program progress and effectiveness (p.35).

Since the early 1990s, researchers have become more interested in after school programs for children. Federal, state, city, and community efforts and numerous initiatives across the U.S. have been made for new and expanded after school enrichment programs in both public and private setting; however, as after school enrichment
programs move toward greater recognition and become more institutionalized, they will be continuously challenged to reach more children, strengthen programs and staff, and provide adequate facilities and equipment. Program quality has been a public concern (Halpern, 1999).

Poor quality educational programs have been reported to put children’s development at risk for poorer language and cognitive scores, and lower ratings of social and emotional adjustment (Scarr & Eisenburg, 1993). Although hours of program operation, program stability, and the type of activities can all affect children’s achievement, program quality has the greatest influence by far (Caspary et al., 2002).

**First-Year Findings Concerning 21st CCLC Programs**

The 21st Century Community Learning Centers program began in 1998 under the Elementary and Secondary Education Act with $40 million awarded to 99 grantees in 34 states and supporting programs in about 360 schools. Reauthorized under the No Child Left Behind Act, the program received $1 billion in 2004 (21st Century Community Learning Centers, 2005). The 21st Century Community Learning Center programs were designed to provide opportunities for academic enrichment, including providing tutorial services to help students, particularly those who attend schools with high concentration of low-income households and low-performing schools, to meet state and local academic achievement standards in core academic subjects, mainly reading and mathematics.

The initial and follow-up program evaluations conducted by the Mathematica Policy Research and the Decision Information Resources, Inc. revealed that the 21st Century Community Learning Center program had a limited academic impact on student learning (U.S. Department of Education, 2003, 2005). Although the evaluation findings did not provide convincing information to support the accomplishments of the 21st Century Community Learning Center programs, the evaluation project was a good step towards recognizing the importance of conducting further program evaluations.

A recent study by Klein and Bolus (2003) indicated that students enrolled in the FOUNDATIONS, Inc. after school enrichment program noticeably improved their test scores in mathematics, reading, and language arts. In addition to direct academic effect, 21st Century Community Learning Center programs offer participants a broad array of
additional services, programs, and activities that are designed to reinforce and complement the regular academic program, such as youth development, drug and violence prevention, counseling, art, music, recreation and sport, technology education, and character education. Miller (2003) had similar research findings and indications.

Numerous after school programs sponsored by the 21st Century Community Learning Center also have documented positive results. For instance, Fletcher and Padover (2003) noted that in the California’s Before and After School and Safe Neighborhoods Partnerships Programs, students in the lowest quartile increased their reading and math scores by more than twice that of their peers not enrolled in after school programs. Attendance during the school day increased by an average of 17 days each year, and grade retention significantly declined, resulting in an estimated cost savings of $13 million. Smith et al. (1998, 1999, 2000, 2001) examined the After School Achievement Programs (ASAP) in Texas and had similarly positive findings.

Critical Review of Evaluation Research Findings

On February 3, 2003, the U.S. Department of Education released the first-year findings from the National 21st Century Community Learning Centers Program’s evaluation. Conducted by Mathematical Policy Research (21st Century Community Learning Centers, 2003), the national evaluation examined the characteristics and outcomes of typical 21st Century Community Learning Centers programs. Simultaneous with the report’s release, the President’s Fiscal Year 2004 Education Budget Summary and Background Information cited the “disappointing initial findings from a rigorous evaluation of the 21st Century Community Learning Centers Program” as a rationale to request a decrease of 40% in funding for the program (U.S. Department of Education, 2003b, n. p). According to the budget summary, the evaluation indicated that the centers funded in the program’s first three years were not providing substantial academic content and did not appear to have a positive impact on students’ behavior (U.S. Department of Education, 2003b, n. p.).

Several researchers disagreed with the findings and wrote articles to explain their reasoning. Vandell (2003), a researcher at the University of Wisconsin, found serious
methodological problems with the research. She determined that the elementary schools’
evaluation had four fundamental problems:

1. Baseline data were selectively omitted from the report. The math scores in the
treatment group increased during the evaluation year, whereas the math scores
in the control group decreased during the evaluation year. Unfortunately, the
study’s authors did not test these changes in test scores to determine if they
were statistically significant.

2. Data were collected at only half of the intended sites. Instead of examining
impacts in 14 school districts as originally planned, data were collected in only
7 school districts. This reduced sample size substantially limited the
investigators’ ability to detect program effects.

3. A substantial proportion (4 of 18 programs or 22%) of the programs in the
elementary schools’ evaluation had only an incidental focus on academic and
developmental experiences for children. These four programs were designed to
serve adults in the school’s community (another focus area within the 21st
Century Community Learning Centers Program’ charge). It is not clear why or
how these adult-focused programs would be expected to directly impact child
outcomes.

4. Sites for the elementary school evaluation were not representative of the larger
body of 21st Century Community Learning Centers Programs. Consequently, it
would not be possible to use performance data (either positive or negative
findings) as indicators of the success or failure of the 21st Century Community
Learning Centers Programs generally.

**Evaluation of Florida’s 21st Century Community Learning Center Program**

The University of Florida 21st Century Community Learning Center Program
Evaluation Unit receives a sub-grant from the Florida Department of Education to
conduct statewide program evaluation. The purpose of this evaluation is to examine the
quality and effectiveness of Florida’s 21st Century Community Learning Center
programs, while also highlighting the accomplishments of individual programs as per
their stated objectives. Quality is evaluated in terms of the five objective areas set forth
by the Florida Department of Education (i.e., need for project, adequacy of resources, quality of project design, quality of management plan and budget, and quality of project evaluation). Effectiveness is evaluated in terms of student outcomes and performance, teacher surveys, and program satisfaction surveys.

This evaluation primarily examines the specified 21st Century Community Learning Center program in terms of the program priorities and the general intent of the 21st Century Community Learning Center initiative throughout the United States of America. While the evaluation report follows a standardized format, efforts are made to report and interpret data specific to this program’s stated goals and objectives. The ultimate intent of this evaluation report is to provide information and direction to program managers, teachers, and other practitioners administering 21st Century Community Learning Center programs in the state of Florida. The report is designed to highlight specific achievements and identify areas for growth to further strengthen program performance. Florida currently does not conduct a statewide impact study on academic, motivational, and behavioral/social development of students attend the 21st Century Community Learning Center programs

**Need for a Statewide Impact Study**

Although there is no single formula for successful after school programs, quality programs usually combine academic, enrichment, recreational, and artistic elements in the curriculum to engage youth in a variety of structured and supervised activities. These activities can fulfill many needs of children, families, and communities, and provide safe and positive environments that nurture the cognitive, social, physical, and emotional development of youth (Reno & Riley, 2000). Consensus usually exists among program administrators that these curriculum components serve the following four key program objectives:

1. **Academic Development:** After school programs typically provide a variety of academic activities for young people during out-of-school hours, usually including homework assistance, academic remediation, career awareness, and learning of technology. After school programs also attempt to incorporate enrichment activities such as sport, fitness, recreation, music, and arts with
academic activities to make learning engaging and multi-purposeful. Quality enrichment activities can, and should, improve students’ engagement in learning (Miller, 2003). A number of studies revealed that tutoring, homework facilitation, remediation instruction, and academic enrichment activities in after school programs are effective in improving academic performance. Effective after school programs can help students improve grades and standardized test scores (Baker & Witt, 1996; Davis, 2001; Nash & Fraser, 1998; Sanacore, 2002; Sanderson, 2003; Schlatter, Schahrer, & Pogue, 2003).

2. **Social Behavior:** After school programs usually provide numerous activities to address behavioral issues, character building, and youth development. In order to benefit the youth and the community, quality programs can, and should, help program attendees improve pro-social behaviors, cope with behavioral problems, and obtain new social skills to meet the increased demands in school and society (Miller, 2003). Effective after school programs positively affect student attitudes and behaviors in school and their ability to achieve learning goals, as well as help children stay out of trouble and learn to settle arguments without fighting (Wallace-Reader’s Digest Funds, 2002). After school program attendees are also less likely to consume alcohol or skip school (Davis, 2001).

3. **Caring Environment:** Working parents and teachers see after school programs no longer as optional, but as an essential support component for children as they grow and develop (Wallace-Reader’s Digest Funds, 2002). Students are supervised in the afternoon hours and are provided a “safe haven” in an academically enriched and caring environment while improving their academic and social skills (Davis, 2001; Sanderson, 2003). After school programs reduce parental stress by providing children with safe and motivating environments and improve children’s behavior and rate of homework completion (Hamilton & Klein, 1998). Parents are less worried about their child’s safety after school, become more appreciative of their
child’s talents, and feel at ease to concentrate on their vocations (Wallace-Reader’s Digest Funds, 2002).

4. **Personal Inspiration**: Reineke (1998) posits that “the primary goals of schooling and hence the purposes of instruction and assessment are to promote students’ sense of personal competence and confidence” (p.5). Feelings of self-worth, improved self-concept, and overall self-esteem are often inextricably linked to self-perceptions of ability. Through assessment and evaluation, teachers are able to affirm both innate as well as developing student abilities. Surveys of students in after school programs have shown significant improvement in their self-confidence, esteem, and efficacy (Davis, 2001; Sanacore, 2002; Sanderson, 2003). Children obtain new skills and become more confident learners, enjoy school more, and as a result, their school attendance and performance improve (Wallace-Reader’s Digest Funds, 2002). After school programs impact character by changing students’ lives and preparing them for the future. Students develop an appreciation, respect, and reverence for others and the environment. The two most important components of an after school program’s success are dialogue between teachers and students, and the use of live experiences to build character (Williams, Yanchar, & Jensen, 2003).

According to Elias et al. (2003), the following is a list of factors that are associated with successful and enduring program implementation: (a) presence of a program coordinator or committee to oversee implementation and resolution of day-to-day problems, (b) involvement of individuals with high morale, good communication, and a sense of ownership, (c) ongoing processes of formal and informal training, including the involvement of knowledgeable experts, (d) high inclusiveness of all stakeholders, (e) high visibility in the school and the community, (f) program components that explicitly foster mutual respect and support among students, (g) varied and engaging instructional approaches, (h) linkage to stated goals of schools or districts, (i) consistent support from school principals, and (j) balanced support from both new and seasoned administrators.

A growing body of research suggests that after school programs can have positive effects on many intermediate outcomes, including an interest in learning, social
competence, improved behavior, and expectations of success (Pierce, Hamm et al., 1999; Larson, 2000; Walker & Arbreton, 2004; Mahoney & Lord, 2005; Vandell, Dadisman et al., 2005). These intermediary outcomes for academic achievement are focused on engagement in learning and motivation. In addition, they include attitude-related factors such as sense of hope for the future as well as skills such as good work habits, and behaviors such as reduction in risk-taking (Leffert, Saito et al., 1996; Catalano, Berglund et al., 1998; Eccles & Goodman, 2002; Rothstein, 2004). Motivation and engagement in learning have been identified in the education literature as key factors in promoting academic success (Barton, 2003; Boggiano & Pittman, 1992; Clark 1988; Connell, Spencer et al., 1994; Corbett & Wilson, 2002; Csikszentmihalyi & Nakamura, 1989; Danielson, 2002; Eccles & Midgley, 1989; Eccles, Wigfield et al., 2000; Klem & Connell, 2004; Learning Point Associates, 2004; Libbey, 2004; Mahoney & Lord, 2005; Marzano, 2003; National Institute of Child Health and Human Development, 1998; Elias, 2003; Nettles & Robinson, 1998; Ross & Broh, 2000; Ryan & Patrick, 2001; Sadowski, 2005; U.S. Department of Education, 1998; Wentzel & Wigfield, 1998).

Summary

The literature review provides information relevant to after school programs including the 21st Century Community Learning Center Programs. It presents positive research on the potential that quality after school activities could make in keeping children safe, out of trouble, and learning. Specifically, it presents evidence of success for after school activities and a perspective on how after school programs can affect a student’s academic performance, motivation, and behavioral/social issues.

A thorough review of literature revealed that after school curricula generally center on four objectives: (a) Scholastic Development (e.g., Baker & Witt, 1996; Davis, 2001; Miller, 2003; Nash & Fraser, 1998; Sanacore, 2002; Schlatter et al., 2003), (b) Social Behavior (e.g., Davis, 2001; Miller 2003; Sanderson, 2003; Wallace-Reader’s Digest Funds, 2002), (c) Caring Environment (e.g., Davis, 2001; Hamilton & Klein, 1998; Sanderson, 2003; Wallace-Reader’s Digest Funds, 2002), and (d) Personal Inspiration (e.g., Davis, 2001; Sanacore, 2002; Sanderson, 2003; Wallace-Reader’s Digest Funds, 2002; Williams et al., 2003). This literature review can benefit grant writers and/or
school systems that might be interested in initiating an after school program or studying
the effects of existing ones.
CHAPTER 3

METHODS

Focus of the Study

The purpose of this study was to examine the impact of structured after school programs on the academic, motivation, and behavior/social development of students who attend the 21st Century Community Learning Center programs in Florida. This chapter presents the design and data collection procedures used in the study, including the methods and procedures used for conducting a statewide impact study. The chapter also provides an analysis of demographic data for the students on whom data were collected and analyzed for this study.

Participants

Data for this research were obtained from archival data collected from students and teachers associated with 78 after school programs funded by the Department of Education and located throughout the state of Florida. A total of 76 programs provided the requisite data on students from 287 schools serving children with 21st CCLC funds. The resulting sample consisted of a total of 46,654 students between Kindergarten and Twelfth grade, on whom specific data were gathered during the 2004-2005 academic year to indicate academic progress, achievement motivation, and in-school behavior.

As part of the data collection process, programs were required to submit demographic data on each student, including grade level, gender, and total days of attendance during the 2004-2005 academic year. Of those students on whom data were collected, 44,569 (95.5%) had grade levels submitted by the program. As shown in Table 3.1, the majority of students in Florida’s 21st CCLC programs are in late-elementary or middle school, with the highest percentage of students coming from third grade (14.4%) and sixth grade (13.2%). In addition to grade level, data were collected on student gender.
As indicated in Table 3.2, the distribution of male and female students was practically equal, with only slightly more females (50.2%) than males (49.8%).

Table 3.1

Distribution of Students by Grade Level

<table>
<thead>
<tr>
<th>Grade</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>2173</td>
<td>4.9%</td>
</tr>
<tr>
<td>1</td>
<td>2810</td>
<td>6.3%</td>
</tr>
<tr>
<td>2</td>
<td>3760</td>
<td>8.4%</td>
</tr>
<tr>
<td>3</td>
<td>6435</td>
<td>14.4%</td>
</tr>
<tr>
<td>4</td>
<td>5126</td>
<td>11.5%</td>
</tr>
<tr>
<td>5</td>
<td>4780</td>
<td>10.7%</td>
</tr>
<tr>
<td>6</td>
<td>5894</td>
<td>13.2%</td>
</tr>
<tr>
<td>7</td>
<td>4692</td>
<td>10.5%</td>
</tr>
<tr>
<td>8</td>
<td>3637</td>
<td>8.2%</td>
</tr>
<tr>
<td>9</td>
<td>1883</td>
<td>4.2%</td>
</tr>
<tr>
<td>10</td>
<td>1444</td>
<td>3.2%</td>
</tr>
<tr>
<td>11</td>
<td>1077</td>
<td>2.4%</td>
</tr>
<tr>
<td>12</td>
<td>858</td>
<td>1.9%</td>
</tr>
<tr>
<td>Total</td>
<td>44569</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 3.2

Distribution of Students by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>22479</td>
<td>50.2%</td>
</tr>
<tr>
<td>Male</td>
<td>22294</td>
<td>49.8%</td>
</tr>
<tr>
<td>Total</td>
<td>44773</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
In addition to grade level and gender, programs submitted data on the annual attendance of each student during the 2004-2005 academic year. Of the 46,654 students on whom data were submitted, days of attendance ranged from one (1) day to 230 days, with a mean yearly attendance of 56.59 days (SD=37.24). In order to control for those students who did not attend enough days to gain benefits from the 21st CCLC program, the student sample was separated into two groups: (1) students considered by the United States Department of Education (USDOE) to be fully participating by attending at least 30 days of programming (i.e., intervention group) and (2) non-participating students targeted by the after school program but attending fewer than the requisite 30 days of programming (i.e., control group). The final composition of the intervention group consisted of 25,415 students (54.5% of total sample), while the control group consisted of 21,239 students (45.5% of total sample).

As shown in Table 3.3, the distributions of students by grade level for both the control (N=19,815 students with grade level reported) and intervention groups (N=24,754 with grade level) are similar to the combined distribution, as well as between the control and intervention groups. As shown, there were minor differences between the distributions, with sixth graders representing the highest percentage of control group students (14.45%) and third graders representing the highest percentage of intervention group students (16.83%). The distribution of gender within each group was also similar, with females representing approximately 50% of students in both groups (Control=49.12%; Intervention=51.09%) and males representing the remaining percentage (Control=50.88%; Intervention=48.91%).

Because of the nature and method of data collection, as well as restrictions imposed by the Florida Department of Education, a limited amount of demographic data was collected on individual student participants. Data were not collected to indicate such specific student data as ethnicity, socioeconomic status, and initial achievement levels. However, because of the federal and state laws and policies related to 21st CCLC grants, students targeted by the program were required to be (1) low-income, as indicated by participation in the free-and-reduced lunch program, and (2) low-performing, as indicated by previous scores on the Florida Comprehensive Achievement Test (FCAT). As such, it is anticipated that the two student groupings are similar in major demographic variables.
(e.g., socioeconomic status, initial academic performance, at-risk of failure, ethnic composition), and it is anticipated that the control and intervention groups already control for these demographic factors.

Table 3.3

Distribution of Control and Intervention Groups by Grade Level

<table>
<thead>
<tr>
<th>Grade</th>
<th>Control Group</th>
<th></th>
<th></th>
<th>Intervention Group</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>804</td>
<td>4.06%</td>
<td></td>
<td>1369</td>
<td>5.53%</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1073</td>
<td>5.42%</td>
<td></td>
<td>1737</td>
<td>7.02%</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1429</td>
<td>7.21%</td>
<td></td>
<td>2331</td>
<td>9.42%</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2268</td>
<td>11.45%</td>
<td></td>
<td>4167</td>
<td>16.83%</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1939</td>
<td>9.79%</td>
<td></td>
<td>3187</td>
<td>12.87%</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1915</td>
<td>9.66%</td>
<td></td>
<td>2865</td>
<td>11.57%</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>2863</td>
<td>14.45%</td>
<td></td>
<td>3031</td>
<td>12.24%</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>2321</td>
<td>11.71%</td>
<td></td>
<td>2371</td>
<td>9.58%</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>1856</td>
<td>9.37%</td>
<td></td>
<td>1781</td>
<td>7.19%</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>1156</td>
<td>5.83%</td>
<td></td>
<td>727</td>
<td>2.94%</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>912</td>
<td>4.60%</td>
<td></td>
<td>532</td>
<td>2.15%</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>699</td>
<td>3.53%</td>
<td></td>
<td>378</td>
<td>1.53%</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>580</td>
<td>2.93%</td>
<td></td>
<td>278</td>
<td>1.12%</td>
<td></td>
</tr>
<tr>
<td>TOTALS</td>
<td><strong>19815</strong></td>
<td><strong>100.0%</strong></td>
<td></td>
<td><strong>24754</strong></td>
<td><strong>100.0%</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 3.4

Distribution of Control and Intervention Groups by Gender

<table>
<thead>
<tr>
<th></th>
<th>Control Group</th>
<th></th>
<th></th>
<th>Intervention Group</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>9863</td>
<td>49.12%</td>
<td></td>
<td>12616</td>
<td>51.09%</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10218</td>
<td>50.88%</td>
<td></td>
<td>12076</td>
<td>48.91%</td>
<td></td>
</tr>
<tr>
<td>TOTALS</td>
<td><strong>20081</strong></td>
<td><strong>100.0%</strong></td>
<td></td>
<td><strong>24692</strong></td>
<td><strong>100.0%</strong></td>
<td></td>
</tr>
</tbody>
</table>
As indicated above, one of the requirements for participating in a 21st CCLC program is to have low scores on previous achievement tests (i.e., FCAT). To help measure students’ progress in math and reading, the present research utilized the Developmental Scale (DS) Scores of the FCAT. The DS scores were created to help interested parties better understand a student’s year-to-year progress. These DS scores range from zero (0) to approximately 3000, and students should receive higher scores every year depending on their level of achievement in learning the academic content being tested. For students participating in the present research, Math FCAT scores ranged from 38 to 2882, with a mean score of 1414.06 (SD=457.48). Reading FCAT scores in the same sample ranged from 39 to 2790, with a mean score of 1356.52 (SD=485.99). The FCAT scores for math among control group students (N=10,959 reported, \(M=1469.29, SD=439.43\)) was higher than the FCAT math scores for the intervention group students (N=13,047 reported, \(M=1367.67, SD=467.11\)). Similarly, FCAT reading scores were higher within the control group (N=11,150 reported, \(M=1412.10, SD=474.06\)) than the intervention group (N=13,457 reported, \(M=1310.48, SD=490.93\)).

**Research Design and Procedures**

**Research Questions**

The research design of this study was quasi-experimental. It involved the investigation of the effect of an independent variable, but the independent variable was not under experimental control. A quasi-experimental control was created by separating students into two groups (control vs. intervention) based on Federally-defined parameters of regular participation. The following research questions were used as a basis for this study:

1. What are the academic impacts of after school programs on participating students, as measured by mathematics test scores, reading test scores, and grade point averages?
2. What are the motivational impacts of after school programs on participating students, as measured by the number of school absences, number of school tardies, and teacher ratings of student dedication towards completing assigned work?
3. What are the behavioral and social impacts of after school programs on participating students, as measured by number of disciplinary referrals, number of suspensions from school, and ratings of student ability to get along with others?

**Research Hypotheses**

The United States Department of Education has defined “fully participating students” as those students who have attended an after-school program for at least 30 days over the course of the year. For the purposes of this study, students targeted by Florida’s 21st CCLC programs were grouped into a control sample (i.e., students participating for fewer than 30 days) and an intervention sample (i.e., students participating for more than 30 days or more over the course of the academic year). The following hypotheses were proposed to guide the statistical analyses and interpretation of collected data:

**H1.** Students within the intervention sample will exhibit significantly greater academic gains than students within the control sample, as demonstrated by reported school grades in mathematics courses, school grades in reading/English courses, and school grade point averages reported at defined intervals throughout the 2004-2005 academic year.

**H2.** Students within the intervention sample will exhibit significantly higher dedication and motivation to succeed in school than students within the control group, as demonstrated by number of regular-school absences, number of regular-school tardies, and teacher ratings of student dedication to complete academic work measured at defined intervals throughout the 2004-2005 academic year.

**H3.** Students within the intervention sample will demonstrate significantly lower levels of negative school behaviors than students within the control group, as indicated by number of disciplinary referrals, number of school suspensions, and teacher ratings of student ability to get along with others measured at defined intervals during the 2004-2005 academic year.
Validity and Reliability of Archival Data

Data used for analysis in this study were retrieved from archival 21st Century Community Learning Center (21st CCLC) data from the 2004-2005 academic year. The data were collected and are maintained by the 21st CCLC Leadership Team within the University of Florida. The Executive Committee and the Evaluation Unit agreed to provide the aforementioned data following approval by the Florida State University Institutional Review Board. See Appendix A for a list of those variables used in the study, as well as a description of how those data were coded and interpreted by the 21st CCLC Leadership Team.

Throughout the 2004-2005 academic year, state evaluators collected data on student academic performance, student participation, teacher perceptions of program progress, and parent satisfaction through the use of various surveys and questionnaires. In an effort to aid programs with data submission and increase the validity of submitted data, survey forms were adapted for distribution through a secured online internet server. In addition, with the exception of the parent surveys, all data were entered and electronically submitted directly by individual program directors, site coordinators, teachers, or participants. Such online data collection allowed programs to view and update submitted data as necessary, reduced potential errors of second-party data entry and coding, and enhanced the integrity and interpretability of submitted data.

In addition to data collected through online surveys and written instruments, a team of two evaluators conducted two separate visits of each 21st CCLC after school program operating during the 2004-2005 academic year. Such evaluation visits were intended to validate data submitted via online surveys, collect additional data not collected through written surveys, and provide an opportunity for immediate feedback regarding program operation.

Archival Data Collection

After receiving approval from the Human Subjects Committee at The Florida State University, the researcher worked closely with the Associate Executive Director for Florida’s 21st CCLC Leadership Team at the University of Florida to obtain and store the necessary archival data collected during the 2004-2005 academic year. In accordance
with the Health Insurance Portability and Accountability Act (HIPAA), only the Associate Executive Director had access to the confidential and identifiable information contained in the archival database (e.g., student names, school identification numbers), and no such information was provided to the researcher. All student data were referenced by a unique identification number randomly created to maintain integrity of data across multiple data collection periods while ensuring the confidentiality of all information. Upon completion of data collection, all data were analyzed and cleaned to remove invalid or erroneous data.

**Methods of Quantitative Data Compilation**

**Step 1. Student Database:** Created an electronic database that contained each student’s mathematics grades, reading grades, grade point averages, school absences, school tardies, disciplinary referrals, and school suspensions from three data collection periods during the 2004-2005 academic year. Teacher-submitted data were also collected on each student to indicate (1) dedication towards completing assigned work and (2) ability to get along with others.

**Step 2. Clarification:** As necessary, additional information for the elaboration, clarification, and/or verification of the aforementioned data from the Statewide Program Evaluation Unit and/or after-school program administrators was obtained and added to the database.

**Step 3. Analyses:** The student database was analyzed to test the statistical relationships expressed or implied in the research questions between the after school programs and academic, motivational, behavioral/social factors.

**Ethics**

In accordance with HIPAA policies, all archival data obtained from Florida 21st Century Community Learning Centers were devoid of all identifiable information, thus ensuring the maximum level of confidentiality for students, teachers, and parents on whom data were collected. The research did not involve any intervention or manipulation applied by the researcher. All data collected and maintained by Florida’s 21st Century Community Learning Centers were stored in accordance with applicable Florida Law and research policies of the University of Florida.
CHAPTER 4
RESULTS

This chapter is separated into three sections. The first section discusses the major variables of interest, while the second section presents the descriptive data and preliminary statistics for these major variables. Preliminary statistics were generated to analyze the demographic differences between the intervention and control student groupings and explore the necessity of including “program” as an independent variable. The third section reports results relevant to the study hypotheses. These sections will explore each research question and test each hypothesis with a variety of quantitative statistics suggested for numerical data (U.S. General Accounting Office, 1996; Weber, 1990). Statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS 14.0) and other appropriate statistical software available from The Florida State University and the University of Florida. Hypothesis testing involved a limited number of complex statistical procedures to reduce Type I error and maximize available power. For all statistical analyses presented and discussed in this chapter, a two-tailed probability level of \( p < .05 \) was used as the criterion for statistical significance.

Section One: Variables of Interest

Dependent Variables. The outcome variables for this study represented measures in three performance domains: (1) measures of academic gains, consisting of mathematics grades, reading/English grades, and grade point averages; (2) measures of motivation and dedication, consisting of regular-school absences, regular-school tardies, and ratings of student dedication to complete academic work; and (3) measures of school behaviors, consisting of disciplinary referrals, school suspensions, and ratings of student ability to get along with others. Data on each of the nine measures constituting the three performance domains were collected at four data collection periods throughout the course of the academic year. These data collection periods were consistent with the ending of the
nine-weeks for those programs on a standard academic year schedule, thus providing some level of control within a four-semester school system and ensuring the requisite data were available at the data collection points (e.g., semester grades are only available after the semester ends, disciplinary actions may not be tabulated until report cards are due, etc.).

Independent Variables. There were three key independent variables within this study: level of program attendance (control group vs. intervention group), grade in school, and student gender. Because of the federal and state laws and policies related to 21st CCLC grants, students targeted by the program were required to be (1) low-income, as indicated by participation in the free-and-reduced lunch program, and (2) low-performing, as indicated by previous scores on the Florida Comprehensive Achievement Test (FCAT). As such, it is assumed that the two student groupings are similar in major demographic variables (e.g., socioeconomic status, initial academic performance, at-risk of failure, ethnic composition).

Section Two: Demographic and Descriptive Statistics

This section contains descriptive data and statistics for the major variables of interest, including an exploration of the differences between the intervention and control group on the FCAT and the study’s demographic variables. Scatter plots were first run to assure that there were no significant outliers that may have corrupted or invalidated the major data analyses. No outliers were found.

As demonstrated in the previous chapter, although the distribution of students between grades and genders were similar across the control and intervention groups, the FCAT scores reported on participating students were not consistent between groups. More specifically, the FCAT scores for math and reading were higher among control group students than for those categorized in the intervention group. A multivariate analysis of variance (MANOVA) revealed that the control group had higher FCAT math scores during the previous year (N=10,959 reported, M=1469.29, SD=439.43) than did the intervention group (N=13,047 reported, M=1367.67, SD=467.11, F(1, 24004)=297.528, p<.001). The MANOVA also indicated similar findings with FCAT reading scores, wherein the control group had higher reading scores (N=11,150 reported,
M=1412.10, SD=474.06) than did the intervention group (N=13.457 reported, 
M=1310.48, SD=490.93, F(1, 24605)= 269.511, p<.001). FCAT scores following the 2004-2005 academic year were not reported by the programs, so student FCAT growth following the 21st CCLC program cannot be explored. However, even if longitudinal FCAT data were available, it would be impossible to control for all variables that impact a student’s FCAT scores and focus only upon the impact of the 21st CCLC program.

In addition to an exploration of the differences between FCAT scores, it is also important to examine the descriptive statistics of the performance domains within both the control group and intervention group of students. Towards this end, the following three tables present descriptive data on the three categories of dependent variables described in Section One of this chapter. Table 4.1 presents the descriptive data for the measures of academic gains for each of the four data collection periods (i.e., mathematic grades, reading/literacy grades, and grade point averages (GPA)).

Table 4.1
Academic Gains Indicators across Performance Periods by Student Grouping

<table>
<thead>
<tr>
<th>Period</th>
<th>Control Group</th>
<th>Intervention Group</th>
<th>Combined Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Mathematics Grades</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>9616</td>
<td>77.93</td>
<td>12.31</td>
</tr>
<tr>
<td>2</td>
<td>10285</td>
<td>76.66</td>
<td>12.92</td>
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<tr>
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<td>9778</td>
<td>75.80</td>
<td>13.35</td>
</tr>
<tr>
<td>4</td>
<td>9412</td>
<td>76.05</td>
<td>13.11</td>
</tr>
<tr>
<td>Reading Grades</td>
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<td></td>
</tr>
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<td>1</td>
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<td>78.85</td>
<td>12.10</td>
</tr>
<tr>
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<td>10277</td>
<td>78.28</td>
<td>12.29</td>
</tr>
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<td>9747</td>
<td>77.66</td>
<td>12.57</td>
</tr>
<tr>
<td>4</td>
<td>8935</td>
<td>77.82</td>
<td>12.20</td>
</tr>
<tr>
<td>GPA</td>
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<td>4695</td>
<td>2.51</td>
</tr>
<tr>
<td>2</td>
<td>5428</td>
<td>2.57</td>
<td>0.82</td>
</tr>
<tr>
<td>3</td>
<td>5086</td>
<td>2.40</td>
<td>0.84</td>
</tr>
<tr>
<td>4</td>
<td>4470</td>
<td>2.43</td>
<td>0.82</td>
</tr>
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</table>
Table 4.2 presents descriptive data for the measures related to motivation and dedication to school and learning at each of the four data collection periods (i.e., regular-day school absences, regular-day school tardiness, and teacher-ratings of students’ dedication to complete academic work). Finally, Table 4.3 presents descriptive data for the measures related to positive school behavior at each of the four data collection periods (i.e., number of regular day school referrals, number of academic year suspensions, and teacher ratings of students’ ability to get along with other peers).

### Table 4.2

**Motivation and Dedication Indicators across Performance Periods by Student Grouping**

<table>
<thead>
<tr>
<th>Period</th>
<th>Control Group</th>
<th></th>
<th></th>
<th>Intervention Group</th>
<th></th>
<th></th>
<th>Combined Group</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>M</td>
<td>SD</td>
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<td>11462</td>
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<td>16707</td>
<td>2.75</td>
<td>4.73</td>
<td>28169</td>
<td>3.09</td>
<td>5.34</td>
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<tr>
<td>2</td>
<td>11474</td>
<td>1.93</td>
<td>3.22</td>
<td>21117</td>
<td>1.35</td>
<td>2.33</td>
<td>32591</td>
<td>1.56</td>
<td>2.69</td>
</tr>
<tr>
<td>3</td>
<td>11310</td>
<td>2.66</td>
<td>3.91</td>
<td>21181</td>
<td>2.21</td>
<td>3.16</td>
<td>32491</td>
<td>2.37</td>
<td>3.44</td>
</tr>
<tr>
<td>4</td>
<td>9610</td>
<td>3.12</td>
<td>4.12</td>
<td>17913</td>
<td>2.16</td>
<td>3.06</td>
<td>27523</td>
<td>2.49</td>
<td>3.50</td>
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<tr>
<td></td>
<td>10775</td>
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<td>4.43</td>
<td>15954</td>
<td>1.89</td>
<td>5.44</td>
<td>26729</td>
<td>1.77</td>
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<td>1.06</td>
<td>2.57</td>
<td>30350</td>
<td>1.05</td>
<td>2.58</td>
</tr>
<tr>
<td>3</td>
<td>10445</td>
<td>1.19</td>
<td>2.83</td>
<td>19476</td>
<td>1.40</td>
<td>3.25</td>
<td>29921</td>
<td>1.33</td>
<td>3.11</td>
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<tr>
<td>4</td>
<td>8683</td>
<td>1.67</td>
<td>3.78</td>
<td>15963</td>
<td>1.53</td>
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<td>1</td>
<td>7760</td>
<td>1.60</td>
<td>1.08</td>
<td>13328</td>
<td>1.65</td>
<td>1.13</td>
<td>21088</td>
<td>1.63</td>
<td>1.11</td>
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<tr>
<td>2</td>
<td>8214</td>
<td>2.15</td>
<td>0.66</td>
<td>17651</td>
<td>2.22</td>
<td>0.64</td>
<td>25865</td>
<td>2.20</td>
<td>0.65</td>
</tr>
<tr>
<td>3</td>
<td>9701</td>
<td>2.15</td>
<td>0.73</td>
<td>19771</td>
<td>2.25</td>
<td>0.65</td>
<td>29472</td>
<td>2.22</td>
<td>0.68</td>
</tr>
<tr>
<td>4</td>
<td>8859</td>
<td>2.25</td>
<td>0.70</td>
<td>16619</td>
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<td>0.65</td>
<td>25478</td>
<td>2.29</td>
<td>0.67</td>
</tr>
</tbody>
</table>
Table 4.3

School Behavior Indicators across Performance Periods by Student Grouping

<table>
<thead>
<tr>
<th>Period</th>
<th>Control Group</th>
<th>Intervention Group</th>
<th>Combined Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Discipline Referrals</td>
<td>1</td>
<td>10009</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10196</td>
<td>0.27</td>
</tr>
<tr>
<td></td>
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<td>10050</td>
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</tr>
<tr>
<td></td>
<td>4</td>
<td>8535</td>
<td>0.42</td>
</tr>
<tr>
<td>School Suspensions</td>
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<td>10680</td>
<td>0.18</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>10749</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>10847</td>
<td>0.28</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>9545</td>
<td>0.30</td>
</tr>
<tr>
<td>Get Along w/ Others</td>
<td>1</td>
<td>7701</td>
<td>1.70</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>7972</td>
<td>2.33</td>
</tr>
<tr>
<td></td>
<td>3</td>
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</tr>
<tr>
<td></td>
<td>4</td>
<td>8803</td>
<td>2.41</td>
</tr>
</tbody>
</table>

Prior to finalizing the statistics to be used for hypothesis testing, it is important to determine whether students should be nested within individual programs. As mentioned above, data were collected from a total of 46,654 students, with the intervention group consisting of 25,415 students (54.5% of total sample) and the control group consisting of 21,239 students (45.5% of total sample). The total sample of students was obtained from 287 sites within 76 after-school programs, wherein students in the intervention group attended 266 sites within 75 programs, and students in the control group attended 272 sites within 74 programs. As shown in Table 4.4, an average of 88.6 (SD=71.1) students within the intervention group attended each site, and an average of 334.4 (SD=264.3) students within the intervention group attended each program. Similarly, an average of 74.0 (SD=93.9) control students attended each site, and an average of 279.5 (SD=298.3) control students attended each program. While the average number of students per site
and program appears adequate, it is important to note that several sites and programs reported data on a low number of students, while other sites and programs reported data on much larger numbers of students.

**Table 4.4**

Average Distribution of Students between 21st CCLC Programs and Sites

<table>
<thead>
<tr>
<th></th>
<th>Students Per Program</th>
<th>Number of Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average</td>
<td>SD</td>
</tr>
<tr>
<td>Control Group</td>
<td>279.46</td>
<td>298.31</td>
</tr>
<tr>
<td>Intervention Group</td>
<td>334.41</td>
<td>264.33</td>
</tr>
<tr>
<td>Combined Group</td>
<td>613.87</td>
<td>484.77</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Students Per Site</th>
<th>Number of Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average</td>
<td>SD</td>
</tr>
<tr>
<td>Control Group</td>
<td>74.00</td>
<td>93.91</td>
</tr>
<tr>
<td>Intervention Group</td>
<td>88.55</td>
<td>71.10</td>
</tr>
<tr>
<td>Combined Group</td>
<td>162.56</td>
<td>113.36</td>
</tr>
</tbody>
</table>

In addition to substantial differences between numbers of students between programs and sites, it is also important to note the similarities between all 21st CCLC programs and sites. In accordance with Federal and State rules, regulations, policies, and laws, all 21st CCLC programs are required to provide students with services that are similar across all programs. For instance, in 2004-2005, all sites were required to operate for 15 hours per week, over four days. All sites were required to provide activities that encompassed the following: (1) reading activities aligned with the Governor’s reading initiatives, (2) homework assistance and core subject tutoring, (3) recreational programming aligned to the regular school day curriculum, (4) nutrition and physical education to address the obesity epidemic, and (5) daily nutritious snacks approved by the United States Department of Agriculture (USDA). Ultimately, the flexibility provided to programs to modify and individualize their respective sites was carefully limited to ensure consistency across the state of Florida.
Section Three: Hypothesis Testing

General Discussion of Hypothesis Testing

Each of the three hypotheses involves mixed “group by time” designs, with three separate repeated measures dependent variables for each performance indicator (i.e., academic gains, motivation and dedication, and in-school behaviors). For each hypothesis, a doubly multivariate analysis (repeated-measures General Linear Model) was initially used to simultaneously analyze the impact of all three repeated-measures variables within the respective performance indicator category. Within each of the doubly multivariate analyses, grade level in school was included as a covariate to control for the differences in performance indicators due to grade levels in school. For those doubly multivariate analyses with demonstrated significance, additional analyses were conducted to test the indicated effect on each of the dependent variables while maintaining the covariate of grade level. Such procedure was intended to provide some protection against the inflation of alpha from multiple analyses.

Such repeated measures statistics carry a standard set of assumptions: multivariate normality, homogeneity of covariance matrices, and independence of observations. Repeated measure analyses are robust to violations of the first two assumptions, whereas violations of independence will produce a non-normal distribution of the residuals, which results in invalid test statistics. In addition to these assumptions, univariate tests of the within-subject effects within the larger model also assumes sphericity, wherein a transformed matrix of within-subject variables has equal variances and covariances equal to zero. Because both the doubly multivariate analysis and the follow-up analysis include univariate comparisons, it is important to consider whether sphericity was violated. However, because of the large number of subjects, traditional tests of sphericity will always be significant even if only a small violation was found. As such, all univariate analyses will be interpreted using the Greenhouse-Geisser correction, which adjusts the degrees of freedom in order to produce a more accurate significance (p) value.

Hypothesis One

The first research hypothesis proposed that students within the intervention sample would exhibit significantly greater academic gains than students within the
control sample, as demonstrated by reported school grades in mathematics courses, school grades in reading/English courses, and school grade point averages reported at defined intervals throughout the 2004-2005 academic year.

The doubly multivariate analysis using the general linear modeling procedure indicated significant differences between students’ academic performance indicators by both grade level ($F(9,3665)=6.683$, $p<.001$) and treatment group ($F(9,3665)=7.301$, $p<.001$), thus supporting the inclusion of grade level as a covariate in the remaining statistical tests of Hypothesis One. Multivariate within-subjects statistics using Wilks’ Lambda procedure also indicated significant differences in academic performance indicators across time for the combined group of students ($F(9,26812.63)=12.24$, $p<.001$) and for students separated into their respective control or intervention groups ($F(9,26812.63)=7.58$, $p<.001$). In essence, there were differences in the three academic performance measures over the course of the school year.

Table 4.5 presents univariate within-subjects results obtained from the doubly multivariate analysis. Statistics were computed using the Greenhouse-Geisser Correction to adjust for the violation of sphericity. As shown, results indicated significant differences across time and treatment group for all three individual measures of academic performance (Math Grade: $F(2.74,10064.69)=7.737$, $p<.001$; Reading Grades: $F(2.77,10180)=8.814$, $p<.001$; GPA: $F(2.64,9706.3)=9.059$, $p<.001$). As such, it is appropriate to run separate repeated measures general linear modeling procedures for each of the academic performance indicators (i.e., Mathematics Grades, Reading Grades, GPA) to more clearly demonstrate the differences between control group students and intervention group students.

A repeated-measures analysis of covariance (ANCOVA) on mathematics grades at each of the four performance periods, controlling for student grade level and using the Greenhouse-Geisser Correction to adjust for violation of sphericity is shown in Table 4.6. As shown in the table, results indicated significant differences across time ($F(2.71,41058.32)=100.71$, $p<.001$) and between the two groups of student participants across time (i.e., control versus intervention) ($F(2.71,41058.32)=19.01$, $p<.001$). As shown in Figure 4.1 and supported by post hoc t-tests using Bonferroni adjustments for multiple comparisons, there was no significant difference in estimated marginal means of math
grades between the control and intervention groups at the initial performance period ($t=0.476, p=0.634$). However, control group students were significantly lower than intervention group students at the remaining performance periods (Period 2: $t=-3.522, p<.000$; Period 3: $t=-4.961, p<.000$; Period 4: $t=-6.226, p<.000$). As such, although all students had decreases in mathematics grades across time, students who attended the 21st CCLC programs for more than 30 days had significantly lower levels of decline than did students who did not attend the programs for at least 30 days.

### Table 4.5
Univariate Within-Subjects Results from Doubly Multivariate Analysis on Academic Performance Indicators

<table>
<thead>
<tr>
<th>Tests</th>
<th>Measure</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
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</tr>
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<td>13.925</td>
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</tr>
<tr>
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<td>GPA</td>
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<tr>
<td>Time * Group</td>
<td>Math</td>
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<td>614.1934</td>
<td>7.737</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Read</td>
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<td>702.2943</td>
<td>8.814</td>
<td>0.000</td>
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<tr>
<td></td>
<td>GPA</td>
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<td>2.64</td>
<td>1.774878</td>
<td>9.059</td>
<td>0.000</td>
</tr>
<tr>
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<td>Math</td>
<td>798945.60</td>
<td>10064.69</td>
<td>79.38106</td>
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</tr>
<tr>
<td></td>
<td>Read</td>
<td>811158.20</td>
<td>10180.00</td>
<td>79.68152</td>
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<td>1901.71</td>
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</table>

*Computed using alpha = .05
Greenhouse-Geisser Correction for Violation of Sphericity

### Table 4.6
Within-Subjects Analysis of Math Grades across Time and Student Grouping

<table>
<thead>
<tr>
<th>Tests</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
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<td>7326.95</td>
<td>100.71</td>
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</tr>
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<td>Time * Group</td>
<td>3750.67</td>
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<td>1383.22</td>
<td>19.01</td>
<td>0.000</td>
</tr>
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<td>Error(Time)</td>
<td>2987067.67</td>
<td>41058.32</td>
<td>72.75</td>
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<td></td>
</tr>
</tbody>
</table>

*Computed using alpha = .05
Greenhouse-Geisser Correction for Violation of Sphericity
As with mathematics, Table 4.7 indicates the results of a repeated-measures analysis of covariance (ANCOVA) on reading/literacy grades at each of the four performance periods, controlling for student grade level and using the Greenhouse-Geisser Correction to adjust for violation of sphericity. As shown in the table, results indicated significant differences across time ($F(2.74, 41289.48)=81.62, p<.001$) and between the two groups of student participants across time (i.e., control versus intervention) ($F(2.74, 41289.48)=8.09, p<.001$). As shown in Figure 4.2 and supported by post hoc t-tests using Bonferoni adjustments for multiple comparisons, there was no significant difference in estimated marginal means of reading grades between the control and intervention groups at the initial performance period ($t=-0.214, p=0.831$). However, as with mathematics, control group students were significantly lower than intervention group students at the remaining performance periods (Period 2: $t=-2.612, p<.000$; Period 3: $t=-3.059, p<.000$; Period 4: $t=-5.005, p<.000$). As such, although all students demonstrated decreases in reading grades over the course of the academic year, students who attended the 21st CCLC programs for more than 30 days had significantly lower levels of decline than did students who did not attend the programs for at least 30 days.
### Table 4.7
Within-Subjects Analysis of Reading Grades across Time and Student Grouping

<table>
<thead>
<tr>
<th>Tests</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
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<td>5687.51</td>
<td>81.62</td>
<td>0.00</td>
</tr>
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<td>2.74</td>
<td>563.62</td>
<td>8.09</td>
<td>0.00</td>
</tr>
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<td>Error(Time)</td>
<td>2877270.91</td>
<td>41289.48</td>
<td>69.69</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Computed using alpha = .05
Greenhouse-Geisser Correction for Violation of Sphericity

![Figure 4.2](image)

**Figure 4.2**
Reading Grade Changes Across Performance Periods

The final academic performance indicator, grade point average at each of the four performance periods, was also analyzed with a repeated-measures analysis of covariance (ANCOVA), controlling for student grade level and using the Greenhouse-Geisser Correction to adjust for violation of sphericity. As shown in Table 4.8, results indicated significant differences across time ($F(2.70, 2515.86)=61.55, p<.001$) and between the two groups of student participants across time (i.e., control versus intervention) ($F(2.70, \ldots$)
As shown in Figure 4.3 and supported by post hoc t-tests using Bonferroni adjustments for multiple comparisons, there was no significant difference in estimated marginal means of grade point averages between the control and intervention groups at the initial performance period ($t=0.064, p=0.949$). However, as with mathematics and reading grades, control group students were significantly lower than intervention group students at the remaining performance periods (Period 2: $t=2.074, p=.038$; Period 3: $t=-3.020, p=.003$; Period 4: $t=-3.043, p=.002$). As such, although all students demonstrated an overall reduction in overall GPA over the course of the academic year, students in the control group initially had increases in GPA during the second performance period, but then demonstrated significant declines in the third and fourth performance periods, during which time students who attended the 21st CCLC programs for more than 30 days had significantly higher GPAs than did students who did not attend the programs for at least 30 days.

### Table 4.8

**Within-Subjects Analysis of GPA across Time and Student Grouping**

<table>
<thead>
<tr>
<th>Tests</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
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<td>11.58</td>
<td>61.55</td>
<td>0.00</td>
</tr>
<tr>
<td>Time * Group</td>
<td>11.78</td>
<td>2.70</td>
<td>4.37</td>
<td>23.22</td>
<td>0.00</td>
</tr>
<tr>
<td>Error(Time)</td>
<td>2515.86</td>
<td>13376.78</td>
<td>0.188</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Greenhouse-Geisser Correction for Violation of Sphericity*
Hypothesis Two

The second research hypothesis proposed that students within the intervention sample will exhibit significantly higher dedication and motivation to succeed in school than students within the control group, as demonstrated by number of regular-school absences, number of regular-school tardies, and teacher ratings of student dedication to complete academic work measured at defined intervals throughout the 2004-2005 academic year.

As with academic performance indicators, a doubly multivariate analysis using the general linear modeling procedure was conducted using the three separate measures of dedication and motivation. Results of the doubly multivariate analysis indicated significant differences between students’ dedication and motivation indicators by both grade level ($F(3, 8535)=60.541, p<.001$) and treatment group ($F(3, 8535)=95.521, p<.001$), thus supporting the inclusion of grade level as a covariate in the remaining statistical tests of Hypothesis Two. Multivariate within-subjects statistics using Wilks’ Lambda procedure also indicated significant differences in dedication and performance indicators across time for the combined group of students ($F(9, 62325.73) = 212.859, p<.001$) and for students separated into their respective control or intervention groups.
In essence, there were differences in the three dedication/motivation measures over the course of the school year. Table 4.9 presents univariate within-subjects results obtained from the doubly multivariate analysis. Statistics were computed using the Greenhouse-Geisser Correction to adjust for the violation of sphericity. As shown, results indicated significant differences across time and treatment group for all three individual measures of dedication and motivation (i.e., School Absences: \( F(2.60, 22157.00) = 3.00, p = .036 \); School Tardiness: \( F(2.06, 17624.73) = 8.33, p < .001 \); Teacher Ratings of Academic Work Completion: \( F(1.87, 15922.22) = 19.00, p < .001 \). As such, it is appropriate to run separate repeated measure general linear modeling procedures for each of the dedication and motivation indicators (i.e., Absences, Tardiness, and Work Completion) to more clearly explore and demonstrate the specific differences between control group students and intervention group students on these measures.

Table 4.9

<table>
<thead>
<tr>
<th>Tests</th>
<th>Measure</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>Absences</td>
<td>2548.50</td>
<td>2.60</td>
<td>981.92</td>
<td>116.20</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Tardies</td>
<td>1482.32</td>
<td>2.06</td>
<td>718.00</td>
<td>57.62</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Work Completion</td>
<td>710.07</td>
<td>1.87</td>
<td>380.72</td>
<td>527.83</td>
<td>0.000</td>
</tr>
<tr>
<td>Time * Group</td>
<td>Absences</td>
<td>65.90</td>
<td>2.60</td>
<td>25.39</td>
<td>3.00</td>
<td>0.036</td>
</tr>
<tr>
<td></td>
<td>Tardies</td>
<td>214.24</td>
<td>2.06</td>
<td>103.77</td>
<td>8.33</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Work Completion</td>
<td>25.56</td>
<td>1.87</td>
<td>13.70</td>
<td>19.00</td>
<td>0.000</td>
</tr>
<tr>
<td>Error(Time)</td>
<td>Absences</td>
<td>187231.61</td>
<td>22157.00</td>
<td>8.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tardies</td>
<td>219603.94</td>
<td>17624.73</td>
<td>12.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Work Completion</td>
<td>11484.59</td>
<td>15922.22</td>
<td>0.72</td>
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<td></td>
</tr>
</tbody>
</table>

Computed using alpha = .05
Greenhouse-Geisser Correction for Violation of Sphericity

A repeated-measures analysis of covariance (ANCOVA) on rate of regular school absences at each of the four performance periods, controlling for student grade level and
using the Greenhouse-Geisser Correction to adjust for violation of sphericity is shown in Table 4.10. As shown in the table, results indicated significant differences across time \( (F(2.44, 45272.16) = 253.74, p < .001) \) and between the two groups of student participants across time (i.e., control versus intervention) \( (F(2.44, 45272.16) = 31.46, p < .001) \).

**Table 4.10**

Within-Subjects Analysis of School Absences across Time and Student Grouping

<table>
<thead>
<tr>
<th>Tests</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>6536.33</td>
<td>2.44</td>
<td>2681.69</td>
<td>253.74</td>
<td>0.000</td>
</tr>
<tr>
<td>Time * Group</td>
<td>810.40</td>
<td>2.44</td>
<td>332.49</td>
<td>31.46</td>
<td>0.000</td>
</tr>
<tr>
<td>Error(Time)</td>
<td>478458.80</td>
<td>45272.16</td>
<td>10.57</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Computed using alpha = .05

*Greenhouse-Geisser Correction for Violation of Sphericity

![Graph showing changes in school absence rates across performance periods](image)

**Figure 4.4**
Changes in School Absence Rates Across Performance Periods
Table 4.11 indicates the results of a repeated-measures analysis of covariance (ANCOVA) on number of in-school tardiness across each of the four performance periods, controlling for student grade level and using the Greenhouse-Geisser Correction to adjust for violation of sphericity. As shown in the table, results indicated significant differences across time ($F(2.14, 36073.90) = 128.86, p<.001$) and between the two groups of student participants across time (i.e., control versus intervention) ($F(2.14, 36073.90) = 11.68, p<.001$). As shown in Figure 4.5 and supported by post hoc t-tests using Bonferroni adjustments for multiple comparisons, there was no significant difference in estimated marginal means of number of regular-school tardies between the control and intervention groups at the initial or second performance periods (Period 1: $t=-0.616, p=0.538$; Period 2: $t=1.425, p=0.154$). However, control group students had significantly fewer tardies than did intervention group students during period 3 (Period 3: $t=-2.881, p=.004$), while intervention group students had significantly fewer tardies during the final performance period of the academic year (Period 4: $t=4.057, p<.000$). As such, although both control group and intervention group students demonstrated similar trends in the numbers of tardies, students who attended the 21st CCLC programs for more than 30 days eventually had significantly lower levels of tardiness than did students who did not attend the programs for at least 30 days.

Table 4.11

Within-Subjects Analysis of School Tardiness across Time and Student Grouping

<table>
<thead>
<tr>
<th>Tests</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>3141.04</td>
<td>2.14</td>
<td>1471.17</td>
<td>128.86</td>
<td>0.000</td>
</tr>
<tr>
<td>Time * Group</td>
<td>284.64</td>
<td>2.14</td>
<td>133.32</td>
<td>11.68</td>
<td>0.000</td>
</tr>
<tr>
<td>Error(Time)</td>
<td>411836.51</td>
<td>36073.90</td>
<td>11.42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Computed using alpha = .05

Greenhouse-Geisser Correction for Violation of Sphericity
The final dedication and motivation indicator, teacher ratings of academic work completion at each of the four performance periods, was also analyzed with a repeated-measures analysis of covariance (ANCOVA), controlling for student grade level and using the Greenhouse-Geisser Correction to adjust for violation of sphericity. As shown in Table 4.12, results indicated significant differences across time ($F(1.85, 19598.79)=736.16, p<.001$) and between the two groups of student participants across time (i.e., control versus intervention) ($F(1.85, 19598.79)=20.33, p<.001$).

Table 4.12

Within-Subjects Analysis of Work Completion across Time and Student Grouping

<table>
<thead>
<tr>
<th>Tests</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>1027.74</td>
<td>1.85</td>
<td>556.95</td>
<td>736.16</td>
<td>0.000</td>
</tr>
<tr>
<td>Time * Group</td>
<td>37.51</td>
<td>1.85</td>
<td>20.33</td>
<td>26.87</td>
<td>0.000</td>
</tr>
<tr>
<td>Error(Time)</td>
<td>14827.80</td>
<td>19598.79</td>
<td>0.76</td>
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<td></td>
</tr>
</tbody>
</table>

*Computed using alpha = .05

Greenehouse-Geisser Correction for Violation of Sphericity
More specifically, as shown in Figure 4.6 and supported by post hoc t-tests using Bonferroni adjustments for multiple comparisons, there were no significant differences in estimated marginal means of teacher ratings of academic work completion between the control and intervention groups at the initial performance period ($t=-1.697$, $p=0.090$). However, intervention group students received significantly higher ratings than control group students at the remaining performance periods (Period 2: $t=-9.348$, $p<0.001$; Period 3: $t=-13.196$, $p<0.001$; Period 4: $t=-15.306$, $p<0.001$). As such, although all students demonstrated an overall improvement in teacher ratings of academic work completion, students who attended the 21st CCLC programs for more than 30 days had significantly greater increases in teacher ratings of work completion than did students who did not attend the programs for at least 30 days.

**Figure 4.6**
Changes in Academic Work Completion Ratings Across Performance Periods

**Hypothesis Three**

The final research hypothesis proposed that students within the intervention sample will demonstrate significantly lower levels of negative school behaviors than students within the control group, as indicated by number of disciplinary referrals, number of
school suspensions, and teacher ratings of student ability to get along with others measured at defined intervals during the 2004-2005 academic year.

As with academic performance and motivation/dedication indicators, a doubly multivariate analysis using the general linear modeling procedure was conducted using the three separate measures of dedication and motivation. Results of the doubly multivariate analysis indicated significant differences between students’ in-school behavior indicators by both grade level ($F(3,8331)=128.113, p<.001$) and treatment group ($F(3,8331)=46.660, p<.001$), thus supporting the inclusion of grade level as a covariate in the remaining statistical tests of Hypothesis Three. Multivariate within-subjects statistics using Wilks’ Lambda procedure indicated significant differences in school behavior indicators across time for the combined group of students ($F(9,60836.28)=191.605, p<.001$) and for students separated into their respective control or intervention groups ($F(9,60836.283)=7.338, p<.001$). In essence, there were differences in the three behavioral performance measures over the course of the school year.

Table 4.13 presents univariate within-subjects results obtained from the doubly multivariate analysis. Statistics were computed using the Greenhouse-Geisser Correction to adjust for the violation of sphericity.

**Table 4.13**

*Within-Subjects Analysis of Work Completion across Time and Student Grouping*

<table>
<thead>
<tr>
<th>Tests</th>
<th>Measure</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>Referrals</td>
<td>4.243</td>
<td>2.914</td>
<td>1.456</td>
<td>3.392</td>
<td>0.018</td>
</tr>
<tr>
<td></td>
<td>Suspensions</td>
<td>1.229</td>
<td>2.708</td>
<td>0.454</td>
<td>2.157</td>
<td>0.098</td>
</tr>
<tr>
<td></td>
<td>Nice to Others</td>
<td>747.007</td>
<td>1.688</td>
<td>442.563</td>
<td>571.931</td>
<td>0.000</td>
</tr>
<tr>
<td>Time * Group</td>
<td>Referrals</td>
<td>10.515</td>
<td>2.914</td>
<td>3.609</td>
<td>8.407</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Suspensions</td>
<td>7.474</td>
<td>2.708</td>
<td>2.759</td>
<td>13.117</td>
<td>0.000</td>
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<tr>
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<td>Nice to Others</td>
<td>5.963</td>
<td>1.688</td>
<td>3.533</td>
<td>4.566</td>
<td>0.015</td>
</tr>
<tr>
<td>Error(Time)</td>
<td>Referrals</td>
<td>10423.186</td>
<td>24281.943</td>
<td>0.429</td>
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</tr>
<tr>
<td></td>
<td>Suspensions</td>
<td>4747.907</td>
<td>22568.347</td>
<td>0.210</td>
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</tr>
<tr>
<td></td>
<td>Nice to Others</td>
<td>10883.839</td>
<td>14065.369</td>
<td>0.774</td>
<td></td>
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</tr>
</tbody>
</table>

*Computed using alpha = .05
Greenhouse-Geisser Correction for Violation of Sphericity*
As shown in Table 4.13, results indicated significant differences across time and treatment group for all three individual measures of in-school behavior (number of referrals: \( F(2.914, 24281.943)= 8.407, p<.001 \); number of suspensions: \( F(2.708, 22568.347)= 13.117, p<.001 \); teacher ratings of getting along with others: \( F(1.688, 14065.369)= 4.566, p=.015 \)). As such, it is appropriate to run separate repeated measure general linear modeling procedures for each of the in-school behavior indicators (i.e., Referrals, Suspensions, Get Along with Others) to more clearly demonstrate the differences between control group students and intervention group students across the course of the school year.

A repeated-measures analysis of covariance (ANCOVA) on number of referrals during each of the four performance periods, controlling for student grade level and using the Greenhouse-Geisser Correction to adjust for violation of sphericity is shown in Table 4.14. As shown in the table, results indicated significant differences across time (\( F(2.19, 48776.97)=4.756, p=.003 \)) and between the two groups of student participants across time (i.e., control versus intervention) (\( F(2.19, 48776.97)=7.105, p<.001 \)). As shown in Figure 4.7 and supported by post hoc t-tests using Bonferroni adjustments for multiple comparisons, there were significant differences in estimated marginal means of disciplinary referrals between the control and intervention groups at all four performance periods (Period 1: \( t=3.499, p<.000 \); Period 2: \( t=3.686, p<.000 \); Period 3: \( t=6.997, p<.000 \); Period 4: \( t=3.136, p=.002 \)). Ultimately, students who attended the 21st CCLC programs for more than 30 days had significantly lower rates of disciplinary referrals throughout the four performance periods than those students who did not attend the programs for at least 30 days.

<table>
<thead>
<tr>
<th>Tests</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>6.966</td>
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<td>2.392</td>
<td>4.756</td>
<td>0.003</td>
</tr>
<tr>
<td>Time * Group</td>
<td>10.406</td>
<td>2.912</td>
<td>3.573</td>
<td>7.105</td>
<td>0.000</td>
</tr>
</tbody>
</table>
| Error(Time)   | 24533.634               | 48776.968 | 0.503

*Computed using alpha = .05

*Greenhouse-Geisser Correction for Violation of Sphericity*
Table 4.15 indicates the results of a repeated-measures analysis of covariance (ANCOVA) on number of school suspensions at each of the four performance periods, controlling for student grade level and using the Greenhouse-Geisser Correction to adjust for violation of sphericity. As shown in the table, results indicated significant differences across time ($F(2.92, 52871.21)=4.382, p=.005$) and between the two groups of student participants across time (i.e., control versus intervention) ($F(2.92, 52871.21)=8.500, p<.001$). As shown in Figure 4.8 and supported by post hoc t-tests using Bonferroni adjustments for multiple comparisons, there were significant differences in estimated marginal means of periodic schools suspensions between the control and intervention groups at all four performance periods (Period 1: $t=2.349, p=.019$; Period 2: $t=3.387, p=.001$; Period 3: $t=6.468, p<.000$; Period 4: $t=4.940, p=.002$). Ultimately, students who attended the 21st CCLC programs for more than 30 days had significantly lower rates of disciplinary referrals throughout the four performance periods than those students who did not attend the programs for at least 30 days. It should be noted that the discrepancy between student groups was greater in the fourth period than in the initial two performance periods.
Table 4.15
Within-Subjects Analysis of School Suspensions across Time and Student Grouping

<table>
<thead>
<tr>
<th>Tests</th>
<th>Type III Sum of Squares</th>
<th>df</th>
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<th>F</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>Time</td>
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<td>2.920</td>
<td>2.032</td>
<td>4.382</td>
<td>0.005</td>
</tr>
<tr>
<td>Time * Group</td>
<td>11.508</td>
<td>2.920</td>
<td>3.942</td>
<td>8.500</td>
<td>0.000</td>
</tr>
<tr>
<td>Error(Time)</td>
<td>24517.792</td>
<td>52871.213</td>
<td>0.464</td>
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</tr>
</tbody>
</table>

Computed using alpha = .05
Greenhouse-Geisser Correction for Violation of Sphericity

Figure 4.8
Changes in Rates of Disciplinary Suspensions Across Performance Periods

The final in-school behavior indicator, teacher ratings of student ability to get along with other students at each of the four performance periods, was also analyzed with a repeated-measures analysis of covariance (ANCOVA), controlling for student grade level and using the Greenhouse-Geisser Correction to adjust for violation of sphericity. As shown in Table 4.16, results indicated significant differences across time ($F(1.662, 17616.06)= 898.152, p<.001$) and between the two groups of student participants across time (i.e., control versus intervention) ($F(1.662, 17616.06)=4.629, p=.014$). As shown in
Figure 4.9 and supported by post hoc t-tests using Bonferroni adjustments for multiple comparisons, there were significant differences in estimated marginal means of teacher ratings of students’ ability to get along with others between the control and intervention groups at all four performance periods (Period 1: $t = -3.962$, $p < .000$; Period 2: $t = -7.801$, $p < .000$; Period 3: $t = -10.377$, $p < .000$; Period 4: $t = -12.643$, $p < .001$). Ultimately, although there were significant differences at each performance period, students who attended the 21st CCLC programs for more than 30 days maintained significantly higher ratings of ability to get along with others throughout the four performance periods than those students who did not attend the programs for at least 30 days.

Table 4.16

<table>
<thead>
<tr>
<th>Tests</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>1257.193</td>
<td>1.662</td>
<td>756.554</td>
<td>898.152</td>
<td>0.000</td>
</tr>
<tr>
<td>Time * Group</td>
<td>6.508</td>
<td>1.662</td>
<td>3.916</td>
<td>4.649</td>
<td>0.014</td>
</tr>
<tr>
<td>Error(Time)</td>
<td>14838.799</td>
<td>17616.062</td>
<td>0.842</td>
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</tr>
</tbody>
</table>

*Greenhouse-Geisser Correction for Violation of Sphericity*

![Figure 4.9](image.png)

Changes in Ratings of “Getting Along with Others” Across Performance Periods
CHAPTER 5
DISCUSSION

The purpose of this study was to examine the impact of after school programs on the academic, motivational, and behavioral and social development of the students who regularly attend the 21st Century Community Learning Center programs. Data used for analysis in this study were retrieved from archival 21st Century Community Learning Center (21st CCLC) data obtained during the 2004-05 academic year from active programs throughout the state of Florida. Major variables of interest included both dependent and independent variables, with the dependent variables representing outcome measures in three general performance domains: (1) academic performance and academic gains (i.e., mathematics grades, reading/English grades, and school grade point averages); (2) motivation and dedication to the education process (i.e., number of regular-school absences, number of regular-school tardies, and teacher ratings of student dedication to complete academic work); and (3) positive in-school behaviors and social development (i.e., number of disciplinary referrals, number of regular school suspensions, and teacher ratings of students’ ability to get along with others). Data on each of the nine measures constituting the three performance domains were collected for four statewide data collection periods throughout the course of the academic year. These data collection periods were consistent with the ending of the nine-week semesters for those programs on a standard academic year schedule, thus providing some level of control within a four-semester school system and ensuring the requisite data was available at the data collection points (e.g., semester grades are only available after the semester ends, disciplinary actions may not be tabulated until report cards are due, etc.).

In addition to dependent variables, three key independent variables were included within this study: level of program attendance (i.e., control group vs. intervention group), grade level in school, and student gender. Because of federal and state laws and policies
related to 21st CCLC grants, students targeted by the program were required to be (1) low-income, as indicated by participation in the free-and-reduced lunch program, and (2) low-performing, as indicated by previous scores on the Florida Comprehensive Achievement Test (FCAT). As such, it was assumed that the two student groupings were similar in major demographic variables not assessed as part of the statewide data collection procedures (e.g., socioeconomic status, initial academic performance, at-risk of failure, ethnic composition).

This chapter presents a discussion of the results introduced in the previous chapter. The first section discusses the findings related to academic impacts, the motivational impacts, and behavioral/social impacts of after school programs on participating students. The second section provides a discussion of the implications of the study findings. Finally, the third section discusses limitations of the current research design and provides some direction for future research in this field.

**Synopsis of Findings**

**Hypothesis One**

The first research hypothesis proposed that students within the intervention sample would exhibit significantly greater academic gains than students within the control sample, as demonstrated by reported school grades in mathematics courses, school grades in reading/English courses, and school grade point averages reported at defined intervals throughout the 2004-2005 academic year. This first hypothesis was not supported, as neither control nor intervention group students demonstrated academic gains over the course of the year. Although the hypothesis was not supported, other important findings emerged from the statistical analyses. In essence, all students included in the study demonstrated declines in all three measures of academic performance (i.e., mathematics grades, reading grades, and grade point averages). However, while all students entered the year with similar levels on each academic performance measure, those students that regularly attended the 21st CCLC programs had higher grades throughout the remainder of the academic year, and higher GPAs by the end of the academic year.

These findings suggest that students who regularly participated in out-of-school programming provided by 21st CCLC may have experienced a protective effect against
the declines exhibited by similar students who did not regularly attend the programs. Although it is not possible to attribute this demonstrated protective effect entirely to the services provided by the 21st CCLC program, it is likely that the carefully designed and controlled services provided by the 21st CCLC programs contributed to the protective effect. Although the findings of this study do not support the findings of past research that reports after school programs can help students improve grades and standardized test scores (Baker & Witt, 1996; Davis, 2001; Nash & Fraser, 1998; Sanacore, 2002; Sanderson, 2003; Schlatter, Schahrer, & Pogue, 2003), it is important to consider the types of students being served by 21st CCLC programs. Because those students specifically targeted for inclusion and service in 21st CCLC programs are those most at-risk of academic and social failure, even moderate protective effects can help reduce stress, improve future performance in educational settings, and reduce the rate of dropout among participating students. Indeed, it may be that the impacts of the 21st CCLC programs (e.g., character education, study skills, remediation, etc.) may not be realized for several years following participation in the program.

**Hypothesis Two**

The second research hypothesis proposed that students within the intervention sample would exhibit significantly higher dedication and motivation to succeed in school than students within the control group, as demonstrated by number of regular-school absences, number of regular-school tardies, and teacher ratings of student dedication to complete academic work measured at defined intervals throughout the 2004-2005 academic year. The second hypothesis was fully supported as written, although not to the degree originally expected when proposed. Results indicated that, by the end of the academic year, students regularly participating in the 21st CCLC programs had fewer absences, fewer tardiness, and higher teacher-ratings of academic work completion than did students who did not regularly attend the programs.

The differences between student groups within the motivation/dedication domain were not as clear or consistent as academic performance differences. For instance, regularly participating students had a lower baseline number of absences than did the control group of students, which was maintained throughout the first three periods of the program year. It was not until the fourth period that a larger difference was realized,
wherein regular participants maintained the same average level of absences and control group students significantly increased in absences from the third to the fourth period. Similarly, regularly participating students did not demonstrate the potential impact of the 21st CCLC program until the final period of data collection, at which point regularly participating students had fewer tardies than did the control group students. In essence, the same protective effect discussed for academic performance indicators may have also been realized within the motivational indicators of school absences and tardiness. More in line with original expectations, students in both the intervention and control groups had the same level of teacher ratings of academic work completion at the beginning of the school year, but those students regularly participating in the 21st CCLC program demonstrated increased ratings during each successive data collection period, and maintained significantly higher ratings than control group students for the second, third, and fourth data collection periods.

These findings are consistent with previous research that concluded after school programs can have positive effects on many intermediate outcomes, including an interest in learning, social competence, improved behavior, expectations of success (Pierce, Hamm et al., 1999; Larson, 2000; Walker & Arbreton, 2004; Mahoney & Lord, 2005; and Vandell, Dadisman et al., 2005). The results are also consistent with the recent research findings of Kane (2004), who concluded that students in elementary and middle school programs demonstrated student progress in homework completion, quality of homework, and classroom participation.

**Hypothesis Three**

The final research hypothesis proposed that students within the intervention sample would demonstrate significantly lower levels of negative school behaviors than students within the control group, as indicated by number of disciplinary referrals, number of school suspensions, and teacher ratings of student ability to get along with others measured at defined intervals during the 2004-2005 academic year. As with Hypothesis Two, this research hypothesis was supported as written, but not to the extent that was originally anticipated. Results indicated that, by the end of the academic year and compared to control group students, those students regularly participating in the 21st
CCLC programs had fewer referrals for discipline, fewer suspensions from school, and higher teacher-ratings of their ability to get along with other students.

However, the results supporting this hypothesis were not as clear or consistent as anticipated. Students who regularly attended the programs had fewer demonstrated discipline problems by the end of the academic year, but the impact was mediated by significant baseline differences in numbers of referrals and suspensions. Indeed, the intervention group of students had a lower number of referrals and suspensions at the beginning of the academic year. In terms of numbers of referrals, students in the intervention group maintained this same degree of difference for the majority of the school year, and ended the school year with the same degree of difference. As such, aside from a potential protective factor during the third period of data collection, students in the 21st CCLC program did not appear to differ from the control group of students over the course of the academic year. In relation to numbers of suspensions from school, students who regularly attended the 21st CCLC programs had a lower baseline level of suspensions than did control group students, and maintained the same level of difference during the second data collection period.

However, unlike numbers of referrals, regular 21st CCLC students demonstrated greater differences during the third and fourth data collection periods. Again, this suggests a potential protective factor of the structured out-of-school environment. Finally, as with academic work completion, findings related to teacher ratings of ability to get along with other students were more in line with original expectations. In fact, while students in both the intervention and control groups had the same level of teacher ratings of getting along with others at the beginning of the school year, those students regularly participating in the 21st CCLC program demonstrated increased ratings and maintained significantly higher ratings than control group students for the second, third, and fourth data collection periods. These findings support recent research that indicated after school programs can positively affect student attitudes and behaviors in school and their ability to achieve learning goals (Wallace-Reader’s Digest Funds, 2002).
<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Measured By</th>
<th>Finding</th>
<th>Relationship to Previous Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 1</td>
<td>Math grades, reading/English grades, and grade point averages</td>
<td>Not supported as neither control nor intervention group students demonstrated academic gains over the course of the year. 21st CCLC students had significantly higher grades throughout the remainder of the academic year, and higher GPAs by the end of the academic year.</td>
<td>After school programs can help students improve grades and standardized test scores (Baker &amp; Witt, 1996; Davis, 2001; Nash &amp; Fraser, 1998; Sanacore, 2002; Sanderson, 2003; Schahrer, &amp; Pogue, 2003).</td>
</tr>
<tr>
<td>Hypothesis 2</td>
<td>Regular-school absences, regular school tardies, and ratings of student dedication to complete academic work.</td>
<td>Supported as written, although not to the degree originally expected when proposed. 21st CCLC students had fewer absences, fewer tardiness, and higher teacher-ratings of academic work completion than did students who did not regularly attend the programs.</td>
<td>After school programs can have positive effects on interest in learning, social competence, improved behavior, and expectations of success (Pierce, Hamm et al., 1999; Larson, 2000; Walker &amp; Albreton, 2004; Mahoney &amp; Lord, 2005; Vandell, Dadisman et al., 2005).</td>
</tr>
<tr>
<td>Hypothesis 3</td>
<td>Disciplinary referrals, school suspensions, and ratings of student ability to get along.</td>
<td>Supported as written, but not in the extent that was originally anticipated. 21st CCLC students had fewer referrals for discipline, fewer suspensions from school, and higher teacher-ratings of their ability to get along with other students.</td>
<td>After school programs can positively affect student attitudes and behaviors in school and their ability to achieve learning goals (Wallace-Reader’s Digest Funds, 2002).</td>
</tr>
</tbody>
</table>

**Figure 4.10**
Summary of Findings
Implications

Findings from this study suggest that including structured 21st CCLC programs as a regular component of students’ broader educational experience may have positive and protective effects on regular student participants. From a research perspective, it is notable that there were detectable differences between intervention and control group students on the educational, motivational, and behavioral outcomes. Such differences strengthen the concept that out-of-school and extracurricular activities can have measurable impacts on student’s regular-school performance and behavior. Indeed, most educational interventions outside of the regular school day are often measured with more directly-linked impact measures (e.g., pre-post measures), as direct-linked assessments have substantially increased power to detect improvement and change. However, such direct-linked assessments do not hold stakes in decisions about promotion and retention, and are generally not considered by parents and society to be of high consequence or usefulness.

On a practical level, findings from this research suggest that after school programs should focus additional attention on increasing the attendance of enrolled students, as low levels of attendance do not provide students with the same level of additive or protective benefits. The underlying reasons for higher rates of attendance should be explored by each individual program, as there may be a variety of reasons that students attend a particular program. For instance, it may be that the student is individually motivated to attend the program for academic or social reasons (e.g., wanting to get higher grades, wanting to hang out with friends), or it may be that a parent is motivated to require that the student attend the after school program (e.g., wanting the student to do better in school, wanting to support positive social relationships, needing a safe place for the student to go after school). Of course, it is a matter of interpretation, and one cannot immediately assume that just attending the after school program promotes improved academic achievement, motivation, and positive behavior. It is certainly possible that a plethora of other variables and events helped to impact this study’s observed changes and differences between the control group and intervention group of students. Regardless, the connection between these elements is clear, and those students who regularly participated
in the structured, planned, and curriculum-based out-of-school programs demonstrated clear differences from those students who did not regularly participate.

After school programs have a long history of providing students with opportunities to work with others in a cooperative learning and safe environment to improve academic achievement, motivation, and social and behavioral skills. Certainly, students not only receive benefits in core academic areas, such as reading and math, but they also receive other measurable benefits associated with enrichment and recreational activities provided by the 21st CCLC programs. However, because of the lack of data and findings associated with after school programs in the past, it has become critical to demonstrate the effectiveness of after school programs both individually and on a national level. One of the most fundamental concepts to demonstrating the importance of after school programs is the actual impact on standard measures of student achievement. As such, results such as those obtained during the present study are critical to demonstrate the impact of after school programs, and to guide decisions associated with the continuation of funding for large-scale after school initiatives such as 21st CCLC (currently federally-funded at nearly $1 billion annually).

Towards this end, results of the study support the continuation of federal funds to support after school programming. Moreover, the results from this research challenge the potentially-flawed initial and follow-up program evaluations conducted by the Mathematica Policy Research and the Decision Information Resources, Inc., which suggested that many after school programs were ineffective and inappropriate to accomplish the major mission of federal after school funding. Although these results have been repeatedly challenged in the literature, particularly in terms of significant methodological limitations and flaws (Vandell, 2003), the overall results of these older and limited studies suggested specifically that 21st CCLC programs had a limited academic impact on student learning (U.S. Department of Education, 2003). The results of this study help to further challenge the Mathematica study.

Finally, it is important to realize the impact of this study on all after school programs throughout Florida and the United States. There are millions of children served by non-21st CCLC programs across the United States, with over 600,000 non-21st CCLC children within the state of Florida alone. The data and findings from the present study
help indicate the importance of continued and consistent participation in after school programs, rather than sporadic or short-term participation common in many after-school programs with similar goals as 21st CCLC (i.e., academic, motivational, and behavioral impacts). Certainly, public schools throughout Florida can replicate this study to assess benefits of their own internal after school programs, or can use this information to help develop new after school programs. Other programs in the nation also can use this study to further their research studies to benefit their students.

Limitations and Future Research

While this quantitative analysis of the after school program has contributed to a better understanding of whether 21st CCLC programs have made impacts on regularly-participating students’ academic achievement, motivation, and behavior and social development, some limitations help qualify the study’s findings. Indeed, limitations of any research must be considered when interpreting the data and resultant findings, and are particularly useful in designing future studies to help bolster previous findings.

Towards this end, this study’s limitations and potential solutions of the limitations are as follows:

(a) Data were collected from program directors and program staff, not a centralized database. Although there was no indication of contamination in this data set, there is possibility that some sites or programs provided inaccurate information on students, or simply did not submit data on students that did not do well in the 21st CCLC program. Additional methods of data collection could alleviate this limitation, such as incorporating the 21st CCLC data collection system into the statewide data system maintained by the Florida Department of Education.

(b) The federal 30-day requirement that indicates a “regular participant” is an arbitrary requirement set forth by the U.S. Department of Education for its own purposes and based loosely on past research. Additional research could explore whether more appropriate cut-offs for “full participation” could be identified, or whether attendance is a continuous measure that has protective effects for every additional day a student attends the program (e.g., the more the students attend, the better they score on measures of achievement and development).
Grades and grade point averages (GPA) are largely subjective measurements of academic achievement (i.e., provided by teachers who are potentially prone to subjective feelings during the grading process), and are not as powerful as controlled and/or standardized achievement tests based on standard curricula. Although very difficult to implement on a large scale, assessing students on simple achievement tests at several points of the school year could provide substantially more useful and powerful data (e.g., taking a test on the first day of attendance in 21st CCLC, middle of the year, and then last day of attendance of program). Such a methodology would also provide a more standardized comparison across students, schools, programs, and states (if administered across states).

Changes in behavioral indicators are also subjective and may not be entirely a product of changes in the student’s actual behavior, as changes behavioral indicators may be confounded with changes in the patience and/or knowledge of the students’ teachers. It is certainly possible that students could receive more referrals as the year progresses, even if the behavior in class improves or stays the same, as teachers are often reluctant to write referrals earlier in the year and may feel it necessary to write additional referrals later in the year to control behavior or provide an “example” to other students. This is also true for suspensions, as students are much less likely to be suspended earlier in the year, as most suspensions do not occur until other less serious avenues for punishment have been implemented. To help reduce the subjectivity of these measures, the addition of a standardized question of student behavior was helpful in the current study. Additional objective measures may be more useful in future studies, such as objective observations of students in the classroom. Certainly, natural observation would provide a tremendous amount of data, but such research is limited in terms of time for data collection and training of observers.

Motivation and dedication in the current study was estimated from measures of attendance and teacher reports of academic work completion. However, such measures provide data that are anticipated to measure student motivation and
dedication, but are at least one step removed from the actual internal source and indicators of motivation and dedication. Indeed, only the students can clearly state whether they feel more motivated or dedicated to engage in the educational process (e.g., parents may force their children to go to school, even if the children are not motivated). Surveys of students pertaining to motivation and dedication could be more useful at indicating actual differences through the course of the year, but special care would need to be taken to avoid responses high in social desirability and/or contaminated data submitted by program staff.

(f) The present study focused on only nine variables of interest, collapsed into three general areas of performance indicators. As with any research, additional variables are always possible and would add tremendous information to the interpretation of findings. For instance, variables such as student satisfaction with the program activities and parent satisfaction with the program environment could certainly mediate or moderate the findings presented in this research, and could have important impacts on the levels of program attendance and achievement.

(g) A puzzling limitation of this study is that there is no clear indication as to why both the control and intervention groups of students demonstrated academic declines over the course of the year. Certainly, teachers have increased expectations throughout the course of the year, but it is not clear whether their expectations are surpassing their instruction or whether the students are having difficulty demonstrating the learning gains. Additional research is necessary to help clarify why all students declined, and the collection of additional data would help clarify whether the decline lies with the students, teachers, or the environment.

(h) There were different proportions of control and intervention group participants between elementary and secondary schools. Many secondary school students had lower levels of attendance in the 21st CCLC program than did elementary school students. This area can be further explored by future research through an in-depth study to determine why fewer secondary school students participate in the 21st CCLC program.
(i) There is potential that the teacher rating survey may not have been adequate to accurately assess student progress on the variables of interests, as there was no method to determine whether the teachers reporting data were adequately knowledgeable of the student on whom data were submitted. This potential limitation is more likely among secondary students than among elementary school students, as teachers of the latter often have closer relationships with individual students. In addition, as there was no method to determine whether teachers knew students were participating in the 21st CCLC program, the ratings provided on the teacher survey may have been subject to a halo effect, where teacher ratings may be higher for students known to be participating in the program.

(j) The effect of the program may not be an entirely accurate representation of potential impact, as unmeasured initial differences between the control and intervention group of students may have underestimated or overestimated the actual impact. An in-depth analysis may be required to determine whether students who join such after school programs have preexisting psychological or social factors that influenced the final results, such as self-motivation, parental support, or peer pressure.

(k) Although students were assigned to an intervention and quasi-control group based on program attendance, selection of students may have been biased as students were not randomly assigned to the control and intervention groups. Certainly, random assignment of students to such a program that is anticipated to have beneficial effects outside of those measured by this research is difficult to do within the confines of research ethics, but future research can explore potential experimental methods that might address such selection bias.

(l) A longitudinal study may be needed to determine the long-term impact of students who participate in the program more than two years.

(m) The 21st CCLC programs were required by federal law to focus on academic tutoring, enrichment, and recreation activities. Although these activities are considered components of a well-balanced after school program, it is not certain that all programs participating in this study adequately implemented
these activities. To ensure consistency throughout all measured programs, future research should collect data on key ingredients of common after school program components, as well as data on the unique program components that might impact the variables of interest. Such a manipulation check would allow program designs to be revised to ensure students receive those services most likely result in the desired outcomes.

Regardless of the limitations presented above, findings from the present study are important in demonstrating the positive impacts out-of-school programs have on regularly participating students and their families. Many students and families rely on after school programs to provide the academic assistance that cannot be provided at home, to provide students with a breadth of experiences that parents cannot give, and to provide a safe environment where the students will be free from the negative influences and dangers present in many of today’s low-income communities. It is hoped that research such as this will eventually lead to the establishment and expansion of quality after school programs that provide an immeasurable benefit to protect our nation’s children and create productive members of society.
APPENDIX A

DATA CODE BOOK
### 21st Century Community Learning Centers
**2004-2005 Student Performance Data - Codebook**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Description</th>
<th>Measure Level</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>Unique student identification randomly generated to link student data. This ID can be linked to identifiable student information using the digital or paper versions of the master student list, both of which are stored in a secured location at the University of Florida. The master list is accessible only by the executive committee of the 21st CCLC leadership team and will not be made available to other individuals.</td>
<td>N/A</td>
<td>Random Value</td>
</tr>
<tr>
<td>Program</td>
<td>Name of the 21st CCLC program in which the student participated. As of this data collection, the Florida 21st CCLC initiative funded 76 after school programs within the state.</td>
<td>Nominal</td>
<td>Fixed Category</td>
</tr>
<tr>
<td>Site</td>
<td>Name of the 21st CCLC site in which the student participated. As of this data collection, 312 sites were operated by the 21st CCLC programs. Although programs could operate more than a single site, no site was permitted to be served by multiple programs.</td>
<td>Nominal</td>
<td>Fixed Category</td>
</tr>
<tr>
<td>SchoolID</td>
<td>Unique Site Identification Number for each 21st CCLC site, as some sites possess identical names to other sites in other counties and/or cities.</td>
<td>Nominal</td>
<td>Fixed Category</td>
</tr>
<tr>
<td>Grade</td>
<td>Student Grade Level during the 2004-2005 Academic Year. 21st CCLC programs are not intended to provide services to pre-kindergarten children, as the funding was established for extended-day (after school) programming. As such, grade levels of participating students ranged from kindergarten to twelfth grade.</td>
<td>Interval</td>
<td>0 – Kindergarten 1 – First Grade 2 – Second Grade 3 – Third Grade 4 – Fourth Grade 5 – Fifth Grade 6 – Sixth Grade 7 – Seventh Grade 8 – Eighth Grade 9 – Ninth Grade 10 – Tenth Grade 11 – Eleventh Grade 12 – Twelfth Grade</td>
</tr>
<tr>
<td>Variable</td>
<td>Variable Description</td>
<td>Measure Level</td>
<td>Values</td>
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<tr>
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</tr>
<tr>
<td>Gender</td>
<td>Student Gender</td>
<td>Ordinal</td>
<td>M – Male F – Female</td>
</tr>
<tr>
<td>FCAT_Mat</td>
<td><strong>FCAT Developmental Scale Score in Mathematics</strong> earned by this student during the 2003-2004 academic year. This data was reported directly by program administrators and was not collected from the Florida Department of Education.</td>
<td>Ratio</td>
<td>Absolute Minimum: 0 Absolute Maximum: 3000 Observed Minimum: 38 Observed Maximum: 2882</td>
</tr>
<tr>
<td>FCAT_Rea</td>
<td><strong>FCAT Developmental Scale Score in Reading</strong> earned by this student during the 2003-2004 academic year. This data was reported directly by program administrators and was not collected from the Florida Department of Education.</td>
<td>Ratio</td>
<td>Absolute Minimum: 0 Absolute Maximum: 3000 Observed Minimum: 39 Observed Maximum: 2790</td>
</tr>
<tr>
<td>Days1</td>
<td>Number of Days this student attended the 21st CCLC program from <strong>June 1st, 2004 – October 10th, 2004</strong>. This first reporting period included attendance during the summer of 2004. Programs were instructed to enter zero if the student did not attend during the specified reporting period. Maximum number of days varied by program.</td>
<td>Ratio</td>
<td>Observed Minimum: 0 Observed Maximum: 88</td>
</tr>
<tr>
<td>Days2</td>
<td>Number of Days this student attended the 21st CCLC program from <strong>October 11th, 2004 – December 10th, 2004</strong>. Programs were instructed to enter zero if the student did not attend during the specified reporting period. Maximum number of days varied by individual program.</td>
<td>Ratio</td>
<td>Observed Minimum: 0 Observed Maximum: 59</td>
</tr>
<tr>
<td>Days3</td>
<td>Number of Days this student attended the 21st CCLC program from <strong>December 10th, 2004 – March 10th, 2005</strong>. Programs were instructed to enter zero if the student did not attend during the specified reporting period. Maximum number of days varied by individual program.</td>
<td>Ratio</td>
<td>Observed Minimum: 0 Observed Maximum: 68</td>
</tr>
<tr>
<td>Variable</td>
<td>Variable Description</td>
<td>Measure Level</td>
<td>Values</td>
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</tbody>
</table>
| Days4    | Number of Days this student attended the 21st CCLC program from **March 11th, 2005 – May 10th, 2005**. Programs were instructed to enter zero if the student did not attend during the specified reporting period. Maximum number of days varied by individual program.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Ratio         | Observed Minimum: 0  
Observed Maximum: 57                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| DayTot   | Number of Days this student attended the 21st CCLC program from **June 1st, 2004 – May 10th, 2005**. This represents the sum of the previous four variables (Days1, Days2, Days3, Days4). Students without values represent those students with no attendance data reported. Unlike a value of zero, a blank “daytot” value does NOT indicate zero days of attendance for the year.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Ratio         | Observed Minimum: 0  
Observed Maximum: 230                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Math1    | Student’s **Classroom Grade in Mathematics at the END of the 2003-2004 School Year**. Because grading scales vary by county, program administrators were instructed to enter grades based on the standard 100-point percentage scale, converting all letter grades to percentages. Higher numbers represent higher grades in mathematics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Ratio         | Absolute Minimum: 0  
Absolute Maximum: 100  
Observed Minimum: 16  
Observed Maximum: 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Math2    | Student’s **Classroom Grade in Mathematics for the FIRST grading period** of the 2004-2005 School Year. Because grading scales vary by county, program administrators were instructed to enter grades based on the standard 100-point scale, converting all letter grades to numerical percentages. Higher numbers represent higher grades in mathematics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Ratio         | Absolute Minimum: 0  
Absolute Maximum: 100  
Observed Minimum: 16  
Observed Maximum: 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Math3    | Student’s **Classroom Grade in Mathematics for the SECOND grading period** of the 2004-2005 School Year. Because grading scales vary by county, program administrators were instructed to enter grades based on the standard 100-point scale, converting all letter grades to numerical percentages. Higher numbers represent higher grades in mathematics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Ratio         | Absolute Minimum: 0  
Absolute Maximum: 100  
Observed Minimum: 15  
Observed Maximum: 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Description</th>
<th>Measure Level</th>
<th>Values</th>
</tr>
</thead>
</table>
| Math4    | Student’s **Classroom Grade in Mathematics for the THIRD grading period** of the 2004-2005 School Year. Because grading scales vary by county, program administrators were instructed to enter grades based on the standard 100-point scale, converting all letter grades to numerical percentages. Higher numbers represent higher grades in mathematics. | Ratio          | Absolute Minimum: 0  
Absolute Maximum: 100  
Observed Minimum: 15  
Observed Maximum: 100 |
| Read1    | Student’s **Classroom Grade in Reading / Language Arts at the END of the 2003-2004 School Year.** Because grading scales vary by county, program administrators were instructed to enter grades based on the standard 100-point percentage scale, converting all letter grades to percentages. Higher percentages represent higher grades in reading or language arts. | Ratio          | Absolute Minimum: 0  
Absolute Maximum: 100  
Observed Minimum: 20  
Observed Maximum: 100 |
| Read2    | Student’s **Classroom Grade in Reading / Language Arts for the FIRST grading period** of the 2004-2005 School Year. Because grading scales vary by county, program administrators were instructed to enter grades based on the standard 100-point scale, converting all letter grades to numerical percentages. Higher percentages represent higher grades in reading or language arts. | Ratio          | Absolute Minimum: 0  
Absolute Maximum: 100  
Observed Minimum: 12  
Observed Maximum: 100 |
| Read3    | Student’s **Classroom Grade in Reading / Language Arts for the SECOND grading period** of the 2004-2005 School Year. Because grading scales vary by county, program administrators were instructed to enter grades based on the standard 100-point scale, converting all letter grades to numerical percentages. Higher percentages represent higher grades in reading or language arts. | Ratio          | Absolute Minimum: 0  
Absolute Maximum: 100  
Observed Minimum: 12  
Observed Maximum: 100 |
<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Description</th>
<th>Measure Level</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read4</td>
<td>Student’s Classroom Grade in Reading / Language Arts for the THIRD grading period of the 2004-2005 School Year. Because grading scales vary by county, program administrators were instructed to enter grades based on the standard 100-point scale, converting all letter grades to numerical percentages. Higher percentages represent higher grades in reading or language arts.</td>
<td>Ratio</td>
<td>Absolute Minimum: 0    &lt;br&gt;Absolute Maximum: 100  &lt;br&gt;Observed Minimum: 20  &lt;br&gt;Observed Maximum: 100</td>
</tr>
<tr>
<td>Gpa1</td>
<td>Overall Academic Grade Point Average (GPA) at the END of the 2003-2004 School Year. A GPA above 4.0 is possible in some districts, and caution should be practiced when interpreting GPA to ensure each student serves as her/his own statistical control. Higher GPAs indicate higher performance across academic subjects.</td>
<td>Ratio</td>
<td>Absolute Minimum: 0.0  &lt;br&gt;Absolute Maximum: 5.0  &lt;br&gt;Observed Minimum: 0.70  &lt;br&gt;Observed Maximum: 4.6</td>
</tr>
<tr>
<td>Gpa2</td>
<td>Overall Academic GPA at the end of the FIRST grading period of the 2004-2005 School Year. A GPA above 4.0 is possible in some districts, and caution should be practiced when interpreting GPA to ensure each student serves as her/his own statistical control. Higher GPAs indicate higher performance across all academic subjects.</td>
<td>Ratio</td>
<td>Absolute Minimum: 0.0  &lt;br&gt;Absolute Maximum: 5.0  &lt;br&gt;Observed Minimum: 0.50  &lt;br&gt;Observed Maximum: 4.61</td>
</tr>
<tr>
<td>Gpa3</td>
<td>Overall Academic GPA at the end of the SECOND grading period of the 2004-2005 School Year. A GPA above 4.0 is possible in some districts, and caution should be practiced when interpreting GPA to ensure each student serves as her/his own statistical control. Higher GPAs indicate higher performance across all academic subjects.</td>
<td>Ratio</td>
<td>Absolute Minimum: 0.0  &lt;br&gt;Absolute Maximum: 5.0  &lt;br&gt;Observed Minimum: 0.50  &lt;br&gt;Observed Maximum: 4.57</td>
</tr>
<tr>
<td>Gpa4</td>
<td>Overall Academic GPA at the end of the THIRD grading period of the 2004-2005 School Year. A GPA above 4.0 is possible in some districts, and caution should be practiced when interpreting GPA to ensure each student serves as her/his own statistical control. Higher GPAs indicate higher performance across all academic subjects.</td>
<td>Ratio</td>
<td>Absolute Minimum: 0.0  &lt;br&gt;Absolute Maximum: 5.0  &lt;br&gt;Observed Minimum: 0.60  &lt;br&gt;Observed Maximum: 4.71</td>
</tr>
<tr>
<td>Variable</td>
<td>Variable Description</td>
<td>Measure Level</td>
<td>Values</td>
</tr>
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<td>-----------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Absent1   | Number of regular school-days this student was ABSENT during the **LAST** grading period of the *2003-2004* School Year. Programs were instructed to include only full days of school absence that were not related to suspensions or expulsions. The majority of programs obtained this data using report cards from the previous year.                                                                                     | Ratio         | Observed Minimum: 0  
|           | Observed Maximum: 80                                                                                                                                                                                                                                                                                                                                 |               |                                                                         |
| Absent2   | Number of regular school-days this student was ABSENT during the **FIRST** grading period of the *2004-2005* School Year. Programs were instructed to include only full days of school absence that were not related to suspensions.                                                                                                                                   | Ratio         | Observed Minimum: 0  
|           | Observed Maximum: 63                                                                                                                                                                                                                                                                                                                                  |               |                                                                         |
| Absent3   | Number of regular school-days this student was ABSENT during the **SECOND** grading period of the *2004-2005* School Year. Programs were instructed to include only full days of school absence that were not related to suspensions.                                                                                                                                         | Ratio         | Observed Minimum: 0  
|           | Observed Maximum: 60                                                                                                                                                                                                                                                                                                                                  |               |                                                                         |
| Absent4   | Number of regular school-days this student was ABSENT during the **THIRD** grading period of the *2004-2005* School Year. Programs were instructed to include only full days of school absence that were not related to suspensions.                                                                                                                                          | Ratio         | Observed Minimum: 0  
|           | Observed Maximum: 44                                                                                                                                                                                                                                                                                                                                  |               |                                                                         |
| Tardy1    | Number of days this student was TARDY to regular-school during the **LAST** grading period of the *2003-2004* School Year. Programs were to include only days when the student was tardy to the actual school day, as opposed to each time the student was tardy to a specific class.                                                                                       | Ratio         | Observed Minimum: 0  
|           | Observed Maximum: 99                                                                                                                                                                                                                                                                                                                                  |               |                                                                         |
| Tardy2    | Number of days this student was TARDY to regular-school during the **FIRST** grading period of the *2004-2005* School Year. Programs were instructed to include only days when the student was tardy to the actual school day.                                                                                                                                         | Ratio         | Observed Minimum: 0  
<p>|           | Observed Maximum: 54                                                                                                                                                                                                                                                                                                                                  |               |                                                                         |</p>
<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Description</th>
<th>Measure</th>
<th>Level</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tardy3</td>
<td>Number of days this student was TARDY to regular-school during the SECOND grading period of the 2004-2005 School Year. Programs were to include only days when the student was tardy to the actual school day.</td>
<td>Ratio</td>
<td></td>
<td>Observed Minimum: 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Observed Maximum: 54</td>
</tr>
<tr>
<td>Tardy4</td>
<td>Number of days this student was TARDY to regular-school during the THIRD grading period of the 2004-2005 School Year. Programs were instructed to include only days when the student was tardy to the actual school day.</td>
<td>Ratio</td>
<td></td>
<td>Observed Minimum: 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Observed Maximum: 64</td>
</tr>
<tr>
<td>AcaCom1</td>
<td>Independent teacher rating of this student’s quality of academic work during the FIRST reporting period of the 2004-2005 School Year (June 1st, 2004 – October 10th, 2004). Teachers answered the question: “How was this student's academic work completion during the regular school day for this reporting period?” Higher ratings indicate higher academic work completion.</td>
<td>Ordinal</td>
<td></td>
<td>3 - Excellent</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 - Good</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>1 - Poor</td>
</tr>
<tr>
<td>AcaCom2</td>
<td>Independent teacher rating of this student’s quality of academic work during the SECOND reporting period of the 2004-2005 School Year (October 11th, 2004 – December 10th, 2004). Teachers answered the question: “How was this student's academic work completion during the regular school day for this reporting period?” Higher ratings indicate higher academic work completion.</td>
<td>Ordinal</td>
<td></td>
<td>3 - Excellent</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 - Good</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 - Poor</td>
</tr>
<tr>
<td>AcaCom3</td>
<td>Independent teacher rating of this student’s quality of academic work during the THIRD reporting period of the 2004-2005 School Year (December 11th, 2004 – March 10th, 2005). Teachers answered the question: “How was this student's academic work completion during the regular school day for this reporting period?” Higher ratings indicate higher academic work completion.</td>
<td>Ordinal</td>
<td></td>
<td>3 - Excellent</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 - Good</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 - Poor</td>
</tr>
<tr>
<td>Variable</td>
<td>Variable Description</td>
<td>Measure Level</td>
<td>Values</td>
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</tbody>
</table>
| AcaCom4  | Independent teacher rating of this student’s quality of academic work during the FOURTH reporting period of the 2004-2005 School Year (March 11th, 2005 – May 10th, 2005). Teachers answered the question: “How was this student's academic work completion during the regular school day for this reporting period?” Higher ratings indicate higher academic work completion. | Ordinal | 3 - Excellent  
2 - Good  
1 - Poor |
| Ref1     | Number of REFERRALS this student received during the LAST grading period of the 2003-2004 School Year. Programs were instructed to include any referrals received during the regular school day. Neither the referred offense nor the outcome of the referral were recorded. | Ratio | Observed Minimum: 0  
Observed Maximum: 28 |
| Ref2     | Number of REFERRALS this student received during the FIRST grading period of the 2004-2005 School Year. Programs were instructed to include any referrals received during the regular school day. Neither the referred offense nor the outcome of the referral were recorded. | Ratio | Observed Minimum: 0  
Observed Maximum: 21 |
| Ref3     | Number of REFERRALS this student received during the SECOND grading period of the 2004-2005 School Year. Programs were instructed to include any referrals received during the regular school day. Neither the referred offense nor the outcome of the referral were recorded. | Ratio | Observed Minimum: 0  
Observed Maximum: 39 |
| Ref4     | Number of REFERRALS this student received during the THIRD grading period of the 2004-2005 School Year. Programs were instructed to include any referrals received during the regular school day. Neither the referred offense nor the outcome of the referral were recorded. | Ratio | Observed Minimum: 0  
Observed Maximum: 29 |
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<th>Values</th>
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</table>
| Sus1     | Number of regular-school days this student missed due to disciplinary actions (i.e., SUSPENSIONS) during the LAST grading period of the 2003-2004 School Year. Programs were instructed to include any form of disciplinary action that resulted in missed academic classes. Both in-school and out-of-school suspensions are included. | Ratio | Observed Minimum: 0  
Observed Maximum: 40 |
| Sus2     | Number of regular-school days this student missed due to disciplinary actions (i.e., SUSPENSIONS) during the FIRST grading period of the 2004-2005 School Year. Programs were instructed to include any form of disciplinary action that resulted in missed academic classes. Both in-school and out-of-school suspensions are included. | Ratio | Observed Minimum: 0  
Observed Maximum: 23 |
| Sus3     | Number of regular-school days this student missed due to disciplinary actions (i.e., SUSPENSIONS) during the SECOND grading period of the 2004-2005 School Year. Programs were instructed to include any form of disciplinary action that resulted in missed academic classes. Both in-school and out-of-school suspensions were included. | Ratio | Observed Minimum: 0  
Observed Maximum: 31 |
| Sus4     | Number of regular-school days this student missed due to disciplinary actions (i.e., SUSPENSIONS) during the THIRD grading period of the 2004-2005 School Year. Programs were instructed to include any form of disciplinary action that resulted in missed academic classes. Both in-school and out-of-school suspensions were included. | Ratio | Observed Minimum: 0  
Observed Maximum: 21 |
| Nice1    | Independent teacher rating of this student’s ability to get along with other students during the FIRST reporting period of the 2004-2005 School Year (June 1st, 2004 – October 10th, 2004). Teachers answered: “How well did this student getting along with others during the regular school day for this reporting period?” Higher ratings indicate better relationships. | Ordinal | 3 - Excellent  
2 - Good  
1 - Poor |
<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Description</th>
<th>Measure Level</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nice2</td>
<td>Independent teacher rating of this student’s <strong>ability to get along with other students during the SECOND reporting period</strong> of the 2004-2005 School Year (October 11th, 2004 – December 10th, 2004). Teachers answered: “How well did this student getting along with others during the regular school day for this reporting period?” Higher ratings indicate better relationships.</td>
<td>Ordinal</td>
<td>3 - Excellent 2 - Good 1 - Poor</td>
</tr>
<tr>
<td>Nice3</td>
<td>Independent teacher rating of this student’s <strong>ability to get along with other students during the THIRD reporting period</strong> of the 2004-2005 School Year (December 11th, 2004 – March 10th, 2005). Teachers answered: “How well did this student getting along with others during the regular school day for this reporting period?” Higher ratings indicate better relationships.</td>
<td>Ordinal</td>
<td>3 - Excellent 2 - Good 1 - Poor</td>
</tr>
<tr>
<td>Nice4</td>
<td>Independent teacher rating of this student’s <strong>ability to get along with other students during the FOURTH reporting period</strong> of the 2004-2005 School Year (March 11th, 2005 – May 10th, 2005). Teachers answered: “How well did this student getting along with others during the regular school day for this reporting period?” Higher ratings indicate better relationships.</td>
<td>Ordinal</td>
<td>3 - Excellent 2 - Good 1 - Poor</td>
</tr>
</tbody>
</table>
REFERENCES


Smith, D. W., Zhang, J. J., & Brimer, J. (2000). Year 3 evaluation of the after school achievement program.. Houston, TX: University of Houston.


BIOGRAPHICAL SKETCH

Dinh H. Nguyen was born in Vietnam and came to the United States at the age of 17. He graduated from the Florida State University with a B. S. in Education in 1988, a M. S. in Education in 1993, and an Ed. S. in Educational leadership and School Administration in 2000. He also obtained a graduate certificate in Human Resource Development and a graduate certificate in Educational Policy from the Department of Educational Foundations and Policy Studies.

Prior to joining the University of Florida, Dinh was a senior Educational Policy Director for the Florida Department of Education. Dinh also worked with the Florida Department of Education as Program Specialist and Interim State Coordinator in Title I and Migrant Programs. He is currently holding a position with the University of Florida as Director of Policy, Compliance, and Program Development. Dinh’s office is located in Tallahassee.

Dinh resides in Tallahassee, Florida with lovely wife, Nale, and his two precious daughters, Christina and Diana.