

An Exploration of Out of School Time Programs Designed
for Low-Income Elementary Students in the United States

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Abstract

Low-income students in the United States face a number of educational challenges that their middle and high income peers do not face, and often do not achieve to the same extent as middle or high income students. Little progress has been made in the last few decades to eliminate this achievement gap. One model for eliminating this gap is to implement effective out of school time (OST) programs designed for low-income students. Many studies have shown that these programs can produce positive academic and socio-emotional/behavioral outcomes. In this literature review, the findings of fifteen studies are outlined including the effective features of OST programs as well as their positive impact on students' academic and socio-emotional/behavioral outcomes. The literature review shows how OST programs that implement effective features can serve as a model for reducing the achievement gap between low and high income students.

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Chapter I: Introduction

Poverty is a dire issue in the United States. Twenty three percent of children in the United States were living in poverty in 2007, which was twice the rate of many European countries (Darling-Hammond, 2010). Additionally, 30 to 40 percent of American kindergarteners enter school without the necessary skills to succeed because of this high poverty rate (Darling-Hammond, 2010). Students of low socioeconomic status (SES) face many challenges in succeeding in school as compared to students of middle and high SES (Darling-Hammond, 2010; Ream & Parlardy, 2008; Sacks, 2007). In fact, class differences in educational achievement are the most drastic between low and high income children compared to differences in achievement along gender, racial, or ethnic lines (Sacks, 2007). This achievement gap between students of low and middle or high SES has existed for many years, without much progress being made to eliminate this gap (Sacks, 2007). One way to address this gap is through the implementation of effective out of school time (OST) programs. Out of school time (OST) is defined as the time in which students are not in school (Lauer et al., 2006). This includes time before school, after school, and during the summer when children are not normally attending school.

Beginning in the 1990s, researchers began to study effective features of out of school time programs in order to supply low-income students with support and resources that the normal school day may not be able to provide for these students. Lauer et al. (2006) indicated that in 2001, approximately 6 million children participated in some form of OST program. More recently, researchers have begun to explore the role of OST programs in closing the achievement gap. Beckett et al. (2009) asserted “OST programs offer a promising approach to enhancing students’ academic skills and to closing the achievement gap” (p. 5).

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Many schools have implemented OST programs as a way to utilize Title I funds (D'Agostino & Hiestand, 1995). Title I, which is a federally funded program, gives additional funds to local educational agencies (LEAs) and schools that have a high number of children living in low-income households to ensure all students have access to the resources they need to meet demanding academic standards (*Title I, Part A Program*, 2011). State Education Agencies (SEAs) are granted an average of \$244,352,719 in Title I funds to implement OST programs throughout each state (*After School Funding Database*, 2013). LEAs and schools receive sub grants to implement the programs in individual schools. Using Title I funds for OST programs is beneficial because students do not miss normal instruction that they would not receive if they were pulled out of the classroom for Title I services (D'Agostino & Hiestand, 1995).

Additionally, SEAs can apply for the 21st Century Community Learning Centers federal grant, which is a federal grant used to fund OST programs in communities for disadvantaged children throughout the United States (*21st Century Community Learning Centers*, 2012). LEAs and non-profit organizations may then apply for sub grants in order to implement community learning centers for students who attend high poverty or low performing schools as well as provide academic services for low-income students and their families. Twenty first Century Community Learning Centers can provide many different kinds of services including, but not limited to, tutoring, remedial education, arts education, or science and math enrichment (*21st Century Community Learning Centers*, 2012). Both Title I funds and the 21st Century Community Learning Centers grants are being utilized to improve the academic performance of low SES students during OST programs. Using these community resources for OST programs can be beneficial, provided they are producing positive academic and socio-emotional/behavioral results for students. Therefore, it is important for schools and other institutions to understand

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how to implement effective OST programs for low-income students in order to provide these students with meaningful resources that can make a positive difference. To this end, this study explores which features of OST programs can be implemented in order to produce positive academic, social, emotional, and behavioral outcomes in elementary students of low SES and a possible model for reducing the achievement gap between students of low and high SES.

In this paper, a discussion of the educational challenges that students of low SES face is described first, followed by a literature review of studies of OST programs. Next, the results of the literature review are outlined to indicate effective features of OST programs as well as student outcomes. Finally, a discussion follows which outlines the features recommended in the literature, how these programs impacted student outcomes, the study's limitations, areas for further research, and implications for practice regarding OST programs.

Students of low SES face many educational challenges compared to students of middle and high SES (Darling-Hammond, 2010). One challenge is lack of district finances. There are a number of educational inequities that exist within the United States based on socio-economic status. The wealthiest districts in the United States can spend up to ten times more than the poorest districts (Darling-Hammond, 2010). Students of high SES have access to valuable educational resources such as highly educated teachers, a more engaging curriculum, and better instructional materials, while students of low SES do not have the same access to these types of resources (Darling-Hammond, 2010). The effects of educational inequity leads to students of high SES in better positions to succeed because of these high quality resources, while students of low SES are disadvantaged because their districts cannot afford to provide their students with high quality resources. This educational inequity is unjust, and has the potential to perpetuate the cycle of poverty if the unequal distribution of resources to America's students is not improved.

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Darling-Hammond (2010) asserts that lack of social supports for families can negatively affect low-income students' abilities to succeed academically, such as lack of access to food, housing, and health care. Indeed American students living in poverty face many challenges to education that students in other developed countries do not face (Darling-Hammond, 2010). For example,

In other developed countries, schools can focus primarily on providing education, rather than also having to provide breakfasts and lunches, help families find housing and health care, and deal with constant mobility due to evictions, the effects of untreated physical and mental illness, and the large gaps in children's readiness that exist at entry to school. (Darling-Hammond, 2010, p. 33)

With a lack of social supports for families in the United States, schools have the added pressure to support students by helping to meet basic needs such as food and shelter rather than being able to solely focus on education.

Yet another educational challenge facing low SES students is the under representation of low SES students holding higher education degrees. Sacks (2007) discusses the division in the United States education along socioeconomic lines by stating, "educational inequalities along gender, racial, and ethnic lines have significantly diminished. At the same time, educational gaps have widened between students of affluent backgrounds and those of low and modest economic means" (p. 112). Currently, an approximately equal number of women and men receive bachelor's degrees in the United States, and this represents major progress in closing the gap between men and women in receiving advanced degrees (Sacks, 2007). However, the same type of progress has not been made between students of high and low SES. Only 6% of high school graduates from families of the lowest 25% of incomes in the nation receive four year degrees,

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and this statistic has not changed since 1970 (Sacks, 2007). In other words, little progress has been made since the 1970s in promoting students from the nation's most modest economic means to obtain bachelor's degrees. Schools and communities need to recognize the need for more students from the lowest income families to pursue higher education.

Additionally, low SES students are underrepresented in the top academic quartiles across the United States, which could be attributed to the lack of progress in closing the achievement gap between high and low SES students (Wyner, Bridgeland & DiIulio Jr., 2007). For example, only 28% of first grade students in the top academic quartile are from low-income families, while 72% of first grade students in the top academic quartile are from middle or high income families (Wyner, Bridgeland & DiIulio Jr., 2007). Low-income students are not achieving to the same extent as their high income peers throughout their academic careers, even low-income students who are considered high achieving. For example, eight percent of high achieving low-income students drop out or do not complete high school on time, while only four percent of high achieving high income students drop out or do not complete high school on time (Wyner, Bridgeland & DiIulio Jr., 2007). This research suggests that low-income students are not supplied with the necessary resources that high or middle income students are receiving.

One such resource that high SES students often receive is parental involvement (Ream & Palardy, 2008). Parents of the high SES are sometimes better equipped to help their children navigate the school system, and can have an advantage in promoting school policies that will benefit their children in comparison to parents of low SES (Ream & Palardy, 2008). In addition, parents of high SES may have more social connections in a school system to other parents, teachers, and administrators, leading to these parents obtaining more of an influence over how the school is run, and which policies are implemented (Ream & Palardy, 2008). In essence,

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parents of high SES are more likely than low SES parents to pass down power to their children in school settings, which can be to the detriment of families of low SES who may not have the same kind of power within a school setting (Ream & Palardy, 2008). This can favor economically advantaged students in school settings, while putting low-income students at a disadvantage.

OST programs using evidence based practices are a possible solution for reducing the achievement gap. While these programs may not be able to completely solve the negative educational effects of childhood poverty and inequitable education in the United States, they may be able to provide low-income students and their families with the academic, community, and socio-emotional resources that students need to succeed in school. Educators need to begin taking steps to closing the achievement gap that exists in the United States. Implementing OST programs with evidence based practices could serve as one model for progressing toward a more equitable education for each child in the United States, regardless of the child's household income.

As a way to address the achievement gap exists that between students of low and high SES, researchers began exploring how effective OST programs can provide low SES students with the necessary resources to perform at the same achievement level as their high SES peers. In the next chapter, a review the literature follows exploring the features of academic based OST programs for elementary students that are most beneficial for students' academic performance and socio-emotional/behavioral development. I will examine the evaluations of OST programs that have been implemented in schools and communities. I will also outline which features of OST programs are academically and/or socially, emotionally, and behaviorally beneficial for low-income elementary aged students in the United States, and make a case for implementing

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more of these programs across the United States. This research is needed to establish a model for possibly reducing the achievement gap that exists between low-income and high income elementary students in the United States. With an unequal distribution of educational resources, a high percentage of children living in poverty, and vast differences in educational performance between high and low-income children, a model is warranted for providing students of all income levels with an equitable education.

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Chapter II: Methodology

Scope of the Literature Search

This exploration is a literature review of journal articles and practice guides that discuss features of effective academic-based OST programs for low-income elementary students in the United States. Through the survey of the literature, I defined features of effective OST programs for low-income elementary students throughout the United States, and provide insight into how these programs can promote both academic and socio-emotional/behavioral development in low SES students. In order to find these articles, I used JSTOR, the UNC Library Homepage search engine, Google Scholar, and EBSCO Host to search the Education Full Text Database and Retrospective Index.

I used the following search terms to find the articles: “out of school time programs”, “effective out of school time programs”, “after school program low-income”, “summer school program elementary”, “low-income after school”, “after school program quality”, “after-school tutoring” and “after school program elementary”. I also examined the bibliographies of the literature reviews and practice guides that I reviewed in order to find additional articles. I included journal articles and practice guides that were published between 1990 and 2013.

Criteria for Inclusion or Exclusion

After finding the articles, I determined which articles would be included in the literature review using the following criteria. I included other literature reviews, practice guides composed by educational experts, and also articles that examined the academic and/or socio-emotional/behavioral effects of particular OST programs. As the journal articles used a variety of methods to analyze student performance, I included all methodologies. I included articles that discussed academic outcomes or academic and socio-emotional/behavioral outcomes in

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elementary students. The articles had to describe either academic outcomes or socio-emotional/behavioral outcomes as a result of the program (either positive, negative, or neutral) to be included.

I define “academic-based programs” as those which had a goal of improving student performance in math and/or literacy, although these programs also had social, artistic, or athletic goals in order to promote socio-emotional/behavioral growth in students. I defined “low-income” in a similar way that the authors of any given article defined “low-income”. If the authors considered the students who participated in the program to be low-income, I trusted their judgment that the students were indeed of low SES. Definitions of “low-income” did differ from article to article. Many of the authors defined “low-income” as students who received free or reduced-price lunches, while others defined “low-income” as the student’s family receiving a yearly income at or below the federal poverty line. I define “elementary students” as those who were in kindergarten through sixth grade when they participated in the program. It is important to note that some of the studies which I examined may have included students of other grade levels. However, elementary students had to participate in the OST program under review, or the article had to make recommendations that would benefit elementary students in order to be included in my literature review.

I included comparative studies between control groups which did not attend OST programs and treatment groups which did attend OST programs to demonstrate how these programs can produce positive academic and/or socio-emotional/behavioral gains in low-income students who attend compared to students who do not attend OST programs. Authors of these studies indicated which features they believed produced positive outcomes in students. I also chose to include practice guides and literature reviews to demonstrate which features experts and

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scholars believe to be critical components of OST programs. The authors' statements are informed by extensive research, which indicates that these recommendations are likely to produce positive student outcomes within OST programs.

I excluded articles that examined OST programs that were socially, artistically, or athletically based because I wanted to explore how academic-based programs could affect students' academic outcomes. While it is important for OST programs to have socio-emotional outcomes, this study was focused on how OST programs can promote academic outcomes for low-income students in order to close the achievement gap between students of high and low SES. I excluded articles that studied programs that served only high school students, middle school students, or preschool students because I was interested in how OST programs can promote positive outcomes in elementary students. Finally, I excluded articles published outside of the United States because the achievement gap between high and low SES students is an issue unique to the United States (Darling-Hammond, 2007). This search yielded a total of fifteen articles. Twelve of these articles review effective OST programs, one article is a literature review, and two articles are practice guides.

Analysis Plan

In reviewing the literature, I outlined effective features of OST programs designed for low income elementary students. If two or more studies either examined a program that included a particular feature and the program produced a positive outcome in some area, or if authors recommended that a particular feature be included in the design of the program, I considered the feature to be evidence based. After finding each evidence-based feature, I composed a table (see Table A) to organize the data. This table lists each study on the left hand column. Across the top, I titled each column with the features: "Age Group", "Duration", "Quality Instruction",

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“Summer School Program”, “After School Program”, “Student Staff Ratio”, “Qualified Instructors”, “Used Community Resources”, “Supervisor”, “Social Component”, “Progress Monitoring”, “Parent Involvement”, “Title I Funding”, “District Funding”, “OST Program-School Collaboration”, and “Attendance Monitoring”. I recorded how many articles either examined OST programs that included the particular feature or recommended that a particular feature be implemented to produce positive outcomes in students. I constructed a separate table (see Table B) that listed each study in the left column, and then titled each column “Literacy Gain”, “Mathematics Gain”, and “Socio-emotional/Behavioral Gain” in order to examine how OST programs can produce positive academic and/or socio-emotional/behavioral outcomes in low-income students. I then analyzed how many of the studies that examined particular OST programs found that the program produced positive literacy, mathematics, and/or socio-emotional/behavioral outcomes in students.

I constructed these categories in order to determine which features were recommended most or least often by researchers. From this table, I give suggestions about which features of OST programs research are shown to be most effective in promoting academic or academic and socio-emotional/behavioral outcomes for low-income elementary aged students. This allows me to determine which features of OST programs are based in research, and most likely to promote positive student outcomes. Further, implementers and designers of OST programs can review my results to determine which features of OST programs are research-based, and likely to produce positive student outcomes in terms of students’ academic or socio-emotional/behavioral development.

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Chapter III: Literature Review

Beginning in the 1990s and continuing into the 2000s, a number of studies were conducted in the United States to determine effective features of academic based OST programs designed for low-income elementary students. These studies outline effective features of OST programs that lead to positive student outcomes in terms of their academic and socio-emotional/behavioral development. Many of the studies analyzed assessments, reports from teachers, and other methods to examine how certain features of programs lead to an increase in positive academic and/or socio-emotional/behavioral outcomes. Some studies collected student and parent comments about the programs as well as observations of student behavior to measure gains in socio-emotional/behavioral development (Borman et al., 2009). Other studies examined the difference in achievement between a treatment group that attended an OST program and a control group that did not attend the program (Bergin et al., 1992; Black et al., 2008; Borman et al., 2009; D'Agostino & Hiestand, 1995; Luftig, 2003; Morris, Shaw & Perney, 1990; Schacter & Jo, 2005). Based on the results of standardized assessments such as the SAT 10 and program implemented assessments such as parent and student surveys, researchers indicated which features of programs produced positive results for students.

Morris, Shaw and Perney (1990) conducted an evaluation study of how an after school program could benefit low achieving readers in second and third grade in a low-income neighborhood of Chicago during the 1986-1987 and 1987-1988 school years. Participants were drawn from two classrooms in the neighborhood school. At the beginning of each year, teachers identified the bottom one third of readers in their classes. After these students were identified, reading specialists administered a pretest that assessed word recognition, spelling ability at the first or second grade level, and a read aloud of a basal passage. After this assessment, the

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students were ranked in terms of their reading ability in relation to the results of the assessment (Morris, Shaw & Perney, 1990). Then, researchers started from bottom of the list and assigned one student to the after school program, and then the next student to the non-tutored group until they had assigned each student to either the treatment or control group. The purpose of this assignment was to ensure that both the treatment and control group had an approximately equal number of students at different reading levels (Morris, Shaw & Perney 1990). In the first year of the study, 17 students participated in each group, and 13 students participated in each group in the second year of the study (Morris, Shaw & Perney, 1990).

Each student in the treatment group received one-on-one tutoring twice per week for one hour after school in a community center (Morris, Shaw & Perney, 1990). These students received fifty hours of extra reading instruction each year. The program hired two supervisors who were each responsible for ten tutor-student pairs, and were paid \$3000 salary for the year (Morris, Shaw & Perney, 1990). The supervisor recruited volunteer tutors, trained tutors to teach reading skills and promote reading interest, monitored lessons, and monitored the growth of participating students. One of the main program goals was to spark an interest in reading for students (Morris, Shaw & Perney, 1990). To accomplish this, students participated in reading at their instructional level, word study, wrote short stories, read easy contextual stories, and listened to tutor read alouds during each tutoring session. Students in the control group only received their regular classroom instruction (Morris, Shaw & Perney 1990).

Students in both groups were assessed again at the end of each school year in terms of their word recognition, basal word recognition, basal passage reading, and spelling ability (Morris, Shaw & Perney, 1990). At the end of both school years in which the study was conducted, the tutored students outperformed the control group on each measure of reading

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achievement including the reading of a basal passage, spelling, and word recognition (Morris, Shaw & Perney, 1990). In the first year of the study, the tutored group outperformed the control group on the three measures of achievement (basal word recognition, spelling, and basal passage reading), which was significant at the .02 level (Morris, Shaw & Perney, 1990). During the second year, the experimental group outperformed the control group in basal passage reading and spelling at the significance level of .02 (Morris, Shaw & Perney, 1990).

Overall, the tutored group made an average of over one year of reading progress in both years that the study was conducted (Morris, Shaw & Penery, 1990). However, there was variation in levels of achievement within the experimental group. For example, one third, (n=6) of the tutored group was on grade level by the end of the first year. Thirty percent of students (n=5) gained one year in reading. Less than forty percent of the tutored group (n=6) progressed in their reading development, but did not make a full year's progress (Morris, Shaw & Perney, 1990). Nonetheless, each student who was tutored made gains in reading over the course of the year, and as a whole group, the tutored group achieved at higher levels in reading than the control group. With the help of dedicated community volunteers, this program made a significant impact on students with only a \$6000 budget each year, which was used for payroll purposes (Morris, Shaw & Perney, 1990).

Bergin, Hudson, Chryst, and Resetar (1992) conducted a study in which they examined the Hilltop Emergent Literacy Project (HELP), a program aimed to provide culturally sensitive instruction for students. Students attended the HELP program from 3:30 PM to 6 PM Monday through Friday in an apartment complex. All of these students were from low-income families, and the majority of students were African-American (Bergen et al., 1992). This study consisted of two groups (n=12) of kindergarteners from an urban area near the University of Toledo.

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Twelve kindergarteners attended the HELP program, while the control group of twelve kindergarteners did not attend the program. HELP maintained an approximate student staff ratio of five to one. Attendance fluctuated between 18 to 23 students, with five to seven instructors present each day of the program. Furthermore, additional students attended HELP, but were not part of the research study (Bergen et al., 1992)

The instructors at HELP incorporated aspects of African-American culture into their curriculum because the majority of HELP's students were African-American (Bergen et al., 1992). For example, instructors included rhythmic movement, singing, and encouraged expressive individualism within their activities (Bergen et al., 1992). Instructors wanted students to have control and choice in their academic pursuits. Therefore, students were allowed to make choices about the activities in which they would participate on a daily basis. The authors argued these features were not always present in the kindergarteners' classrooms, which they believed to be important components of effective instruction. Additionally, students were encouraged to pursue their own interests while challenging themselves academically. Furthermore, instructors sought to build a community, or "social connectedness", within their classrooms (p. 207). In order to create this community, students and teachers would work collaboratively on activities. They found that students were often in need of attention and compassion, and that HELP provided students with meaningful relationships between their peers and staff members.

The results of the study indicated that the HELP program was successful after the 16 month course (Bergen et al., 1992). It is important to note that students of the HELP program did not make significant gains over the control group on literacy tests after four months. However, they did outperform the control group on the Metropolitan Achievement Test (MAT) after 16 months of participation in the program. The MAT assesses literacy skills such as word

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recognition, reading comprehension, and vocabulary development, and also mathematics skills such as problem solving ability. In fact, the group of kindergarteners surpassed national averages in some areas by the first grade, while the control group remained below national averages (Bergen et al., 1992). The results indicate that in order for OST programs to improve student achievement, students need to attend these programs over a long period of time. Simply attending a program for four months will not make a difference, but attending a program consistently for more than a year can improve student achievement.

Qualitative results showed that students became excited about the learning process. Staff reported that students would arrive at 3:00, looking in the windows waiting for instruction to begin. One student stated, “At HELP, the teachers answer your questions” (p. 214), indicating that instructors in this OST program were attentive to the needs of their students. Based on the accomplishments, the authors argued that “any location that has a college or university, Chapter/Title I funds, concerned citizens, or even a high school could conceivably implement a program similar to HELP” (p. 216). Even if a school was not receiving Title I funds, this type of program could be implemented with the help of dedicated volunteers and educators committed to eradicating the achievement gap.

Posner and Vandell (1994) researched how four different types of after school activities had an effect on low-income students’ academic performance and academic achievement. They compared four groups of students participating in four different types of activities after school. One group (n=15) cared for themselves after school, another group (n=121) returned to their mothers for care, a third group (n=45) were supervised by adults in informal activities such as playing outside with peers, and the final group (n=34) participated in formal OST programs mostly taught by certified teachers. Of the 216 students who participated in the study,

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approximately 50% were black and 60% received free or reduced priced lunch (Posner & Vandell, 1994). The students who participated in formal after school activities attended eight different programs. Five of these programs were funded by the Recreation and Community Services Department of the school district, two of them were funded by nonprofit organizations, and one was held at the children's school (Posner & Vandell, 1994). Two of the OST programs were academically based with remedial, enrichment and recreational activities. The remaining six programs provided students with assisted homework time and recreational activities (Posner & Vandell, 1994). Students who participated in formal after school activities were more likely than the other groups to have better grades, positive peer relationships, better behavior while in school (as rated by their teachers), and better emotional adjustment (Posner & Vandell, 1994).

The children in the OST programs were given more opportunities for learning experiences than the other groups. For example, students who participated in formal after school programs participated in enrichment activities, art projects, and plays, while students who did not participate in these programs did not experience these types of activities (Posner & Vandell, 1994). Furthermore, students who participated in direct one-on-one instruction with teachers had greater academic gains (Posner & Vandell, 1994). This study emphasized that low-income students who participate in academic-based OST programs may benefit more, both academically and socio-emotionally, than if they participate in maternal care, self-care, or supervised informal activities. This study also indicates that one-on-one instruction may increase students' academic performance, and may be an important feature of OST programs to consider if it is conceivable within a specific program (Posner & Vandell, 1994).

D'Agostino and Hiestand (1995) conducted a two-year study in Chicago (1991; 1992) on the effectiveness of summer school programs as a means of providing Title I services to low-

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income elementary students. They surveyed 90 fourth grade summer school classrooms taught by certified teachers in 68 Chicago Public Schools. The treatment group (n=1006) participated in the summer school program, while the control group (n=490) did not participate in the program (D'Agostino & Hiestand, 1995). Instead, the control group received Title I services during the school year. These services included pull out services, in which students would be pulled out of the classroom to receive specialized instruction in either basic skills remediation or higher order thinking skills. The researchers hypothesized that summer school would be more beneficial because students typically lose knowledge over the summer. They divided the summer school classrooms into three groups depending on the amount of time spent on authentic instruction, emphasizing building higher order thinking skills and providing meaningful learning experiences. The classrooms were labeled as "high", "moderate", or "low" in terms of how much time was spent providing meaningful instruction for each child (D'Agostino & Hiestand, 1995).

The results of this study indicated that the group of students who attended "high" classrooms made slightly larger gains in math as compared to the control group that had received Title I services during the school year (D'Agostino & Hiestand, 1995). However, in the area of reading, the control group who received Title I services during the school year outperformed the three experimental groups who attended summer school (D'Agostino & Hiestand, 1995). Students who received summer school with moderate or low amounts of authentic instruction fell behind their peers who received services during the school year. These findings indicate that it would have been more beneficial for students in the "low" or "moderate" classrooms to receive pull-out services during the school year or authentic instruction in summer school (D'Agostino & Hiestand, 1995). Additionally, researchers found that high quality instruction was significantly and positively related to student gains in mathematics and reading ($p < .05$) (D'Agostino &

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Hiestand, 1995). These results indicate that summer school programs can be beneficial for students to increase their math skills, although it is essential that summer school programs provide meaningful instruction for students to make these gains. Specifically, instructors should focus on building higher order thinking skills by encouraging creative thinking, collaborative work among students, and developing problem solving strategies (D'Agostino & Hiestand, 1995).

Foley and Eddins (2001) conducted a study in New York in which they looked at the effectiveness of 100 *Virtual Y* programs throughout the state during the 1999-2000 school year. *Virtual Y* programs are academically based after school programs funded by the YMCA (Foley & Eddins, 2001). The *Virtual Y* programs served students who were considered to be at-risk (Foley & Eddins, 2001). The researchers examined a large sample (n=1,978) of elementary students who attended the program for at least 49 days (or ten weeks), and compared this group to a control group that did not attend the program in terms of their reading achievement, math achievement, and school attendance. Of the students who participated in the study, 888 were female, 601 were African-American, 721 were Hispanic, 1906 received free or reduced priced lunches, 132 recently immigrated to the United States, and 232 were English language learners (Foley & Eddins, 2001).

Foley and Eddins (2001) found six features of the *Virtual Y* programs that correlated to better student achievement on The New York State (English Language Arts/Mathematics) Assessment, the Board of Education's (CTB-Reading/Math) City Wide Test, and better school attendance. These features included hiring a staff with college degrees, sustaining a 10:1 student staff ratio, employing staff members who were under the age of 30, hiring Board of Education teachers, having a low program coordinator turnover rate, and focusing on child development

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practices (Foley & Eddins, 2001). They also found that the *Virtual Y* programs had a positive effect at the significant level on third and fourth grade students' school attendance, ($p \leq .05$) and ($p \leq .01$) respectively (Foley & Eddins, 2001). The average school attendance of the group of third graders who attended the program was 94.39 days, while the average school attendance of the fourth grade treatment group was 94.93 days. In contrast, the control group of third graders attended an average of 93.88 days, and the control group of fourth graders attended an average of 94.22 days. The treatment group's school attendance was two standard errors above the mean attendance of the control group who did not attend the program (Foley & Eddins, 2001).

In terms of reading achievement, the treatment group of fourth grade students performed better than the control group on the two standardized assessments, but not at a significant level (Foley & Eddins, 2001). The average scale score of the treatment group and the control group on the reading portion of the assessments was 643.50 and 643.24, respectively (Foley & Eddins, 2001). However, the fourth grade students who attended the *Virtual Y* program did make statistically significant gains on the mathematics portion of assessments ($p \leq .01$) (Foley & Eddins, 2001). The average scale score of the treatment group was 640.30, while the average scale score of the control group was 637.31 (Foley & Eddins, 2001). The treatment group average scale score was two standard deviations above the control group, which is a statistically significant difference (Foley & Eddins, 2001). However, the authors note that students who performed well on these assessments at the beginning of the school year also performed well at on the assessments at the end of the year (Foley & Eddins, 2001), which may indicate that the program was not as effective in improving high achieving students' performance. However, this study does indicate several important features of OST programs such as hiring a well-educated

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staff, maintaining small groups within OST programs, and focusing on child development practices that can produce student outcomes in terms of behavior and mathematics achievement.

Luftig (2003) conducted a study in which a group of students ($n=209$) going into grades one through four were identified as being at risk in reading achievement, and were either assigned to a school based summer reading program, a private for-profit summer reading program, or received no treatment. This study took place in one school, which received Title I funds, and in which 90% of students received free or reduced-price lunch (Luftig, 2003). Of the students who participated in this study, $n=93$ were male and $n=116$ were female (Luftig, 2003). Luftig (2003) divided students into two groups. One group was comprised of students going into the first grade, and the second group consisted of students going into grades two through four.

In the first grade group, ($n=36$), 20 students did not receive any treatment and 16 students attended a district-funded school based summer reading program. These students were given the Success Reading Test as a pre and post-test. This test assesses students' phonological awareness, letter identification skills, storytelling, and reading comprehension. The second group, comprised of students going into grades two through four, were divided into three groups. One group ($n=34$) attended the school based summer reading program, one group ($n=33$) attended the private summer reading program, and one group ($n=58$) received no treatment (Luftig, 2003). These students were given the Gates McGinitie Reading Test as a pre and post-test. This test assesses vocabulary development and comprehension skills (Luftig, 2003). In the school based summer reading program, students attended a half day reading program for 19 days. Class sizes were limited to ten students to one full time teacher. The instruction emphasized phonics and word study and students received one-on-one instruction. Students participated in the private summer reading program three times per week for two to three hours (Luftig, 2003).

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The first grade group who attended the school based program made significant gains on the Summer Success Reading Test over the control group who did not receive summer school instruction. The treatment group made an average of 8% growth on the assessment, while the control group declined an average of 1.5% to 1.6% on the assessment (Luftig, 2003). The students in grades second through fourth who participated in the district-funded school based program gained an average of 3.6 months in reading achievement, with students in second grade making an average of 6.5 months of growth, students in third grade making an average of 3.2 months of growth, and the students in fourth grade making an average of one month of growth (Luftig, 2003). The students in grades two through four who participated in the private summer reading program gained an average of 3.2 months in reading achievement, with students in second grade making an average of two months of growth, students in third grade making an average of 2.8 months of growth, and the students in fourth grade making an average of 5 months of growth (Luftig, 2003). The students in second through fourth grade who received no treatment lost an average of -.7 months in reading achievement, with students in second grade declining an average of -2.1 months. The students in third and fourth grade did not show any growth or decline (Luftig, 2003).

The students who participated in both the private and school based reading programs made very similar gains in reading achievement over the summer (Luftig, 2003). Both of these groups outperformed the groups who received no treatment. However, students who participated in the school based program only received an average of seven hours of instruction, while the students who participated in the private reading program received an average of 32 hours of instruction (Luftig, 2003). This study indicates that providing a school-based summer school

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program can be as effective as, or even more effective, than private for profit tutoring sessions (Luftig, 2003).

Schacter and Jo (2005) also conducted a study to examine the benefits of a summer school program. This study examined a seven week summer day camp that incorporated a research-based literacy curriculum (Schacter & Jo, 2005). These researchers sought to create an effective summer school program for low-income students to prevent the loss of reading skills over the summer that students had gained in the first grade. This study consisted of one group of students (n=162) going into the second grade from three elementary schools in Los Angeles. Each student who participated in the study was considered low-income as each student was eligible for free or reduced lunch (Schacter & Jo, 2005). Of these students, one group (n=97) identified as African-American, and one group (n=65) identified as Hispanic. The students were divided into a control group (n=90) who did not attend the camp, and a treatment group (n=72) who attended the program (Schacter & Jo, 2005).

Students who attended the program participated in two hours of literacy instruction where instructors emphasized decoding, vocabulary development, fluency, and comprehension (Schacter & Jo, 2005). The program lasted two hours (8am to 10am), and then students participated in free play, sports, and arts and crafts activities from 10am to 5pm (Schacter & Jo, 2005). The implementers sought to strike a balance between academic based activities and recreation to promote free play and creativity (Schacter & Jo, 2005). Class sizes were limited to 15 students, all teachers had at least five years of teaching experience, and teachers used the Open Court Series, a research-based curriculum, to guide their instruction. The Open Court Series curriculum emphasizes phonics, phonemic awareness, vocabulary development, reading fluency, and reading comprehension (Schacter & Jo, 2005).

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In order to compare the control and treatment groups, researchers used the Gates MacGinitie Word Decoding Levels 1 and 2 Form S, which is a standardized assessment used to assess the reading skills of students (Schacter & Jo, 2005). The two groups of students were assessed directly after the program ended, and then three months and nine months after the program ended. Directly after the program ended, the treatment group scored 41% higher than the control group in comprehension skills (Schacter & Jo, 2005). After three months, the treatment group maintained a 39% advantage, and an 18% advantage after nine months (Schacter & Jo, 2005). In terms of decoding skills, the treatment group scored 33% higher directly after the program, then 22% higher after three months, and then did not score higher than the control group after nine months (Schacter & Jo, 2005).

Schacter and Jo (2005) proposed three hypotheses to explain this decrease over time. First, teachers may have re-taught decoding skills, but not comprehension skills. This would explain the control group's increased decoding ability. Additionally, this would explain why the treatment group decreased in terms of their comprehension skills. Another explanation for the decrease is that under qualified teachers typically teach in low-income areas, who may lack the skills to differentiate instruction to meet the needs of all students (Schacter & Jo, 2005). A third explanation for the decrease is the overall school environment, which does not require academic rigor, parental involvement, or supply students with engaging learning experiences (Schacter & Jo, 2005). Therefore, the benefits of this program decreased as time progressed, although the treatment group did maintain an advantage in comprehension skills at the end of second grade over the control group. This study indicates that summer programs that implement a research-based curriculum, hire a well-credentialed staff, and provide opportunities for structured learning and free play can produce positive gains in student reading achievement (Schacter & Jo, 2005).

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Baker, Rieg and Clendaniel (2006) examined one after school program designed to promote mathematics achievement. In this program, a rural school district partnered with a university to create an after school program for students in the third through sixth grade (Baker, Rieg & Clendaniel, 2006). The program coordinator recruited elementary education majors from a university to tutor students in the program. Some students were volunteers, and others used the tutoring experience to complete requirements for their mathematics methods coursework (Baker, Rieg & Clendaniel, 2006). Classroom teachers in this district recommended students who were struggling in math to attend the program. Tutors were assigned to one or two students, who they worked with for 90 minutes once a week for the course of ten weeks in the fall and then ten weeks in the spring. Classroom teachers provided instructional materials for their students during the tutoring session. Additionally, supervising teachers circulated during the sessions to support tutors and students as necessary (Baker, Rieg & Clendaniel, 2006). In the 90 minute session, students were allowed 15 minutes for snack, 30 to 45 minutes to complete homework, time for structured activities that were compiled by their regular classroom teacher, and then the remainder of the time was spent playing computer or board games that related to math concepts, but were unstructured in nature (Baker, Rieg & Clendaniel).

Program implementers administered either the Brigance Math Inventory or the Scott Foresman Math Text Inventory at the beginning and end of the year, in addition to the Aiken's Attitude Survey in order to measure students' attitudes toward math (Baker, Rieg & Clendaniel, 2006). During the course of the 2004-2005 school year, 86% of students improved their achievement on the Brigance Math Inventory or Scott Foresman Inventory, 11% decreased in achievement, and 5% remained at the same achievement level over the course of the year (Baker, Rieg & Clendaniel, 2006). Over the course of the school year, 53% of students improved their

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score on the Aiken's Attitude Survey. Baker, Rieg & Clendaniel (2006) state that pairing elementary students with college students was an effective model for producing positive results. Also, an added benefit to this model is that elementary education majors received valuable experiences related to their course of study.

Baker, Rieg, and Clendaniel (2006) identified several features which they believe contributed to the success of the after school program. First, this program had a coordinator who was in charge of training and supporting tutors, preparing materials, and coordinating between the university, the district, and tutors. The researchers also recommended implementing a 2:1 child-tutor ratio to ensure that each child was receiving adequate attention. Baker, Rieg and Clendaniel (2006) also indicated that it was beneficial that college students' participation in the program fulfilled university requirements. This program received strong support from the district, which the researchers also indicated as an important component of the program. Furthermore, all participants in the program made at least a ten week commitment to the program, which enabled the program to actually produce desired outcomes for students. Finally, keeping the students with the same tutor was an important feature of the program because students and tutors created bonds that supported student learning (Baker, Rieg, & Clendaniel, 2006).

Mahoney, Parente, and Lord (2007) examined elementary after school programs and the relationship between student engagement within these programs and student performance. These researchers examined a group of students (n=141), of which 61% were at or below the poverty threshold, and 30% of students were between 101% and 175% of the poverty threshold (Mahoney, Parente & Lord, 2007). Thirty nine percent of the students identified as Hispanic, 44% identified as African-American, and 17% of students identified as another race or ethnicity

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(Mahoney, Parente & Lord, 2007). They defined engagement as “active participation- psychologically and behaviorally- in the central activities of the central environment” (p. 386). Unlike the *Virtual Y* study, this group of researchers did not focus on how staffing and student staff ratios affected student performance, instead focusing on the program content itself. Quality program content included social exchange among students, drawing on students’ existing knowledge to inform instruction, and the use of interactive materials (Mahoney, Parente & Lord, 2007).

Findings show that engaging programs provided opportunities for students to build on important skills and encouraged mastery of these skills (Mahoney, Parente & Lord, 2007). Additionally, they found it was beneficial for programs to be structured and provide specific routines for students. They found programs to be more effective when activities complemented rather than extended the school day. For example, providing students with time to work on homework was not found to be engaging nor beneficial, but enrichment opportunities such as discussions or small group activities were found to be effective instructional strategies (Mahoney, Parente & Lord, 2007). Positive social relationships were also found to be beneficial for fostering a positive learning environment for the students. Researchers found that programs that provided more engaging experiences was positively and significantly correlated with teachers reporting students with higher social competence ($p < .01$) (Mahoney, Parente & Lord, 2007). In other words, students who attended programs with a curriculum focused on skill building and mastery had positive social outcomes. Researchers also found that students who attended more engaging programs were significantly more likely to be rated by teachers as being more intrinsically motivated to learn during the school day. However, the researchers did not find the same positive correlation with school grades, stating that “the variance component for

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the Level 2 residuals was not significant” (p. 395). Although more engaging programs did not necessarily correlate with better student grades, these programs did increase student motivation and social competence. Therefore, findings indicate that designing OST programs that provide meaningful learning experiences, positive social environments, and an emphasis on skill building and mastery can produce improved social skills and can foster intrinsic motivation within students that attend these programs.

Black, Doolittle, Zhu, and Unterman (2008) conducted a study in which they compared the effects of enhanced instruction in after school programs compared to after school programs that did not implement enhanced instruction, but rather used the program time for students to complete homework. Enhanced instruction was defined as using a research-based curriculum (Black et al., 2008). Researchers designed enhanced programs to include certified teachers as instructors, a maximum ratio of ten students to one instructor, 45 minutes of enhanced instruction each day after school, closely monitoring attendance, and training, support, and paid preparation time for instructors (Black et al., 2008). This study included 50 programs that used either a research based mathematics or literacy curriculum across 13 states. Twenty five programs used the Harcourt Publishers math curriculum, which emphasizes hands-on activities and projects, and builds math fluency (Black et al., 2008). Twenty five of the programs used the Success for All literacy curriculum which emphasizes key components of reading as outlined by the National Reading Panel, cooperative learning, and frequent progress monitoring (Black et al., 2008).

Participants were in second through fifth grade, and 78% of the students participating in the study received free or reduced-price lunches (Black et al., 2008). They examined the effects of the enhanced instruction programs compared to students who attended regular after school programs which did not follow a specified curriculum. One group of students (n=1,961) were

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tested at the beginning and end of the year in terms of their math achievement and participated in the enhanced math programs, and one group of students (n=1,828) were tested at the beginning and end of the year in terms of their literacy achievement. Black et al. (2008) used the Stanford Achievement Test, 10th edition (SAT 10) to test reading and math achievement. For children in the second and third grade participating in the literacy programs, the researchers also administered the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) to measure fluency. Researchers also examined the effects of the programs using research based curriculum on measures of student engagement, behavior in school, and homework completion compared to those students who did not participate in the program.

After the first year of implementation of the math program, it was found that the students who participated in the math programs using the Harcourt Publishers curriculum made an average of 8.5% more growth over the school year on the SAT 10 compared to the group of students who participated in the regular after school programs (Black et al., 2008). Students in the experimental group received 30% more hours of math instruction compared to the control group. Instructors in the programs that used the Harcourt Publishers curriculum also indicated that the curricular activities were easy to implement. However, students who attended programs using the Harcourt Publishers curriculum did not make statistically significant gains in the three behavioral measures of student engagement, behavior, or homework completion. Researchers note that although these students did not make statistically significant gains in these areas, the after school program did not negatively affect their behavior during the regular school day (Black et al., 2008).

After the first year of implementation of the enhanced literacy instruction program, it was found that students who participated in the programs using the Success for All curriculum did

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not make statistically significant gains on the SAT 10 over the control group, although they received 20% more instruction in reading compared to the control group (Black et al., 2008). Instructors indicated that the curriculum was difficult to implement, and that it was challenging to follow the prescribed curriculum pace. Similar to the students who participated in the enhanced math instruction programs, these students did not make statistically significant gains in the three behavioral measures. However, the programs did not have any harmful effects on behavior (Black et al., 2008). Therefore, this study indicates that after school programs using research based curriculum can produce statistically significant gains in student math gains, but neither positive nor negative effects on student literacy or behavioral development.

Borman, Goetz, and Dowling (2009) conducted a study of the effectiveness of a literacy-based summer school program for low-income struggling kindergarteners. They compared results of one group of treatment students (n=93) who attended the six week program and one group of control students (n=35) who did not attend the program. Students were selected from four high poverty schools in Baltimore, Maryland. Of the 128 students who participated in the study, 92 students identified as African-American, 15 students identified as white, and 12 identified as another race or ethnicity (Borman, Goetz, & Dowling, 2009). They used the Developmental Reading Assessment and the Word List A assessment to compare the academic improvement of the two groups of students. Both groups were given each assessment at the beginning and end of the summer.

This program was funded by the 21st Century Community Learning Center grant, and was focused on reading acceleration (Borman, Goetz, & Dowling, 2009). Students attended the program for a full day, five days per week, for six weeks and participated in a number of literacy activities including read alouds, writing activities, and arts and science activities (Borman, Goetz

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& Dowling, 2009). The program limited each class to ten students with one certified teacher and two college students (Borman, Goetz, & Dowling, 2009). Students attended weekly field trips, were provided with breakfast, and were allowed a 30 minute recess period each day. A community artist also helped design the curriculum in order to implement arts into the literacy curriculum (Boman, Goetz, & Dowling, 2009).

The results of this study indicated that the treatment group made statistically significant gains over the control group on the Developmental Reading Assessment and the Word List A assessment (Borman, Goetz, & Dowling, 2009). The covariate adjusted treatment effect was 1.71 for the treatment group on the Word List A assessment, and 1.55 for the Developmental Reading Assessment, which both had a *p*-value at the .05 significance level (Borman, Goetz & Dowling, 2009). Furthermore, parents and students indicated great satisfaction with the program. Both students and parents filled out surveys at the end of the summer about their experience in the program, and the survey results were very positive. For example, 88% of students indicated that “I am a good reader”, and 90% indicated that “I learned a lot this summer”, which indicates positive self-esteem and attitude toward learning (p. 145). Furthermore, 97% of parents indicated that “I felt informed about my child’s learning and summer progress,” and 94% indicated that “My child seems more self-confident” (p. 146). This indicates that this program increased levels of self-esteem in the children it served, and also implemented family involvement by keeping parents well-informed of their child’s progress. This summer program had positive results in terms of academic and socio-emotional outcomes because of a well-designed program with curriculum integration, low student to staff ratio, parent involvement, and supportive relationships among parents, students, and instructors.

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While some authors research OST programs, other researchers have reviewed studies of OST programs in order to make informed decisions about the important components of effective OST programs. Halpern (1999) published a study discussing a number of challenges to implementing quality features in OST programs. Through discussing the challenges of OST programs, Halpern (1999) points out which features of programs need particular attention to provide students with positive outcomes. Halpern (1999) examined Making the Most of Out of School Time (MOST) in this article, which was a wide range of academically based OST programs that took place in low-income areas in Boston, Chicago, and Seattle. Based on his examination of MOST, Halpern (1999) found the following challenges: insufficient staff, inadequate facilities, and limited funds. Each challenge will be discussed in the following section.

Being able to demonstrate the purpose of OST programs, having adequate space, keeping programs small, pooling community resources, and providing sufficient staff support are features that can support academic and socio-emotional development for students in OST programs (Halpern, 1999). The size of a facility in which OST programs take place is a very important factor in determining how many children can be accommodated by the program (Halpern, 1999). Size also determines the types of activities in which the children can participate. Another limitation of OST programs is insufficient staff (Halpern, 1999). Students could not be provided with one-on-one attention because the staff was limited and untrained. Additionally, limited funding leaves staff and children with few educational resources.

To address these challenges, Halpern (1999) suggests a number of solutions to these issues. He suggests that communities pool their resources to open more OST programs. Opening more programs rather than expanding current programs is beneficial maintaining the “family like

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quality” of programs (Halpern, 1999, p. 90). He argues that pooling resources to open more programs will help to fund programs, and will also provide families with a number of choices when selecting an OST program for their child. Further, OST programs should provide more training and staff support during the program to provide the staff with resources to better support student learning. However, Halpern (1999) admits to limited college courses and few professional development opportunities to prepare staff members to run these programs. Finally, he suggests that OST program facilitators and staff begin to articulate a clear purpose for OST programs because these programs can allow for new types of learning and can also give students a space that they “can feel that they own” (p. 93).

Lauer et al. (2006) conducted a literature review of 30 studies of OST programs to examine the effects of program features on student reading outcomes, and also reviewed 22 studies of OST programs to examine the effects of different program features on student outcomes in mathematics. They limited their review to studies that took place from 1985 to 2003, and to studies that examined the effectiveness of particular OST programs. The quality of each study was evaluated and the studies were coded for characteristics of the OST program examined in the article (Lauer et al., 2006). They used a software program called Comprehensive Meta-Analysis to analyze the data (Lauer et al., 2006). The researchers examined how time frame (whether programs took place during the summer or after school), grade level, program focus (either only academic or academic and socially based), program duration, and student staff ratio impacted student outcomes in reading and in mathematics achievement. They also discussed important features that other authors indicated as having positive effects on student academic outcomes.

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Findings show that time frame was not important for producing positive student outcomes in reading or in mathematics. In other words, whether the program took place after school or during the summer did not have an impact on student achievement in mathematics or reading (Lauer et al., 2006). They also found that lower elementary and high school students made the greatest gains in reading outcomes, indicating that OST programs may have the largest impact on lower elementary and high school students as compared to students in other grades. Student achievement in mathematics as a result of OST programs was higher in middle and high school grades. However, Lauer et al. (2006) indicated that more research studies need to be conducted in order to determine how OST programs impact elementary students' mathematics achievement. These researchers also indicated that it did not make a statistically significant difference in reading outcomes whether the program was only academic based or academic and socially based. However, students made greater gains in mathematics when the program had a social component (Lauer et al., 2006). Therefore, "this suggests that OST programs need not focus only on academics in order to produce positive effects" (p. 305).

When Lauer et al. (2006) examined program duration, they found that programs had to last at least 45 hours to produce positive effects in both reading and mathematics. However, programs that lasted more than 210 hours did not have a stronger impact on reading outcomes as compared to those programs that had a medium duration of 46 to 210 hours (Lauer et al., 2006). Similarly, in relation to mathematics achievement, programs that lasted more than 100 hours were slightly less effective than programs of medium duration that lasted between 46 and 100 hours, suggesting that students may lose interest in a program if the program has a long duration (Lauer et al., 2006). It was also found that individualized attention produced the greatest outcomes in reading achievement, and small group instruction of ten students or less produced

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greater mathematics gains than large group instruction (Lauer et al., 2006). It seems that having small groups of students is a strong component of OST programs.

Lauer et al. (2006) also outlined features of OST programs that other researchers listed as important components of OST programs. For example, researchers indicated that programs produced better academic results in students when a well-qualified supervisor, who had theoretical knowledge of reading, mentorship ability, and experience in teaching, led the program. Furthermore, other studies emphasized social and behavioral skills in OST programs as a way to increase literacy outcomes for students. Lauer et al. (2006) also suggest implementing an evaluation plan to monitor the progress of the program to better tailor programs to individual student needs.

Small and O'Connor (2008) discuss effective features of OST programs for kindergarten through twelfth grade students that “improve mental health and social-emotional competencies” (p. 1). In order to promote socio-emotional health for students, they suggest many program features in areas such as program design and content, program relevance, program delivery, and program assessment. In designing the program and developing its content, these authors suggest establishing an appropriate structure where time is allotted for free play as well as structured activities (Small & O'Connor, 2008). They also recommend establishing an atmosphere of safety for students in order to allow students to engage fully in the program's content.

Furthermore, programs should be designed to offer opportunities for students to develop work, life, and school skills (Small & O'Connor, 2008). They suggest that programs should focus on improving individual student's skills, rather than focusing on competition with other students. In order to build program relevance, the authors suggest that programs are inclusive of many different groups of students, and that these groups have many opportunities to interact with

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one another. Staff should be culturally competent, and have a solid understanding of their own cultural beliefs and the cultural beliefs of their students in order to establish positive relationships in the OST programs (Small & O'Connor, 2008).

Small and O'Connor (2008) also discuss important aspects of program delivery. Staff should build positive relationships with students in order to guide them through the program's content as well as provide students with emotional support. Furthermore, OST program staff should be well educated and committed to student achievement (Small & O'Connor, 2008). The authors also suggest that programs should be staffed by many adults in order to provide each student with individual instruction. They also discuss establishing constructive social expectations to encourage positive behavior inside and outside of the program. Integrating the school, family, and community supports student learning and growth in many different areas of students' lives (Small & O'Connor, 2008). They also suggest the importance of maintaining positive contact with other youth programs in the community. In order to assess program outcomes, they suggest students should be involved in decision making and implementing assessment plans in order to monitor individual student and program outcomes (Small & O'Connor, 2008).

Small and O'Connor (2008) also suggest features of OST programs that promote social and emotional growth in students, while the articles discussed thus far have focused more narrowly on how OST programs promote academic gains. This is important as studies have linked socio-emotional development with student academic performance. For example, Shazad (2012) performed a study to establish the link between self-esteem and academic performance. In a survey, 600 students filled out a questionnaire describing their level of self-esteem. Findings from the study show that self-esteem and support had a significant positive relationship with

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students' academic performance (Shazad, 2012). Therefore, OST programs that foster positive socio-emotional development in students can also promote better student academic performance. Thusly, Small and O'Connor (2008) have outlined important features to implement in order to produce positive student socio-emotional development, which has been linked to positive academic gains as well (Shazad, 2012).

Similar to the article published by Small and O'Connor (2008), Beckett et al. (2009) developed a practice guide for schools and communities to implement effective OST programs, although these authors focused on academic outcomes. These authors developed the guide by examining 1,000 studies of OST programs for elementary and middle school children over the last 20 years. Based on these studies, Beckett et al. (2009) developed five overarching recommendations to consider when implementing OST programs. They determined the level of evidence for each recommendation as either *low*, *moderate* or *strong* depending on how much causal evidence existed linking each recommendation with student academic performance. *Low* recommendations were included because they were based on expert opinions and theory, although they were not as strongly supported in the literature as *moderate* and *strong* recommendations. The authors also provided practical steps for implementing their suggestions in OST programs. In the following paragraphs, these recommendations and steps for implementation are described in detail.

Beckett et al. (2009) first recommend that OST programs align the content of the programs with the students' regular classroom, by hiring a coordinator to maintain communication between the school and the staff of the program (Beckett et al., 2009). The coordinator can set up meeting times for the OST staff and school staff to plan, and also coordinate school and OST staff to receive the same professional development (Beckett et al.,

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2009). Additionally, it is important that programs define learning objectives similar to the learning objectives established in school to ensure that students are held to the same expectations in school as they are in the OST program (Becket et al., 2009). Furthermore, the OST program can coordinate with the school to hire staff for the program, as effective classroom teachers are valuable candidates for staffing the programs (Becket et al., 2009). However, the level of evidence was *low* for this recommendation, mainly because no study specifically studied the causal relationship between this feature and student academic outcomes. Beckett et al. (2009) assert that connecting the students' school day to the OST programs is important to ensure students are striving for the same academic goals inside and outside of school.

The authors' second recommendation is to enroll certain students in OST programs and strive to maintain student attendance in the program, particularly elementary and middle school students living in low SES communities. Increasing attendance in OST programs will ensure students are receiving enough instruction to make academic gains. Beckett et al. (2009) suggest that implementers design programs that fit the needs and preferences of parents and students. In order to do this, they suggest sending out a survey asking parents what time, location in the community, and number of days that would be convenient for parents to bring their students to the program. Their responses should inform how implementers design the basic features of the program (Beckett et al., 2009). Other research has indicated that parental involvement in children's education is linked to higher student academic achievement (Hoover-Dempsey & Walker, 2002). Specifically, research has shown that effective communication between school and families and also creating a welcoming school environment for families has been linked to improved student behavior, greater parental satisfaction with the school, and more parental support for school and its educational goals (Hoover-Dempsey & Walker, 2002). Making

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decisions regarding the design of OST programs with parent input could possibly produce better academic results for students.

Some suggestions around parental involvement include promoting awareness of the program through fliers, posters, and communication between teachers and parents (Beckett et al., 2009). Furthermore, OST programs should compile attendance data in order to identify students who may be struggling to attend the program (Beckett et al., 2009). OST programs should include a form of recreational activity in order to compete with non-academic OST programs because this would encourage student attendance and participation (Beckett et al., 2009). Again, the authors state the evidence for this recommendation is *low* because there is no evidence in the literature that links higher attendance and greater student academic outcomes, but students need to attend OST programs regularly in order to maximize the academic benefits of the programs (Beckett et al., 2009).

The third recommendation is for implementers to design instruction for individual students or small groups (Beckett et al., 2009). The authors suggest that OST program instructors use informal and formal assessment data to inform their instruction. Furthermore, programs should use one-on-one tutoring if possible for students to truly receive individualized instruction or at least be placed in small groups of three to nine students (Beckett et al., 2009). Further, instructors in OST programs should seek out information on individual students in order to design instruction that is engaging and interesting, and should also use assessments in order to identify and build on individual student strengths (Beckett et al., 2009). There is *moderate* evidence to support this recommendation based on the literature review as a pattern in the literature exists where programs that follow this model produce better student academic outcomes (Beckett et al., 2009).

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OST programs should also provide engaging learning experiences for students (Beckett et al., 2009). In order to implement this recommendation, OST program staff should connect instruction with the students' daily lives and interests (Beckett et al., 2009). Because OST programs occur outside of the regular school day, these programs are in a unique position to be able to offer students with engaging experiences such as field trips and visits with guest speakers, which would connect instruction to students' daily lives, and make instruction more engaging (Beckett et al., 2009). The authors suggest providing students with hands-on learning experiences and also collaborative learning experiences when students are in small groups. It was also recommended that OST program staff develop positive relationships with students in order to implement this recommendation, but the level of evidence supporting this recommendation is *low* because no studies linked student outcomes directly to this recommendation (Beckett et al., 2009).

Finally, Beckett et al. (2009) recommend that implementers evaluate programs to target specific ways for program improvement, and also identify strengths of programs that could be implemented in other OST programs. Implementers of OST programs should first develop an evaluation plan, gather information on program and individual student performance, and then analyze the data in order to improve the program (Beckett et al., 2009). OST programs should also implement a summative evaluation at the end of each year in order to document how students progressed over the course of the program (Beckett et al., 2009). However, the level of evidence supporting this recommendation was deemed *low* because no studies linked monitoring with positive academic outcomes (Beckett et al., 2009). While the authors suggest that more research is needed to examine particular features of OST programs in order to make recommendations backed by stronger evidence, they assert that these recommendations would

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produce positive student outcomes in OST programs based on their expert opinions and the evidence that is present in the literature to support their claims (Beckett et al., 2009).

In conclusion, these studies outline many different features that are important when designing academic based OST programs for low-income students in the United States. These studies have demonstrated that effective OST programs can produce positive academic and socio-emotional outcomes in students as evidenced through standardized assessment data, as well as teacher, student, and parent observations. Implementing OST programs with research-based practices can serve as a model for closing the achievement gap between low and high income students. As Bergin et al. (1992) pointed out in their article describing the implementation and benefits of HELP, almost any community can design an effective OST program to promote educational equity for students of low-income. This literature review has outlined important features when designing these programs, and provided some evidence to support the idea that opening more OST programs across the United States would serve as a model to close the achievement gap between students of low and high income. In the following chapter, the features of OST programs that are most recommended in the literature are outlined, and the extent to which these programs can produce gains in literacy, mathematics, and socio-emotional/behavioral development is explored.

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Chapter IV: Results

In this paper, I discuss the critical features of OST programs that promote positive gains in literacy, mathematics, and/or socio-emotional/behavioral development in low-income elementary students in the United States. The literature review includes 15 articles. The discussion in the following paragraphs outlines effective features of OST programs that promote positive student gains in literacy, mathematics, and/or socio-emotional/behavioral development.

Age Group: Upper or Lower Elementary Students

Each study in the literature review that examined a particular OST program indicated whether the students who participated in the study were in the lower elementary grades (kindergarten through second grade), upper grades (third grade through sixth grade), or had a combination of students in the lower and upper grades. Four studies examined OST programs that included participants only in the upper grades (Baker, Rieg, & Clendaneil, 2005; D'Agostino & Hiestand, 1995; Foley & Eddins, 2001; Posner & Vandell, 1994). Three studies examined OST program that only included participants in the lower grades (Bergen et al., 1992; Borman, Goetz, & Dowling, 2009 & Schacter & Jo, 2005). Two studies examined OST programs that served both upper and lower elementary students (Black et al., 2009; Luftig, 2003), and four of the studies did not examine specific programs, but made recommendations for OST programs in general (Beckett et al., 2009; Halpern, 1999; Lauer et al., 2006; Small & O'Connor, 2008). A relatively similar number of studies in the literature review examined OST programs serving lower, upper, and a combination of lower and upper elementary students.

Summer School vs. After School Programs

All of the studies that examined particular programs indicated whether the programs were held during the summer or after school. Four out of the 15 articles examined and made

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recommendations about out of school time programs in general, meaning that the researchers examined and made recommendations for both after school and summer school programs (Beckett et al., 2009; Halpern, 1999; Lauer et al., 2006; Small & O'Connor, 2008). Therefore, these articles examined features of both after school and summer school programs. Four out of fifteen articles examined summer school programs (Borman, Goetz & Dowling, 2009; D'Agostino & Hiestand, 1995; Luftig, 2003; Schacter & Jo, 2005), and seven out of fifteen articles examined after school programs (Baker, Rieg, & Clendaniel, 2006; Bergin et al., 1992; Black et al., 2008; Foley & Eddins, 2001; Mahoney, Parente, & Lord, 2007; Morris, Shaw & Perney, 1990; Posner & Vandell, 1994). However, Lauer et al. (2006) indicated that it did not make a statistically significant difference in terms of student achievement whether the program occurred during the summer or after school. None of the other studies examined whether the time frame in which the OST program took place had an effect on student achievement.

High Quality Instruction

Fourteen out of 15 articles examined in this paper implemented or recommended that high quality instruction be a feature of effective OST programs for students to make gains in literacy, math, or socio-emotional/behavioral outcomes. However, "high quality instruction" was defined in different ways. High quality instruction was defined as instruction designed to promote an interest in reading (Morris, Shaw, & Perney, 1990); using a research based curriculum (Black et al., 2008; Schacter & Jo, 2005); implementing a focused curriculum with learning goals (Beckett et al., 2009; Borman, Goetz, & Dowling, 2009; Luftig, 2003); implementing individualized instruction for individual student needs (Beckett et al., 2009; Lauer et al., 2006; Posner & Vandell, 1994; Small & O'Connor, 2008;); implementing instruction that aligns with and enhances the regular school day content (Baker, Rieg, & Clendaniel, 2006;

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Beckett et al., 2009; Mahoney, Parente, & Lord, 2007); implementing a culturally sensitive curriculum that encourages students to pursue interests (Bergin et al., 1992); implementing a curriculum focused on youth development practices (Foley & Eddins, 2001); and instruction designed to promote higher order thinking skills (D'Agostino & Hiestand, 1995). Although high quality instruction was defined differently in many studies, all but one of the studies recommended the implementation of high quality instruction to promote student outcomes.

Quality Staff

In addition to effective instruction, high quality staff is another feature of OST programs that was commonly recommended as an important feature of particular OST programs. Only one of the articles in my literature review did not examine this feature of OST programs. However, 14 of the 14 articles that did examine this feature indicated high quality staff as an important feature of the OST program, or recommended that OST programs have certified staff members. Like high quality instruction, quality staff was defined in various ways. Quality instruction is defined as trained tutors or staff members (Baker, Rieg, & Clendaniel, 2006; Halpern, 1999; Morris, Shaw, & Perney, 1990), culturally sensitive staff members (Bergin et al., 1992; Small & O'Connor, 2008), and certified teachers (Black et al., 2008; Beckett et al., 2009; Borman, Goetz, & Dowling, 2009; D'Agostino & Hiestand, 1995; Foley & Eddins, 2001; Luftig, 2003; Posner & Vandell, 1994; Schacter & Jo, 2005). Eight out of the 14 articles that discussed staff characteristics indicated that certified teachers were part of the programs examined, or recommended certified teachers to be part of the staff. Three out of the 14 articles indicated that the staff or tutors should be or were trained prior to tutoring sessions, and two out of the 14 articles that examined this feature indicated that the staff should be able to or were able to respond culturally to students.

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Supervisors

For many of the studies, a part of “quality instructors” included having a supervisor or coordinator. Five out of the fifteen articles either examined programs that had hired a supervisor to oversee program activities (Baker, Rieg, & Clendaniel, 2006; Foley & Eddins, 2001; Morris, Shaw, & Perney, 1990), or recommended that qualified supervisors oversee OST programs (Beckett et al., 2009; Lauer et al., 2006). Supervisors in specific programs recruited, trained, and monitored tutors and students (Baker, Rieg, & Clendaniel, 2006; Morris, Shaw, & Perney, 1990). For example, Foley and Eddins (2001) found that students had the best outcomes in the *Virtual Y* programs if supervisors remained in the program for long periods of time. Additionally, it was stated that effective supervisors have theoretical knowledge of teaching and mentorship ability (Lauer et al., 2006), and should maintain contact and communication between the school and the OST program (Beckett et al., 2009).

Student Staff Ratio

Of the 15 articles examined, 13 of the articles examined the ratio of students to staff members. Five out of the 15 articles either examined programs that implemented a 1:1 ratio (Morris, Shaw, & Perney, 1990; Posner & Vandell, 1994) or recommend that a student staff ratio of 1:1 is favorable in order for students to receive individualized attention (Beckett et al., 2009; Halpern, 1999; Small & O’Connor, 2008). Although Small and O’Connor (2008) recommended sufficient staff members to provide each student with individual attention, they also recommend that students work collaboratively within OST programs.

Six of the articles either studied programs which implemented a student staff ratio of $\leq 10:1$ (Baker, Rieg, & Clendaniel, 2006; Bergin et al., 1992; Black et al., 2008; Borman, Goetz, & Dowling, 2009; Foley & Eddins, 2001; Luftig, 2003), or recommended that OST programs

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maintain a student staff ratio of $\leq 10:1$ to maximize student academic outcomes (Lauer et al., 2006). Bergin et al. (1992) indicated that an approximate student staff ratio of 5:1 was favorable for student achievement, while Borman, Goetz, & Dowling (2009) studied OST programs which implemented a student staff ratio of $\leq 15:1$. Therefore, all of the studies that discussed student staff ratios either observed or recommended that student staff ratios be limited to a maximum of 15 students for every instructor.

Duration

Out of the 15 studies, 10 either discussed the duration of the program (Baker, Rieg, & Clendaniel, 2005; Bergen et al., 1992; Black et al., 2009; Borman, Goetz, & Dowling, 2009; D'Agostino & Hiestand, 1995; Foley & Eddins, 2001; Luftig, 2003; Morris, Shaw, & Perney, 1990; Schacter & Jo, 2005), or recommended a certain duration of the program to produce positive student gains (Lauer et al., 2006). However, the recommendations for how long the program lasted differed greatly from article to article. Additionally, some authors measured the duration of the program in hours, and others measured the duration in days, weeks or months. For the purpose of comparison, I converted each program's duration that was listed in days or weeks to months. Out of the eight studies that measured program duration in terms of months, five studies examined programs which lasted less than or equal to three months, while three studies examined programs which lasted greater than or equal to nine months. Only two studies described or recommended a certain duration in hours (Lauer et al., 2006; Morris, Shaw & Perney, 1990). Lauer et al. (2006) recommended that a program last at least 45 hours to produce student outcomes, and Morris, Shaw, & Perney (1990) examined an after school program in which students participated in the program for 50 hours.

Social Component

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Yet another recommended feature is the inclusion of a social component in the OST program. Seven out of 15 articles indicated that the OST program had a social component (Bergin et al., 1992; Borman, Goetz, & Dowling, 2009; Mahoney, Parente, & Lord, 2007; Schacter & Jo, 2005), or that having a social component as a feature of OST programs would have a beneficial effect for student outcomes and participation in the program (Beckett et al., 2009; Lauer et al., 2006; Small & O'Connor, 2008).

Two of the studies examined programs which included recess and meal periods for children to interact and socialize with one another, although the authors did not indicate that the program had specific social goals (Borman, Goetz, & Dowling, 2009; Schacter & Jo, 2005). Both of these studies were summer day camps; therefore, it is natural that these programs would include recess and meal periods for students just as the regular school day allows. However, Bergin et al. (1992) examined the HELP program, which had a specific goal of creating community and social bonding within the program to support student learning. Although Mahoney, Parente, and Lord (2007) did not examine programs with specific social goals, they found that student achievement was higher in programs that sought to build positive social relationships among students and staff.

Three studies recommended that OST programs include a social component (Beckett et al., 2009; Lauer et al., 2006; Small & O'Connor, 2008). Lauer et al. (2006) found that students who participated in programs with a social component made greater gains in math, while Small and O'Connor (2008) suggested implementing a balance between free play and structured academic activities, involving family and community, and building positive social relationships within OST programs in order to promote socio-emotional development within students. Beckett

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et al. (2009) also suggested implementing a social component in order to increase attendance in OST programs, and to compete with other OST programs that are not academically based.

Use of Community Resources

Many authors recommended or studied OST programs that utilize community resources. Six out of the 15 articles either examined programs that utilized community resources such as community volunteers (Bergin et al., 1992; Borman, Goetz, & Dowling, 2009; Morris, Shaw & Perney, 1990), community buildings (Morris, Shaw, & Perney, 1990), and community funds (Posner & Vandell, 1994). Other studies recommended that programs utilize community resources such as community buildings (Beckett et al., 2009), and implement community interests into the program in order to promote socio-emotional development in students (Small & O'Connor, 2008). These studies indicate various ways that OST programs can use community resources to promote positive student outcomes.

Progress Monitoring

Another feature that was frequently recommended or implemented in specific programs was progress monitoring. Five of the 15 articles discussed progress monitoring as an important feature of OST programs (Beckett et al., 2009; Black et al., 2008; Lauer et al., 2006; Morris, Shaw, & Perney, 1990; Small & O'Connor, 2008). Two articles examined OST programs which monitored the progress of student growth (Black et al., 2008; Morris, Shaw, & Perney, 1990). However, it has been recommended to implement an evaluation of the entire program in order to better meet the needs of individual students (Lauer et al., 2006), and to improve weaknesses of the program and implement the strengths of the OST program in other programs (Beckett et al., 2009). Small and O'Connor (2008) suggested evaluating both the OST program itself and the students in the program to target ways to improve the program. Therefore, there are different

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ways to implement progress monitoring. Some authors suggest implementing progress monitoring as a way to document student growth, others suggest that implementers progress monitor the entire program, while other suggest that programs should progress monitor both the program and the students who participated in the OST program.

Parental Involvement

Only three out of 15 articles listed parental involvement as a component of the OST program (Beckett et al., 2009; Borman, Goetz, & Dowling, 2009; Small & O'Connor, 2008), although authors indicated different ways to involve parents and also different reasons for involving parents. Small and O'Connor (2008) indicate that family as well as community involvement within OST programs would produce better socio-emotional outcomes in students. Beckett et al. (2009) indicated that parents should be surveyed for OST program structure preferences such as time and location of the program in order to accommodate for family needs. In contrast, Borman, Goetz, and Dowling (2009) studied an OST program that conducted parent surveys at the end of the program to determine whether or not parents were satisfied with the program. Parents indicated that they felt informed about their students' progress, and also that they were generally satisfied with the program (Borman, Goetz & Dowling, 2009). The three studies that listed parental involvement as an important feature of OST programs were published in 2008 onward, which may indicate a recent trend toward more family involvement in children's education.

Title I Funding

Similar to the number of studies indicating parental involvement as important features of OST programs, only three out of the 15 articles indicated that the OST program used Title I funds to finance the program (Bergin et al., 1992; D'Agostino & Hiestand, 1995; Luftig, 2003).

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D'Agostino and Hiestand (1995) found that students who went to summer school funded by Title I only made slightly larger gains in math compared to the control group who received Title I services during the school year. The control group outperformed the treatment group who went to summer school in terms of reading, indicating that Title I funded summer school programs have more of an impact on student math achievement than on reading achievement (D'Agostino & Hiestand, 1995). No article specifically examined whether or not a Title I funded program produced better student achievement compared to programs that were not funded by Title I.

District Funding

Only two of the 15 articles examined programs that used district funds to implement the OST program (Baker, Rieg, & Clendaniel, 2006; Luftig, 2003). Baker, Rieg, and Clendaniel (2006) state that strong support from the district helped to create a strong OST program because the district provided the necessary funds. Luftig (2003) discussed the similarity between student literacy achievement in both a district-funded program and a privately funded program. The district-funded program, which did not charge parents for their children's participation, produced similar positive gains in literacy (Luftig, 2003). One study suggested the use of district funds to adequately finance OST programs, and one study suggested that the use of district funds can produce the same type of results as privately funded programs with the added benefit of reducing family financial burden. Due to the lack of certainty in the articles discussed in this paper, more research on the impact of funding is warranted.

School-OST Program Collaboration

Collaboration was not mentioned often as an effective requirement of OST programs. Two studies either recommended school-OST program collaboration (Beckett et al., 2009), or examined programs with implemented school-OST program collaboration (Baker, Rieg &

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Clendaniel, 2006). Baker, Rieg and Clendaniel (2006) examined a program in which students' classroom teachers provided materials for the students to work through during the OST program. Similarly, Beckett et al. (2009) recommended that OST programs and schools align the content of the curriculum in order to produced desired student outcomes. While not mentioned in all 15 articles, both of these studies suggest that school-OST program collaboration will positively affect student academic outcomes.

Attendance Monitoring

Similar to collaboration, monitoring attendance is not widely listed as a requirement of effective OST programs. Two studies either examined a program that implemented a system to monitor attendance (Black et al., 2008), or recommended that OST programs monitor student attendance (Beckett et al., 2009). Both Black et al. (2008) and Beckett et al. (2009) recommend that OST programs monitor attendance to ensure that targeted students received the instruction provided in the OST program on a regular basis. Implementing attendance monitoring allows program staff to identify students who struggle to attend the program, and then work with those students to improve their attendance.

Positive Outcomes

Literacy Gains

Eight of 11 articles that examined student outcomes in literacy as a result of the OST program that included these components indicated that the program produced a positive result in this category. However, authors defined literacy gains in two different ways. The majority of studies that examined student growth in literacy defined a gain in literacy as the treatment group outperforming the control group on an assessment (Bergin et al., 1992; Black et al., 2008; Borman, Goetz & Dowling, 2008; Foley & Eddins, 2001; Luftig, 2003; Morris, Shaw & Perney,

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1990; Schacter & Jo, 2005). Two of the articles defined literacy achievement as program participation increasing school grades (Mahoney, Parente & Lord, 2007; Posner & Vandell, 1994). However, of the 11 articles that did examine growth in literacy as a result of the program, eight studies found some type of growth in literacy development. It is important to note that although the *Virtual Y* programs did not produce a statistically significant difference in reading achievement in the treatment group compared to the control group (which is what the researchers defined as a literacy gain), the mean scale score of the treatment group on reading assessments was higher than the control group (Foley & Eddins, 2001). While not significant, the program did produce a positive gain in literacy achievement in the treatment group. In summary, all of the programs asserted that the OST program does have a positive impact on literacy achievement. No study was found to negatively impact literacy achievement.

Math Gains

Seven studies examined how OST programs can impact student growth in mathematics. Math gains were defined in three main ways. The majority of authors defined a math gain as the treatment group attending the OST program outperforming the control group at the end of the program who did not attend the program (Bergin et al., 1992; Black et al., 2008; D'Agostino & Hiestand, 1995; Foley & Eddins, 2001). Two studies defined a gain in mathematics as improving school grades (Mahoney, Parente, & Lord, 2007; Posner & Vandell, 1994), and one study defined a gain in mathematics as individual student improvement on a standardized test (Baker, Rieg, & Clendaniel, 2005). Out of the seven studies, six indicated that students had positive outcomes in mathematics (Baker, Rieg, & Clendaniel, 2005; Bergin et al., 1992; Black et al., 2008; D'Agostino & Hiestand, 1995; Foley & Eddins, 2001; Posner & Vandell, 1994). Only one of the studies that examined programs with the intent of producing mathematics gains in students

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found that students did not make these gains (Mahoney, Parente, & Lord, 2007). As with literacy, no study was found to negatively impacted mathematics achievement.

Socio-emotional/Behavioral Gains

Four of the five articles that examined positive socio-emotional/behavioral outcomes in students indicated that the program produced positive outcomes in this category. Authors defined social, emotional, and behavioral gains in different ways. Two of the articles defined socio-emotional gains as student participation in programs promoting better peer relationships (Mahoney, Parente, & Lord, 2007; Posner & Vandell, 1994). Posner and Vandell (1994) defined a behavioral gain as teachers reporting students who attended programs to have better behavior in school. Foley and Eddins (2001) defined a behavioral gain as participation in the after school program leading to better school attendance. Mahoney, Parente, and Lord (2007) defined a behavioral gain as the program increasing intrinsic motivation in students. Another study measured the effect of an OST program producing statistically significant gains in the three behavioral measures of engagement, behavior, and homework completion, but found that the OST program did not produce a positive nor negative outcome in these behavioral measures (Baker, Rieg & Clendaniel, 2005). This was the only study that examined socio-emotional/behavioral outcomes in students, but found that the program did not produce a positive gain. Finally, one study defined an emotional gain as the program increasing self confidence in students (Borman, Goetz & Dowling, 2009). In summary, although the authors defined and examined different aspects of student's socio-emotional/behavioral development, most researchers found that OST programs can produce positive results in these areas.

Conclusion

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I outlined all of the features that researchers indicated as critical features of OST programs several times in the literature I reviewed. I also outlined how many of the articles examined a program that produced a positive gain in literacy, mathematics, or socio-emotional/behavioral development. Only one study found that the OST program did not produce a positive academic gain for students (Mahoney, Parente, & Lord, 2007). However, students who attended the program were reported to have better social competence and motivation in school (Mahoney, Parente, & Lord, 2007). Therefore, 10 out of 11 studies that examined specific OST programs found that the OST program produced a positive academic gain for students who attended the program. Based on the review of these articles, OST programs appear to be beneficial for low-income students, especially those that implement the aforementioned features.

Description of Tables

Table A in Appendix A outlines features of OST programs that each study indicated as either included in the structure of the program under study, or as a potentially important feature of OST programs. Table B lists the results in literacy, math, and/or positive socio-emotional outcomes. If a study did not examine one of these categories, I listed the category as “N/A” and did not include the study in calculating the number of articles that indicated a positive gain in the given category.

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Chapter V: Discussion

Overview

In this exploration, I reviewed literature that either made recommendations for effective features of OST programs or studied individual OST programs and their effects on student gains in literacy, mathematics, or socio-emotional/behavioral development. The literature search yielded a total of 15 articles after accounting for the specific variables I wanted to explore. Three of the articles recommended effective features of OST programs, and eleven articles examined programs that studied individual OST programs and their effects on student academic and socio-emotional/behavioral outcomes.

The articles in my literature review either recommended or studied effective OST programs that had the following features: age group of students involved (either upper or lower elementary grades, time frame (either summer or after school program), high quality instruction, quality staff, hired a supervisor, maintained low student staff ratios, implemented a specific duration, included a social component, used community resources, implemented progress monitoring, involved parents, utilized Title I funds, utilized district funds, and monitored student attendance. In the following sections, I make recommendations for the implementation of features based on the number of articles that discussed or recommended the feature as a means of producing positive student outcomes.

Features: High Recommendation

Three features were recommended or implemented in OST programs in my literature review in at least ten of the articles that I reviewed. Because these features were recommended by at least ten studies as a means for producing the best academic and socio-emotional/behavioral gains in students who attended the program, I concluded that the literature

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highly recommends the implementation of the following features: quality instruction, low student staff ratio, and qualified instructors. These program features were recommended the most often in the reviewed articles. Designers of OST programs should implement these features to maximize positive student outcomes.

Features: Moderate Recommendation

Four of the features were recommended or implemented in at least five times of the articles, but less than ten times in my literature review. Therefore, I concluded that the literature moderately recommends the following features: using community resources, hiring a supervisor to oversee the OST program, including a social component, implementing a program duration of less than or equal to three months, and progress monitoring of the students and the program. These features were not as strongly supported in the literature to produce student outcomes as quality instruction, implementing a low student staff ratio and hiring qualified instructor, but were frequently discussed as important features of OST programs.

Features: Low Recommendation

Four features were recommended less than four times in my literature review. I gave these features a low recommendation based on the literature I reviewed, but I also include a discussion on why the lack of recommendation is surprising. Only three of the articles recommended parental involvement (Beckett et al., 2009; Borman, Goetz & Dowling, 2009; Small & O'Connor, 2008). This is a surprising finding because other literature has demonstrated the importance of parental involvement in promoting student academic gains (Hoover-Dempsey & Walker, 2002). My literature review does not strongly support that parental involvement in OST programs would produce positive student academic gains, although other researchers indicate that parental involvement is correlated to better student academic achievement. Perhaps

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many OST program implementers have not considered the benefits of parental involvement in their children's education when related to out of school time, although parental involvement in schools has been shown to be effective in producing positive student outcomes (Hoover-Dempsey & Walker, 2002).

Similarly, a small number of articles discussed the use of Title I funds or district funding to finance OST programs. Only three articles examined programs which utilized Title I funds (Bergen et al., 1992; D'Agostino & Hiestand, 1995; Luftig, 2003), and only two articles examined OST programs which utilized district funds (Baker, Rieg, & Clendaniel, 2006; Luftig, 2003). This is surprising because the use of these funds could alleviate financial pressure for schools and parents. For example, Luftig (2003) suggested that district funded summer school programs produced similar results to programs who charged parents for student participation, while alleviating the financial burden on parents. Using Title I or district funding could be an effective means for reducing financial stress, especially when related to working with low-income populations.

Just as few articles discussed Title I and district funding, only two articles suggested or implemented the use of attendance monitoring to maximize student academic gains (Beckett et al, 2009; Black et al., 2008). Beckett et al. (2009) suggested that this was important to ensure students received the amount of instruction provided in the program to produce desired outcomes. Although my literature review does not strongly support this feature of OST programs, monitoring attendance could produce positive student outcomes because it would allow program implementers to identify which students were struggling with attendance and then encourage program participation in order for students to receive adequate instruction provided in OST programs to maximize positive outcomes.

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Yet another feature that was not recommended often in the reviewed literature was school-OST program collaboration. Only two articles recommended or examined programs which implemented this feature. This is a surprising finding in that it would aligning the school content and the OST program content would produce better student outcomes because students would be working toward the same goals in both settings (Beckett et al., 2009). This could serve as an effective feature for holding students to similar high expectations in both settings, and also allow regular classroom teachers and OST program staff to collaborate to best meet the individual needs of students.

Literacy, Mathematics, and Socio-Emotional/Behavioral Gains

In terms of literacy, mathematics, and socio-emotional/behavioral gains, each study that examined a particular OST program found that the program produced positive gains in one of these areas. Additionally, 10 out of the 11 articles that examined individual OST programs found that the program produced positive gains in either mathematics or literacy. All but one study indicated that students who participated in the OST program made positive academic gains. Additionally, negative effects in student literacy, mathematics, or socio-emotional/behavioral development were not found, even if the OST program did not produce the desired gain. Overwhelmingly, the literature I reviewed indicates that OST programs produced positive results in literacy, mathematics, or socio-emotional/behavioral outcomes, providing strong justification for the rationale that OST programs may serve as a model for enhancing low-income students' academic and socio-emotional/behavioral development.

The reviewed literature stated that if a program targets mathematics or socio-emotional/behavioral development in students, the program is more likely to produce the desired results than if the study targets literacy development. Eight out of 11 studies that examined

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student outcomes in literacy indicated that the program produced the desired results, while six out of seven and four out of five studies indicated that the program produced a math or socio-emotional/behavioral gain, respectively. While mathematics and socio-emotional/behavioral seem to find more success, literacy gains also seem successful. The results indicate that OST programs are useful and should be considered an avenue to decreasing the achievement gap.

Study Limitations

I limited my study to academic based OST programs for low-income elementary students in the United States as a model for closing the achievement gap between students of high and low SES. I did not examine the impact of OST programs on low-income preschool, middle school, or high school students in terms of their academic or personal growth. It may be very important to continue involvement in OST programs throughout a student's academic career and it may also be important to begin participation in OST programs before entering elementary school. Additionally, I limited my study to academic-based programs. I did not include social based clubs such as Girl Scouts or Boy Scouts, nor did I include sports teams or fine arts OST programs. Although a few of the programs I examined included a social, athletic, or artistic component, none of the programs were solely based in these categories.

I also proposed only one model for diminishing the achievement gap between high and low-income students. Although I am not proposing that opening more OST programs would completely eliminate this gap, research indicates that there are benefits for low-income elementary students' participation in OST programs. However, there may be other beneficial models for closing the achievement gap that I have not examined. There are many other educational issues including racism, classism, inequitable distribution of educational resources across the United States, and child poverty that OST programs cannot fully address in order to

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close the achievement gap between high and low-income students. However, implementing more effective OST programs across the United States could possibly serve as a model for better serving low-income students and families.

Areas for Further Research

There are many avenues for future research on OST programs and their impact on low-income students' academic and socio-emotional/behavioral development. More studies are needed in general to establish the effectiveness of OST programs. It would be beneficial if researchers could study individual features of OST programs in relation to student academic and socio-emotional/behavioral outcomes. Many of the studies I examined looked at a program as a whole, and then identified many of the features associated with the program. However, it is important to examine individual features that affect academic and socio-emotional/behavioral outcomes. Subsequently, researchers would be able to establish which features have the most impact on positive student outcomes in terms of their academic and socio-emotional/behavioral development.

Furthermore, a comparative study between social, athletic, fine arts, and academic-based programs would be beneficial to determine which type of program has the most impact on student academic and personal development. Researchers may find that one type of program better supports socio-emotional/behavioral development while another type of program better encourages academic development. Educators could then advocate for the most effective type of program to be implemented depending on individual student goals.

It may also be useful to compare summer school and after school programs. Researchers might provide instructors with the same curriculum and materials for both types of programs, and then compare which group of students made the most advances personally and academically.

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One study indicated that students can lose some of the knowledge and skills that they acquire over the summer (Borman, Goetz & Dowling, 2006). Therefore, it may be beneficial to examine whether summer school programs have more of an impact on student achievement than after school programs. This could be designed by providing the same instruction in both programs, and then comparing student growth over the course of both programs.

Another area for future research is to define the role of parental involvement in OST programs. Only a few articles recommended or implemented this feature in programs. However, other research has shown a link between parental involvement in their children's education and positive academic outcomes for students (Hoover-Dempsey & Walker, 2002). It seems as though implementing this feature in OST programs would also promote positive student outcomes. An avenue for future research could be to define parental involvement within OST programs, and determine the extent to which implementation of this feature is beneficial for students.

Similar to parental involvement, only a few articles recommended or implemented attendance monitoring. However, students need to attend the OST programs to be able to receive the benefits of the program. Implementing attendance policies within OST programs could promote better attendance among students. An area for further research could be to determine how OST program attendance policies could maximize student academic outcomes. With stricter attendance policies in OST programs, students would perhaps be more likely to attend, and would then receive more instruction within the programs.

Finally, I did not find any studies that compared a treatment group of low-income students who participated in an OST program to a control group of high or middle income students who did not participate in the program. A study that compared these two groups would

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have provided stronger evidence for whether or not low-income students' participation in OST programs can serve as an effective model for closing the achievement gap between low and middle and high income students.

Implications for Practice

As the results show, implementing OST programs with critical features for low-income students is a possible model for reducing the achievement gap between high and low-income students, especially in small populations of students. Individual OST programs may only reach small groups of students, but they have the potential to make a strong impact on those students' academic achievement. Program designers should implement as many of the features as possible that are outlined in these results, particularly high quality instruction, qualified instructors, and a low student staff ratio. Implementing these programs with effective features have the potential to produce positive student academic and socio-emotional/behavioral gains within schools and communities.

Implementing these programs would be difficult without Title I or district funding. It would be difficult to recruit instructors to dedicate their time, and also challenging to purchase instructional materials. Without this funding, the program would realistically need to be smaller in scale. However, promoting awareness of both the achievement gap and the impact that OST programs can have on student achievement could draw in community members, teachers, and even parents to realize the impact that OST programs can have in schools or communities. As Bergen et al. (1992) discussed, dedicated community members can work together to create strong OST programs to serve low-income students. Even if funds were unavailable, implementing effective programs is feasible with the help of community volunteers who are dedicated to providing each student with the necessary resources to succeed academically.

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Another possible implication of this research is to create university-school partnerships to staff OST programs. Baker, Rieg and Clendaniel (2006) discussed an effective program that recruited elementary education majors to tutor in an after-school program. The program benefited from university student involvement because the program was staffed by students with theoretical knowledge about teaching and learning. Similarly, university students benefited from valuable experience to teach elementary students, and also used the experience to fulfill the requirements of their mathematics methods coursework. Education programs at universities and schools could begin to collaborate in order for both university students and OST programs to benefit. This collaboration would be valuable for elementary education majors, and also lower costs for OST programs.

Conclusion

In this study, I outlined many features backed by research and scholars that can be implemented in OST programs for low-income students across the United States as a model for reducing the achievement gap between high and middle and low-income students. Every study that examined individual OST programs found the program to have beneficial effects on the students served. Therefore, implementing more OST programs across the United States could benefit low-income students in ways that normal school day instruction may not be able to do. I outlined the findings of 15 studies, outlined the features of OST programs that these authors have recommended, and demonstrated that OST programs can make a difference in promoting academic and socio-emotional/behavioral gains in low-income elementary students in the United States.

Appendix A

Table A

Study	Age Group: Upper/ Lower Grades	Duration	Quality Instruction	Summer	After School	Student Staff Ratio	Quality Instructor	Used Comm. Resources	Supervisor	Social Aspect	Progress Monitored	Program School Collaborate	Parents Involved	Attendance Monitored	District Funds	Title I Funds
Morris, Shaw & Perney (1990)	Both	50 hrs.	Yes	No	Yes	1:1	Yes	Yes	Yes	No	Yes	No	No	No	No	No
Bergen et al. (1992)	Lower	16 mo.	Yes	No	Yes	Approx. 5:1	Yes	Yes	No	Yes	No	No	No	No	No	Yes
Posner & Vandell (1994)	Upper	N/A	Yes	No	Yes	1:1	N/A	Yes	No	No	No	No	No	No	No	No
D'Agostino & Hiestand (1995)	Upper	3 mo.	Yes	Yes	No	N/A	Yes	No	No	No	No	No	No	No	No	Yes
Halpern (1999)	N/A	N/A	No	Yes	Yes	1:1	Yes	Yes	No	No	No	No	No	No	No	No
Foley & Eddins (2001)	Upper	2.5 mo. (10 weeks)	Yes	No	Yes	10:1	Yes	No	Yes	No	No	No	No	No	No	No
Luftig (2003)	Both	0.63 mo. (19 days)	Yes	Yes	No	10:1	Yes	No	No	No	No	No	No	No	Yes	Yes
Schacter & Jo (2005)	Lower	1.75 mo. (7 weeks)	Yes	Yes	No	15:1	Yes	No	No	Yes	No	No	No	No	No	No
Lauer et al. (2006)	Both	≥ 45 hrs.	Yes	Yes	Yes	≤10:1	Yes	No	Yes	Yes	Yes	No	No	No	No	No
Baker, Rieg & Clendaniel (2006)	Upper	12 mo.	Yes	No	Yes	2:1	Yes	No	Yes	No	No	Yes	No	No	Yes	No
Mahoney, Parente & Lord (2007)	Both	N/A	Yes	No	Yes	N/A	Yes	No	No	Yes	No	No	No	No	No	No
Black et al. (2008)	Both	9 mo.	Yes	No	Yes	10:1	Yes	No	No	No	Yes	No	No	Yes	No	No

Study	Age Group: Upper/ Low-er Grades	Duration	Quality Instruction	Summer	After School	Student Staff Ratio	Quality Instructor	Used Comm. Resources	Supervisor	Social Aspect	Progress Monitored	Program School Collaborate	Parents Involved	Attendance Monitored	District Funds	Title I Funds
Small & O'Connor (2008)	Both	N/A	Yes	Yes	Yes	1:1	Yes	Yes	No	Yes	Yes	No	Yes	No	No	No
Beckett et al. (2009)	Both	N/A	Yes	Yes	Yes	1:1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Borman, Goetz & Dowling (2009)	Lower	1.5 mo. (6 weeks)	Yes	Yes	No	10:1	Yes	No	No	Yes	No	No	Yes	No	No	No
Totals	Upper: 4/15 Lower: 3/14 Both: 7/15	<u>Hours:</u> ≥45: 2/2 <u>Months:</u> ≤3: 5/8 ≥9: 3/8	14/15	8/15	11/15	1:1: 5/11 ≤10:1: 5/11 ≥11:1: 1/11	14/14	6/15	5/15	6/15	5/15	2/15	3/15	2/15	2/15	3/15

Table B

Study	Literacy Gains	Mathematics Gains	Socio-Emotional/Behavior Gains
Morris, Shaw & Perney (1990)	Yes: The treatment group outperformed the control group on basal passage reading, spelling, and word recognition.	N/A	N/A
Bergin et al. (1992)	Yes: The treatment group made statistically significant gains over the control group on the Metropolitan Achievement Test.	Yes: The treatment group made statistically significant gains over the control group on the Metropolitan Achievement Test.	N/A
Posner & Vandell (1994)	Yes: Students who attended formal after school programs had better grades than students who participated in other after school activities.	Yes: Students who attended formal after school programs had better grades than students who participated in other after school activities.	Yes: Teachers reported that students who attended formal after school programs had better relationships and behavior in school.
D'Agostino & Hiestand (1995)	No: The control group who did not attend summer school outperformed the treatment group that attended summer school.	Yes: The treatment group made larger gains than the control group.	N/A
Halpern (1999)	N/A	N/A	N/A
Foley & Eddins (2001)	No: The fourth grade students did not perform better on the citywide standardized assessment than the control group at the significant level.	Yes: The fourth grade students who attended the program made statistically significant gains in math compared to the control group.	Yes: Third and fourth grade students had better school attendance.
Luftig (2003)	Yes: The treatment groups that attended summer school outperformed the control group that did not attend the program.	N/A	N/A
Schacter & Jo(2005)	Yes: The treatment group outperformed the control group in terms of comprehension and decoding. The treatment group did not perform better than control group only in decoding ability and only 9 months after the program ended.	N/A	N/A
Lauer et al. (2006)	N/A	N/A	N/A
Baker, Rieg & Clendaniel (2006)	N/A	Yes: 86% of students improved achievement on two standardized assessments over the course of the program 11% remained at the same level, and 5% decreased in achievement.	N/A
Mahoney, Parente & Lord (2007)	No: Students who attended engaging programs did not receive better school grades than those students who did not attend engaging programs.	No: Students who attended engaging programs did not receive better school grades than students who did not attend engaging programs.	Yes: Teachers indicated that students who attended more engaging programs had more social competence and intrinsic motivation.
Black et al. (2008)	No: Students who attended an enhanced after school program did not make statistically significant gains over the control group who attended regular after school programs.	Yes: Students who attended the enhanced program made 8.5% more growth on the SAT 10 than the control group who did not attend enhanced after school programs.	No: The treatment students did not make statistically significant gains in engagement, behavior, or homework completion. The program did not produce a negative effect on these behaviors.
Small & O'Connor (2008)	N/A	N/A	N/A
Beckett et al. (2009)	N/A	N/A	N/A
Bowman, Goetz & Dowling (2009)	Yes: The treatment group made statistically significant gains over the control group on the Developmental Reading Assessment and the Word List A.	N/A	Yes: 88% of students indicated that they believed they were good readers, and 94% of parents indicated that their children seemed more confident after attending the program.
Totals	8/11	6/7	4/5

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