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Preschool Connectedness: The Impact of Attending a School District Affiliated Prekindergarten Program on Student Success in the Initial Elementary Years

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by

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DECLARATION OF ORIGINALITY

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

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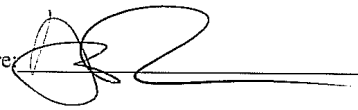
Signature:  Date: 12.17.09

PRESCHOOL CONNECTEDNESS: THE IMPACT OF ATTENDING A SCHOOL DISTRICT AFFILIATED PREKINDERGARTEN PROGRAM ON STUDENT SUCCESS IN THE INITIAL ELEMENTARY YEARS

Mandy Rose

This dissertation has been approved as partial fulfillment of the requirements for the degree of
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Abstract

Schools are seeking ways to address the achievement gap and yield increased performance for students to meet expectations outlined in NCLB. An examination of efficacy of pre-k program delivery models within a given community might assist districts in determining where to focus energy in an attempt to address the existing achievement gap. Many school districts overlook the years preceding kindergarten as a time to concentrate on needs of the student population. To determine if a relationship existed between the type of pre-k program attended and the level of academic success as well as social competency as measured by office discipline referrals in the early elementary years (k–3), student performance on AIMSweb benchmarking items, Missouri Assessment Program scores, and the number of office discipline referrals received per year were examined among three groups: former district-affiliated pre-k participants, former community-based pre-k participants, and former home participants. In addition, interviews were conducted with parents and kindergarten teachers. The independent variable in the study was participation for a minimum of one year in the district-affiliated pre-k program. The dependent variables in this study were AIMSweb benchmarking scores, Missouri Assessment Program scores, and the number of office discipline referrals received.

A single factor ANOVA determined that there was a significant difference in performance between the former district-affiliated program participants and those who spent their pre-k years learning primarily in the home environment. This difference was most apparent on the data analyzed at the third grade level. The overall analysis of the

data demonstrated that the former district-affiliated participants performed at a similar level to those who participated in a community-based pre-k program.

Results indicate that educational decision makers might benefit from an analysis of pre-k programming within their own community. This analysis might result in an understanding of the percentage of the population that is accessing pre-k programming and the percentage that is not participating in formal programming. It might also inform the district as to the most efficacious delivery model for their given population. They could utilize this information to determine if prekindergarten programming should become a focus from the school district perspective.

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Chapter 1 – Contextual Introduction

Background of the Problem

Since George W. Bush's initial decision to move forward in the creation and support of the No Child Left Behind Act of 2001, educational institutions throughout the Unites States have closely examined their instructional and systems approaches to learning. In January, 2001 when the No Child Left Behind plan was submitted for comprehensive educational reorganization to Congress, the President asked members of Congress to initiate a lively conversation focused on how the public could more efficiently utilize the federal government's role in schools (United States Department of Education [DOE], 2003) . His endorsement of this legislation caused them to examine more closely how to begin to narrow the achievement gap that existed among underprivileged and minority students and their non-minority peers.

With the birth of NCLB, many school districts began to ask themselves what could be done, in addition to what they were already doing, to eliminate the gap that exists between subgroups and increase the likelihood of meeting their newly defined target known as adequate yearly progress (AYP) for all students in grades k–12. The term AYP refers to the state-wide method in which a school district defines its success with regard to academic achievement for all students. The concluding AYP target is aimed at all students in all subgroups achieving proficiency, as defined by each state, by 2014. AYP has incremental steps defined for each year in between for each content area and subgroup (MO DESE, 2006). While there is no enforcement of AYP at the pre-k level, the researcher believes that the time spent prior to kindergarten can directly influence a student's performance at the elementary level where AYP is measured. Based on the

researcher's leadership experiences in both pre-k and elementary environments, the researcher views an essential component to closing the gap to be for all learners to have equal access to the experiences necessary to be best prepared to receive instruction upon kindergarten entry.

Significant efforts have been made to level the playing field for all students postkindergarten entry; however, the researcher believes a window of time prior to formal schooling could produce higher levels of student achievement. The 2002 report, *Inequality at the Starting Gate*, highlighted a necessity beyond the local level to transfer efforts to lessen the gap prior to children crossing the threshold into elementary school (Economic Policy Institute). Viewing this time prior to kindergarten as vital, many families make decisions to send their children to pre-k programs. For the purpose of this study, pre-k programs are inclusive of those with an explicit curriculum and learning focus. These types of programs differ from a daycare setting in that they intentionally place emphasis on the development of the child beyond providing a safe, nurturing environment. The programs serve children ages 3 to 5 years old. This choice requires the allocation of significant family resources. Often, the cost factor associated with attending a pre-k program automatically excludes some students from participation.

Statement of the Problem

This study investigated pre-k programs operating within ABC, Missouri. ABC is a suburb of St. Louis, Missouri, with a population of 27, 025, comprised of 90.8% Caucasian residents, 6.5% African-American residents, and 1.7% of residents that fall within the ethnic category of *other*, and with a median household income of $70,261 (MuniNetGuide, n.d.). Within the community of ABC, Missouri, there are 19 different

programs that serve students age 5 and under. These programs range in cost from $36/week for a half-day program to $275/week for a full-day program. The current available choices include only one program within the community that receives Head Start federal funding and bases tuition on a sliding-fee scale. ABC Early Childhood Center is the solitary early childhood program within the boundary of ABC that delivers services to the pre-k population and is affiliated with the ABC School District. Currently, the only students who can attend the program at ABC Early Childhood Center without regard to tuition costs are those children who qualify for early intervention services through a rigorous evaluation process defined by the Missouri Department of Elementary and Secondary Education.

There are five areas of development evaluated to determine eligibility. These areas include social/emotional, adaptive, physical, communication, and cognitive development. To be eligible for early intervention services by state criteria, a student must "fall 2.0 standard deviations below the mean in one area of development or 1.5 standard deviations below the mean in two areas of development" (Missouri Department of Elementary and Secondary Education [MO DESE], 2001, ¶ 1). These stringent criteria illustrate that a child must score immensely below their peers to qualify for a tuition-free placement. With the current structure of funding, the program at ABC Early Childhood Center is primarily capturing those students, ages 3 to 5, that have a diagnosed disability based on state criterion or those students whose families have the ability to allocate the required funds to pay for a pre-k experience.

The ABC Early Childhood Center is missing a critical group of students within their current population. In *Inequality at the Starting Gate*, the report demonstrated that

students from impecunious families enter their initial year of elementary school at a vast disadvantage, straggling far behind their peers in the prereading and premath skills that provide the base for future learning in core content areas encompassing math, literacy and other critical subject areas (Economic Policy Institute, 2002).

All children, unfortunately, do not begin their educational path on comparable levels. Math and reading scores for learners entering elementary school from the financially impoverished subgroup were 60% and 56% inferior, respectively, in comparison to those students on the economically advantaged section of the continuum (Economic Policy Institute, 2002). These students did not have a disability—only a disadvantage, a financial barrier that omits them from quality early childhood experiences. In summary, finances are an obstacle to participation in a pre-k program.

Aside from the varying tuition of pre-k educational institutions, there are other drastic differences that impact the experience that a learner has within program. Within the community of ABC, there are some early education centers that have been awarded accreditation through the Missouri Accreditation process that are held to a scrupulous set of standards defined by the state. These programs are reviewed annually through a systematic process, while other institutions are accountable only to their director(s) and the families who have selected that placement for their child's pre-k education.

The curriculum that is delivered, or the philosophical approach to teaching, differs dramatically among each pre-k learning community. Some centers use children's interest as their lens for making all instructional decisions, and others are standards-based. The hiring practices and teacher qualification standards vary among the programs depending on the specific criteria outlined within their policies. Some programs require certified

teachers to be the leading facilitators in their classrooms, and some have minimal educational requirements and do not require teacher certification.

The quality of pre-k instruction received by students who attend each of these programs fluctuates to a great extent even within a given community. The primary commonality among the programs scattered throughout the ABC School District attendance area is that their student population is comprised mostly of the students who will eventually transition to the ABC School District to begin their formal education.

There are many advantages that come as a part of affiliation with a school district, each of which ensure that participation in such a program will culminate to provide a positive learning experience for participants. Being a part of the district, the ABC Early Childhood Center administration is not only accountable to the Missouri Accreditation team, but also to the superintendent and board of education on a local level. The superintendent visits ABC Early Childhood Center frequently to engage in dialogue with the principal about what is occurring in kindergarten and beyond to provide continuity between the grade levels. An annual school improvement plan is written and submitted for review by the board of education. The progress on the plan is reported yearly to the all stakeholders of the ABC School District.

The hiring practices and staff development model at ABC Early Childhood Center directly mirrors those of the district. The school is led by a principal and an assistant principal, similar to other schools within the district. The lead teachers delivering the curriculum in the 4-year-old pre-k classrooms must hold a valid teaching certificate and participate in 15 clock hours of quality professional development activities annually.

The curriculum that ABC Early Childhood Center students receive is directly linked to the kindergarten curriculum being delivered throughout the affiliated district. The curriculum was written to prepare all students leaving ABC Early Childhood Center to thrive in the kindergarten environment specific to the ABC School District. When the ABC Early Childhood Center staff becomes aware that additional supports are needed for a student exiting the program to succeed, they implement a transition process. The transition between pre-k and the elementary setting occurs seamlessly for most students because the essential information has been communicated. If a student is receiving any modifications or adaptations, those details are articulated through a transition meeting structure. This process offers the receiving elementary team the opportunity to understand the specific strategies necessary to meet the needs of each learner from day one, thus maximizing instructional time. The students who attend other programs do not have a transition meeting structure as a part of their exit process and movement to the next instructional level.

Purpose of the Study

The purpose of this study was to determine the impact of attending a quality preschool that is connected to the receiving school district on student success in the early elementary years. This study examined specifically how attendance at ABC Early Childhood Center affected student performance in kindergarten through third grade (k–3) as measured by various local and state assessments. The researcher analyzed the performance on benchmarking items, Missouri Assessment Program scores, and office discipline referrals.

As a result of the proposed benefits associated with attending a district-affiliated preschool program, the students who attended ABC Early Childhood Center should demonstrate a higher level of student success as compared to their peers who did attended a community-based pre-k program or stayed home prior to transitioning to kindergarten. The purpose of this mixed-methods study was to explore the significance of participation in a minimum of one year of a pre-k program affiliated with the receiving elementary school district.

Research Questions

The following questions were addressed:

1. How do students who attended a district-affiliated program perform in comparison to their peers who attended a community preschool?
2. How do the ABC Early Childhood Center students perform in comparison to those who did not spend time in an early education environment prior to transitioning to formal schooling?
3. What impact does attending a minimum of one year of a pre-k program affiliated with the receiving school district have on academic success in kindergarten through third-grade?
4. What are the perceptions of the parents and district kindergarten teaching staff on children's participation in a school district-affiliated program?
5. What impact does participation in each of the pre-k settings have on academic and social readiness for success in kindergarten?

Independent Variable

The independent variable was attendance at ABC Early Childhood Center for a minimum of one year prior to kindergarten. The primary comparison group consisted of those students who attended ABC Elementary Schools in grades 1–4 during the data collection timeframe (Fall 2009), and formerly attended ABC Early Childhood Center. The other comparison groups were comprised of those who attended ABC Elementary Schools in grades 1–4 during the data collection time frame, and formerly attended a community-based pre-k program, or those who received their primary learning in the home prior to kindergarten entry. There was a comparison made between the each of the groups to determine which type of setting yielded the greatest results. During the data collection timeframe, the students from all groups were enrolled in a k–3 classroom within the ABC School District.

Dependent Variables

The dependent variables were academic performance on the local and state assessments as well as quantity of office discipline referrals measured across the grade year that the student was enrolled in during the 2008–2009 academic year. The study served to address the relationship between the independent variable and the dependent variables.

Hypotheses

Null Hypothesis #1

Students who attended a district-affiliated pre-k program will not exhibit a higher level of performance on district-wide AIMSweb benchmarking measures in their

respective grade level under study than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Null Hypothesis #2

Students who attended a district-affiliated pre-k program will not exhibit a higher level of performance on the Missouri Assessment Program (MAP) Communication Arts subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Null Hypothesis #3

Students who attended a district-affiliated pre-k program will not exhibit a higher level of performance on the Missouri Assessment Program (MAP) Mathematics subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Null Hypothesis #4

Students who attended a district-affiliated pre-k program will not exhibit a higher level of performance on the Missouri Assessment Program (MAP) Communication Arts and Missouri Assessment Program (MAP) Mathematics subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Null Hypothesis #5

Students who attended a district-affiliated pre-k program will not receive fewer office discipline referrals (ODRs) than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Null Hypothesis #6

There will be no significant difference in categories when comparing performance across the three groups (attended district-affiliated pre-k, attended community-based model, spent pre-k years in the home environment) in each of the measured variables listed in hypotheses 1–5.

Alternative Hypothesis #1

Students who attended a district-affiliated pre-k program will exhibit a higher level of performance on district-wide AIMSweb benchmarking measures in their respective grade level under study than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Alternative Hypothesis #2

Students who attended a district-affiliated pre-k program will exhibit a higher level of performance on the Missouri Assessment Program (MAP) Communication Arts subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Alternative Hypothesis #3

Students who attended a district-affiliated pre-k program will exhibit a higher level of performance on the Missouri Assessment Program (MAP) Mathematics subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

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and Missouri Assessment Program (MAP) Mathematics subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Alternative Hypothesis #5

Students who attended a district-affiliated pre-k program will receive fewer office discipline referrals (ODRs) than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Alternative Hypothesis #6

There will be a significant difference in at least one category comparing performance across the three groups (attended district-affiliated pre-k, attended community-based model, spent pre-k years in the home environment) in each of the measured variables listed in hypotheses 1–5.

Rationale for the Study

The researcher utilized performance data on a variety of assessment measures and involved a qualitative analysis of selected interviews with kindergarten teachers and parents in order to find specific trends that helped determine the impact of a district-affiliated pre-k experience on student achievement. The quantitative data was statistically tested using a single factor ANOVA. The significance of this study is that it would enable the ABC School District Board of Education to review empirical data related to participation in an early childhood program affiliated with the school district, with several possible outcomes.

First, an expansion in the current program may be developed. The program presently allows 97 students in the community to participate in a district-affiliated

learning experience for 4-year-olds. The enrollment projections for the ABC School District 2009–2010 academic year indicated that kindergarten enrollment would be approximately 356 students. The present maximum allotment of seats in ABC Early Childhood Center's 4-year-old pre-k program, as designed, would allow less than 30% of the future ABC School District kindergarten students an opportunity to participate.

The second outcome of this study could create a shift in the way the program is currently funded. ABC Early Childhood Center is a self-funded entity whose limited funding allows the administration to offer $50,000 in annual scholarships, or approximately 5 out of 265 program seats at a reduced tuition rate. If the results illustrate that those children from the home group perform at a lower level than those from the two other groups, then this creates a strong argument for the program being offered at a reduced cost to an additional number of families.

Generalizations of the Study

The findings of this study could be applied to districts with demographics similar to the ABC School District. The study district has one early childhood program that distributes students across five elementary schools. It is imperative that districts utilizing the findings have an early childhood program that exhibits a collegial working relationship with the staff at the receiving elementary schools, have access to the same resources as other k-12 schools within the district, and follow parallel district processes that serve to increase the level of cohesion across the pre-k through 12th grade program.

Limitations of the Study

Instructional approaches. The participants in this study all attended an elementary school in the ABC School District. There were five possible locations for a student to

attend elementary school within the study district. While ABC offers a wide array of quality professional development experiences to support teachers, there is still a variance in the level of instruction that a student receives from classroom to classroom. Through a random sampling of participants, the study was designed so that the selected students were representative of all school sites. Additionally, a conscious decision was made to omit any student in grades k–3 who was not enrolled in ABC School District upon kindergarten entry and had not been enrolled for the duration of his/her elementary school experience, thus minimizing the differences in instructional approaches beyond the study district.

Testing environment. In the taking of the various benchmarking assessments in all grades and the Missouri Assessment Program at the third-grade level, the students were administered these tests in various environments. A variety of individuals proctored the tests in different locations across the district. While the environments were in different physical locations, the schools were all similar to each other in design, space, and lightning. The individuals who administered each of the tests received consistent training and were probed by building leaders to determine that they had an adequate level of knowledge with regard to how to administer a test in a standardized manner.

Incomplete data sets. In the event that a student was selected on a random basis and was missing data points, the researcher made a decision to remove that particular student's data from the study. The researcher wanted continuity in data points across the grade level relative to the individual student.

Limited Access to Subgroup. One limitation of this study related to subject population was the lack of access to a large pool of learners from low socioeconomic

families who had previously accessed ABC Early Childhood Center and were attending ABC elementary schools. Ideally, a larger number of students who met the criteria would be desirable to better understand the impact of attendance in relation to this subgroup.

Definition of Terms

Adequate Yearly Progress (AYP). The state-wide method in which a school district defines its success with regard to academic achievement for all students. This concept, which originated through No Child Left Behind legislation, is a target aimed at all students in all subgroups achieving proficiency, as defined by each state, by 2014. Adequate yearly progress has incremental steps defined for each year in between for each content area and subgroup. The subgroup performance is connected to receiving Title I funding. In the state of Missouri, the MAP test scores serve as a primary source for measuring AYP (MO DESE, 2006).

AIMSweb. A series of tools for systematically screening and monitoring the progress of individual students in the areas of literacy as well as math. These tools are norm-referenced. The use of these tools as a part of the instructional process can greatly assist schools in honing in on an area of concern and point decision makers in the right direction for selecting the appropriate intervention (Pearson, 2008).

Community-based early childhood program. A program targeted at supporting a child's development that is located within the community, yet has no formal affiliation with the local school district.

Early childhood program. A formal educational program with the mission of supporting a child from a developmental standpoint in which a child participated in between the ages of 3 and 5, prior to entering the kindergarten year.

Missouri Assessment Program (MAP). A test that is authored by a company assigned by the Missouri Department of Elementary and Secondary Education (MO DESE). It is designed to measure an individual student's progress relative to their respective grade on goals written at the state level. Students attending schools that are publicly funded throughout Missouri take this assessment. The assessment is administered beginning in grade 3 and given in specific content strands through grade 12. The data has the potential to be disaggregated by subgroup and analyzed by content item. This is a measure that is used to determine if a school has achieved adequate yearly progress (MO DESE, 2009).

No Child Left Behind (NCLB) legislation. Legislation approved under George W. Bush's leadership in 2002 with the primary purpose of increasing accountability across the nation for children in the public school settings. It clearly articulates the expectation that each and every student should be performing at a level of proficiency, as defined by individual states, by 2014 (MO DESE, 2006).

Office discipline referrals (ODR). The form used to collect information with regard to behavioral incidents for individual students across the ABC School District. The form reflects location of incident, description of incident, possible function of behavior, and action taken on behalf of the adult involved. These referral forms are entered into a data management system to allow the number of incidents and related information to be reviewed at any time to help inform decision making.

Positive behavior supports (PBS). This is a school-wide systems approach to producing and supporting desired positive behavior changes in students experiencing social challenges. It is accomplished through a series of alterations made to the learning

environment. This approach consists of defining what is meant by positive behavior by each learning community. Once the desired behaviors have been defined, there is a focus on preventing problem behavior, directly teaching appropriate behavior, and reinforcing the positive behavior when observed. The foundation for this approach rests on the formation of positive relationships. A comprehensive team representative of administration, counselors, teachers and related personnel makes decisions for individual, targeted, and school-wide interventions based on data. The interventions utilized are to be research-based in nature (Association of Positive Behavior Support, 2007a).

Prekindergarten program (pre-k). A formal educational program with the mission of supporting a child between the ages 3 to 5, prior to entering the kindergarten year, from a developmental standpoint.

Student success. Within the design of this study, student success is defined as a combination of academic performance and social competency in grades k–3. Academic performance encompasses AIMSweb benchmarking assessments as well as ranking on the Missouri Assessment Program test at grade 3. The measure for social competency in relation to this project is office discipline referrals.

Summary

There are a variety of pre-k programs that differ drastically with regard to quality, learning outcomes, and level of connection to the receiving elementary school district. The relationship between attending a program affiliated with a school district and student achievement in grades k–3 was investigated. This was accomplished through the examination of a variety of assessment measures at each grade level between kindergarten and third-grade to compare academic achievement of the primary group to

the other comparison groups. The prediction was that involvement in a district-affiliated program would produce significant academic gains and increased social competency as measured by the number office discipline referrals received. This would enable the school board to consider expanding their pre-k program and allocating adequate resources to offer access to additional students across the community.

In chapter two, the focus will be on reviewing literature related to the impact of participation in various pre-k programs on student performance in the early primary years. Research will be reported that examines the impact of participation in a pre-k program on different content areas, the markers of program quality, and the effect of the contrasting delivery models.

Chapter 2 – Review of Literature

History and Effects of Participation in Pre-K Program on Elementary Success

The review of the literature focuses on the impact of a pre-k experience on later success at the elementary level. The following areas were examined: history of preschool programming, impact on academic achievement in relation to literacy and math at the elementary level, impact on social competency at the primary level, effects of participation in a pre-k program on various subgroups, and efficacy of low-quality versus high-quality programs.

History of Pre-K Programming

Preschool programming began many years ago. The first preschool efforts were informally in operation as early as the beginning of the twentieth century (Social Issues Reference, n.d.). These early programs often evolved out of the necessity of women taking turns serving as caregivers for each other's children as some of them began careers beyond the home environment. Even in this earliest times, the women seemed to have an understanding that much could be learned in the initial years of a child's life. The first known public preschool program was launched in 1925 and was supported by the Chicago Women's Club in Chicago, Illinois (Social Issues Reference, n.d.). Participation rates in pre-k programs have soared since its inception. Within a span of 30 years from 1970 to 1998, the attendance rate increased from 20% of the qualifying population to more than 50% participating in full-time programming (Social Issues Reference, n.d.).

Another monumental moment in pre-k history happened in 1965. It was in this year that the recommendations for the upcoming Head Start program were drafted (Pennsylvania Head Start Association, n.d.). The purpose of this program origination was

to meet the needs of preschoolers living in poverty (Pennsylvania Head Start Association, n.d.). It was to be an avenue for those children to begin accessing early intervention programs at a reduced cost with great hopes to break the cycle of poverty. It has spanned the years from its origination to the present time to afford many children in poverty-stricken families access to a pre-k program where they might not otherwise have such an opportunity and has produced mixed results.

Academic Impact

Recent research has recognized that quality early education can generate considerable gains in a child's overall growth as a learner. The bulk of research prior to 1998 appeared to focus on the examination of early education and its impact on the intelligence quotient scores of individuals from lower socioeconomic families. This early research demonstrated that participation in pre-k programs rarely produced everlasting gains in terms of IQ. However, more recent studies have assessed the impact of early education from broader perspective. Because of the multitude of studies that have recently produced results reflecting the positive effects of enrollment in a preschool program, Georgia's former senator, Zell Miller, has referred to preschool as "the most important grade" (Barnett & Hustedt, 2003, p. 54).

Multiple studies have demonstrated that there are numerous benefits associated with participation in an early education program. Two recent reports from the National Institute of Early Education Research (NIEER) illustrated, through a thorough review of the data, that state-funded pre-k programs are providing positive outcomes for the children who access such a program (Barnett, 2008a; Barnett, 2008c).

The first study focused on examining the long-term effects of the Arkansas Better Chance Program. This program is similar to Head Start in that it was intently designed to serve an educationally deprived population of children. The sample was ethnically diverse, with children representing five different groups. The top percentages included 36% African-American and 57% Caucasian (Hustedt, Barnett, Jung, & Thomas, 2007). It investigated specifically a sample of 911 children across the state of Arkansas, both participants and non-participants in the program, in terms of how they were performing in kindergarten as well as at the culmination of their first-grade year in the content areas of mathematics, language, and literacy. The researchers found positive and statistically significant outcomes related to these content areas. The children who participated in the program outperformed their peers who did not access the program in the measured content areas. The second study investigated the impact of participating in New Mexico's pre-k program on school readiness upon kindergarten entry. The findings of the second study were analogous to those in the first study (Barnett, 2008c).

Another recent large-scale study echoed the findings of the Arkansas Better Chance (ABC) Program. Gormley and his contemporaries measured the skills of over 3,000 students transitioning to kindergarten in Tulsa, Oklahoma and found that those who spent time as a participant in the state's preschool education program demonstrated increased ability in reading, math, and writing skills in comparison to those children who did not access the public preschool program (Gormley, Gayer, Phillips, & Dawson, 2004). This study found that children who enroll in a program such as Tulsa's, where state-funded pre-k has been offered universally for the past ten years, have the potential to advance in prereading and prewriting skills an average of three-quarters of a year

ahead of peers who did not participate in a comparable program. In addition, students demonstrated gains of almost half a year in premath skills (Toppo, 2008). “These findings from a large and rigorous study provide strong evidence that preschool education for all has positive impacts for all children, especially those in poverty,” said NIEER Director Steve Barnett (Barnett, 2008b, p. 7).

Another study, the Abbott Preschool Program Longitudinal Effects Study (APPLES), was designed to determine if the academic gains made from participation in pre-k sustained through the conclusion of the kindergarten. The APPLES study found that, regardless of program setting, the 766 children who attended a program similar to that of the Abbott Preschool Program demonstrated enhanced skills in language, literacy, and math (Frede, Jung, Barnett, Lamy, & Figueras, 2007). These advances were indeed evident through the close of their kindergarten year. The APPLES study also found that children who were able to attend the program for at least two years significantly surpassed those who attended for just one year. The gains made in the area of verbal communication and math, as a result of two years of attendance in the program, were nearly twofold for language and 70% larger for math (Barnett, 2008a).

Fratt (2005) highlighted the importance of focusing on preliteracy skills prior to a student beginning first grade. She illustrated her point by stating that “. . . literacy is more like a light bulb on a dimmer switch that gradually brightens from children’s early years” (Fratt, p. 31). From her perspective, preschool experiences build the foundation for future literacy victories. “Nationally, we are in the middle of a big shift with educators beginning to understand the links between preschool, kindergarten, and literacy

development, but this isn't emphasized in many preschools," said Cathy Roller, director of research and policy for the International Reading Association (Fratt, p. 31).

Social and Emotional Impact

Multiple research studies have demonstrated that access to quality pre-k programs can impact the learner in additional areas of development beyond that of cognitive and pre-academics. The review of up-to-date studies has evidenced that high quality pre-k can positively influence the overall social and emotional development of a learner. The research has shown that there are both short-range and long-range gains in relation to systematic approaches to social development in the pre-k years.

The High/Scope Perry study demonstrated that quality pre-k led to an overall lower incidence of adulthood crime for those who accessed the program as compared to those who spent their early childhood years in the home (Schweinhart, 2004). This longitudinal study on those adults who participated in a pre-k program evidenced that an initial investment certainly paid off by leading to fewer crimes committed and higher income levels compared to non-participants, thus less impact on the economy many decades later (Schweinhart, 2004).

Another study that focused on the Chicago Child-Parent Centers established that program participation for at-risk children led to greater ease in relation to social adjustment over the years, a lesser incidence of criminal acts, and higher salaries in participants (Reynolds, Temple, Robertson, & Mann, 2001). The landmark Abecedarian Project, which focused on African-American children from low-income family units, also exemplified that a lasting benefit of pre-k participation was a greater rate of high school

completion and increased likelihood of enrolling in postsecondary programs (Haskins, 1985).

In examining instantaneous benefits, the kindergarten year serves as a timely environment for unveiling the impact of participation in a program that promotes social development in the learners. In a 2005 survey, kindergarten teachers reported that approximately 20% of learners transitioning to kindergarten were lacking essential skills in the social and emotional arena to be successful in the elementary environment. In the event that the student was from a low-income family structure, the number of those unprepared to succeed from a social–emotional perspective rose to 30% (Boyd, Barnett, Bodrova, Leong, & Gomby, 2005).

These studies demonstrate that long before a child transitions to kindergarten, social and emotional development need to remain at the top of the priority list. There are several features that come together to define the social and emotional development of a child. The National Scientific Council on the Developing Child (2005) defined these to include

> . . . the ability to identify and understand one's own feelings, to accurately read and comprehend emotional states in others, to manage strong emotions and their expression in a constructive manner, to regulate one's own behavior, to develop empathy for others and to establish and sustain relationships. (p. 2)

When students arrive in kindergarten with the absence of these skills, the teacher has to sacrifice instructional time to focus additionally on social development. Through observation, teachers have determined that children who struggle socially are not in the optimal state for receiving instruction regardless of the level of teacher quality.

Consequently, the time typically devoted to academics is spent simply preparing the students for learning.

Many teachers are aware of the academic sacrifice that is made when the primary focus becomes the social and emotional development of the student. Therefore, they would place social competency paramount to preacademic skills. If they were to prioritize what they would desire most for the children coming to them to possess, it would be adequate social skills. In terms of rating the importance of skills needed to be equipped for kindergarten, teachers and parents have long voiced differing perspectives on what they deem most central for maximizing academic achievement (West, Hausken, & Collins, 1995).

Parents tend to place heavy prominence on traditional preacademic skills such as letter identification and number recognition (West, Hausken, & Collins, 1995), while as early as 1995, teachers were increasingly concerned with social development. The parents often view school as a forum where students seem to succeed if they have a basic understanding of the preacademic skills. However, the parents often do not consider the fact that the children must possess the social skills necessary to interact with one another, arrive at a compromise on a frequent basis, and follow routines as a community of learners. The teachers are aware of the necessity of children to demonstrate social competency to survive the group dynamics. Because of this awareness, teachers rated student motivation level and social skills to be of higher value to students thriving in the classroom than the children's ability to demonstrate conventional knowledge of numbers and letters (West et al., 1995).

There are consequences associated with a student entering kindergarten unable to successfully work within the group dynamic inherent in the elementary classroom. If children do not arrive in kindergarten possessing the necessary level of development in the social arena, then time is sacrificed to further develop the social skills that could be spent on academics. Learners who experience challenges socially regularly have difficulty maintaining attention to task, memorizing pertinent information, and functioning with peers in the group setting (Bronson, 2000). Markers for children who are socially prepared for the rigor of kindergarten indicate that their connections with peers evolve recurrently into companionships, that they can negotiate with peers in a range of situations, and utilize their communication skills in an effective manner with others (Huffman, Mehlinger, & Kerivan, 2000).

A number of recent research studies demonstrate correlations with regard to the level of social successes experienced by those transitioning to elementary school. These correlations are directly associated with gender, ethnicity, and income level. Research has demonstrated that male kindergarten learners demonstrate positive social behaviors to a lesser degree than their female counterparts. A 2003 study with a sample size of 17,121 illustrated that male students exhibited positive social behavior 79% of the time in comparison to the female students who maintained pro-social behavior 83% of the time (Child Trends, 2003). For the purpose of the study, positive social behavior was measured with relation to effort needed to join in play, ability to initiate/sustain friendships, and positive interactions with peers (Child Trends).

The results of this study highlighted that the group at greatest risk to be at a disadvantage socially was those children from the lowest socioeconomic level, regardless

of ethnicity. The positive social interaction rate of those from the lowest socioeconomic level was 71% compared to peers from the uppermost socioeconomic level that performed at a rate of 84% (Child Trends, 2003). This could be due to a lack of opportunities for the children to practice social skills across multiple environments. In addition to SES impact, the study also examined rate of demonstration of positive behavior within different ethnic groups. The Child Trends (2003) research found that the class of race most likely to reveal positive behavior was non-Hispanic Caucasian children. Their rate of demonstration of positive behavior was 85%, followed by non-Hispanic black children at a lesser rate of 81%. The study found the ethnic group least likely to exhibit positive social interactions to be those students of Hispanic descent at a rate of 73% (Child Trends, 2003).

The above-mentioned data illustrates that a growing number of learners are making the transition into the elementary years socially ill-prepared. Their social challenges result in negative consequences in terms of their academic capacity to learn. They often expend their energy in an unsuccessful attempt to build relationships with others. This leaves nominal energy to focus on academic tasks, follow teacher directives, and participate in class. Over time, the cumulative effect of these unproductive attempts can lead to antagonistic and aggressive acts across multiple school environments (Boyd et al., 2005).

The above summary of research through the recent years demonstrates the urgency of intentionally supporting the social and emotional development of a child in the early years. The research summarized supports the notion that pre-k participation in a quality program equates to positive social development in a child.

However, there is research that has demonstrated the converse. The National Institute of Health and Human Development (NICHD) Study of Early Child Care (2006) found that too much time in a pre-k group environment could have adverse effects on social development. The study concluded that children who exceeded 30 hours in a given week in a lower-quality early education program sometimes demonstrated more problematic behaviors in the kindergarten year than their peers who spent fewer hours in a similar setting and appeared to cooperate with others to a lesser degree (NICHD, 2006). The possible reasoning for this might be that given the extended day, the children had more time to spend with the group in negotiating an increased number of conflicts. After being in a group setting for an entire day, the children appear to demonstrate a lesser amount of patience, which influences their ability to resolve conflicts peacefully. This could cause them to resort to using aggressive tactics, such as hitting or verbal exchanges, in an attempt to arrive at a solution. Over time, they might habituate these mistaken behaviors as their initial means of working through a peer conflict.

While the Abecedarian Project highlighted the long-term positive effects of pre-k, the initial transition to the primary grades was marked by a more outward aggression for participants in comparison to their non-participatory peers. Those who followed the participants of the project found that this behavior declined by the peak of a child's elementary career (Boyd et al., 2005). However, it is difficult to decipher if these children became aggressive because of their experience in pre-k programs or if they might have demonstrated aggression, which caused their parents to enroll them in a program to try to address these concerns in a systematic manner.

The impact of early education programs on social and emotional development of children certainly varies as a result of overall quality approach to development. Although the social benefits of pre-k are not definitively proven by research, experts do agree on key features that assist the development of the child. The research demonstrates that there are key features of programs that assist the development of a child in the social domain to a greater degree. Students who participate in a program that adopts an approach that is characterized by children actively planning and reflecting as a part of their daily learning experience have increased probability for entering the elementary years as a socially competent learner (Epstein, 2003). As children practice the process of planning and reflecting, they eventually morph into decision makers and problem solvers. They then begin to become increasingly answerable for themselves and their personal actions, which leads to a higher level of social responsibility.

In addition to experiencing opportunities to plan and reflect, there are additional components of programs that lead to more refined social development. NIEER recommended that programs intentionally focus on emotional growth just as they do cognitive advances (Boyd et al., 2005). This intentional approach should be mapped out in a systematic fashion with standards expressing desired outcomes. NIEER also recommends that all programs be examined with regard to overall quality level (Boyd et al., 2005). This suggestion is critical; as research has shown that the level of quality of a program either promotes or hinders social development. Among the recommendations, NIEER also emphasizes the importance of teachers and principals having access to effective professional development experiences and staying informed of best practices in the field (Boyd et al., 2005).

Another collaborative problem-solving approach to the social and emotional development of a child has resulted in success in grades kindergarten through 12th grade and is rapidly gaining momentum at the early childhood level (Stormont, Lewis, & Beckner, 2005). This early intervention approach is known as positive behavior support (PBS) and, by design, is a three-tiered model of supporting students from a behavior standpoint. PBS focuses on schools developing coherent discipline systems, determining primary prevention strategies specific to each site, developing a menu of research-based strategies for emotionally supporting students, and data-driven decision making (Frey, Lingo, & Nelson, 2008).

There are three layers of support within the PBS system (Association of Positive Behavior Support, 2007b). The largest layer, known as the school-wide system of universal supports, focuses primarily on prevention. All students within a given learning community experience the universal supports within the design. From the school-wide universal level, the model then moves to designing specific expectations for classroom practices, non-classroom practices, and most narrowly to individual plans (Frey et al., 2008). The primary intention of developing PBS within a learning organization is to proactively define, directly teach, and reinforce what the organization deems to be appropriate behavior that will span across multiple school settings (Stormont et al., 2005).

Although gaining attention at the pre-k level, there has been limited research to produce data that mirrors the findings in grades k–12. The barriers that pre-k environments face with regard to the implementation of this tiered model include lack of appropriate ongoing professional development and resources (Frey et al., 2008). In

addition, there is also a challenge when it comes to examining office discipline referral data. Typically in the elementary environment and beyond, there is data collected with regard to the number of office discipline referrals with specific information such as location, time, and setting related to each incident. In relation to the students in the pre-k environment, the data lacks precision. The teachers seem to manage more behaviors at the classroom level in the pre-k environment because sending children to the principal's office does not seem to be developmentally appropriate. However, those beyond the pre-k environment practice that as a regular consequence of mistaken behavior. Therefore, each trip to the office is accompanied by an office discipline referral form and produces more accurate data regarding behavior incidents within the school.

Subgroup Examination

The achievement gap upon school entry is readily present. Studies have unveiled that the gap is apparent early on and widens over the course of a student's academic journey. It is even measurable as early as 4 years of age. Research demonstrated through a recent study that the distance between African-American and Caucasian children at 4 years old ranged from ". . . one-tenth of a standard deviation unit (on fine motor skills), one-fifth of a standard deviation unit (on measures of expressive language), to one-half of a standard deviation unit (on measures of vocabulary and overall mathematics knowledge and skills)" (Wang, 2008, p. 30).

Gaps of similar size have been noted within the first year of elementary school. In their 2005 study, Rock and Stenner used multiple assessments to measure school readiness to examine the achievement gap prior to kindergarten between African-American children and Caucasian children. Through this rigorous study, they

calculated that the at-school entry ranged from below half of a standard deviation to one standard deviation on math, reading, and vocabulary measurements of school readiness (Rock & Stenner, 2005).

The results were favorable for the Caucasian children. The variance outlined above was dependent upon the particular assessment used. Results from a sample that was representative of the national level of kindergarten-age children illustrated that with regard to math achievement, African-American children and children of Hispanic origin scored two-thirds of a standard deviation below their Caucasian kindergarten peers. In the examination of reading achievement, African-American and Hispanic learners scored half of standard deviation below the Caucasian children in the study sample (Magnuson & Duncan, 2006). As stated earlier, the researcher believes that the lack of related experiences and exposure to real-world experiences as well as inability to participate in a systematic program in the pre-k years serves as contributing factors to the disparity of performance between various subgroups.

The studies examining the efficacy of preschool have shown that participation in an educational program prior to entering formal schooling impacts this achievement gap among various subgroups differently. Fuller believed that level of funding for early education access should be reflective of the family's income level. Fuller said, ". . . research has shown that children from poor families get the largest boost from high-quality preschools" (Glod, 2007, p. A01). His review of research has reinforced his beliefs in relation to funding formulas.

When conducting a study in 2005, Chicago Child-Parent Centers researchers found that learners from low-income families increased their probability of completing

high school by 30%, decreased their odds of being retained a grade by 40%, and decreased their likelihood of being detained in their teen years if they had a quality pre-k experience. Preschools have truly succeeded by increasing the odds that all children will thrive to the best of their ability in school. Approximately 90% of the students who are struggling readers in first grade will still be experiencing high levels of difficulty even in fourth grade (Ride the preschool wave, 2005).

The wealth of data produced from the many long-term studies reveals that the odds are against the children who fall behind so early on in their elementary career. The difference a quality early education makes highly correlates with achievement from day one of the elementary experience. These are the children who have the most obstacles standing between them and a quality preschool experience. Many of these families are unable to allocate resources to afford their children this opportunity. The early education system needs to be significantly refined in terms of access. Bruce Fuller, lecturer of public policy at the University of California at Berkeley, serves as a leading advocate of financial support for preschool based on family income. “We need to focus scarce school dollars where the benefit is the greatest and that’s to children from low-income and blue-collar households,” Fuller said (Glod, 2007, p. A01). “If dollars are sprinkled across all families rich and poor, it’s illogical to think early learning gaps will be narrowed” (Glod, 2007, p. A01).

Not only is access for all an issue, but the quality of many programs that children of different subgroups are able to access is questionable. The families who cannot allocate the funds to access high-quality programs sometimes result to having their children participate in lower-quality programs or depending on a family member to

provide the care for their child. The research shows that many programs are inadequate but has difficult examining the quality of experiences that occur in the home. It boils down to the amount of interaction and understanding of development by the caregiver in terms of the quality of experience in the home. It is nearly impossible for researchers to quantify the level of quality related to each experience in the home environment. While quantifying the quality of the home experience poses a challenge, the *State of Preschool* 2007 yearbook compiled and published by the National Institute for Early Education Research (Barnett, Hustedt, Friedman, Boyd, & Ainsworth, 2007) highlighted that while enrollment has increased to greater than one million children in state-funded pre-k programs, many of our youngest learners are still without access to quality pre-k programs. According to NIEER, eight out of ten children in the nation attend preschools that are inadequate. The researchers have determined that those least likely to attend a high-quality program prior to transitioning to elementary school are from Hispanic and African-American backgrounds (Barnett, 2008e).

Quality of Programming

Quality appears to be an operative word when referencing pre-k programs. It is not sufficient to simply offer a nurturing environment for these children. It is critical to have a strong educational focus that can assist in the development of pre-k students' emerging academic and cognitive skills. The National Association for the Education of Young Children has set standards for preschool quality, based on research and best practices.

The environment is essential when it comes to maximizing learning in an early childhood classroom. The leaders in research aimed at the pre-k learning environment

have published recommendations with regard to class size. The National Association for the Education of Young Children (NAEYC) has illustrated through their studies the importance of maintaining small teacher-to-student ratios (Mead, 2008). Quality pre-k classrooms are staffed at all times so that they do not exceed a 1:10 teacher-to-student ratio (NAEYC, 2008). In the High/Scope Perry Preschool Project and Carolina Abecedarian study, which demonstrated that participation in quality pre-k had long-term economic gains, the teacher-to-student ratio was at most 7:1 (Ackerman & Barnett, 2006).

NAEYC has shown not only that class size and student–teacher ratio matters, it also strongly suggested that within these small classrooms, a research-based pre-k curriculum should be delivered and designed to address multiple areas of development. These integral areas take account of language, literacy, math, and social development (Mead, 2008). The pre-k curriculum should not be a stand-alone document; it is imperative that it be written to mirror state standards as well as the kindergarten curriculum of the receiving school district.

As is true of a k–12 learning experience, teacher quality is essential to student success in the early years. Researchers at the National Center for Early Development and Learning (NCEDL) have identified the following set of teacher behaviors that are connected to better learning within the pre-k environment. These include ". . . explicit instruction in key skills, sensitive and emotionally warm interactions, responsive feedback, verbal engagement/stimulation, and a classroom environment that is not overly regimented" (Mead, 2008). The teachers who present high-quality experiences for the students are engaged in ongoing assessment to drive what should explicitly be taught to

the students as individuals. These teachers not only provide a rich academic setting, but also an emotionally and physically safe learning environment to assist the learners in taking risks in the classroom. They offer specific feedback to the learners and work diligently to build meaningful relationships with each of them. Research has shown teacher quality is often dependent upon the teacher's number of years of formal education and professional development experiences.

Teacher Education and Development

From a historical lens, reform efforts related to low achievement in public education have placed emphasis on a multitude of areas aside from teacher quality. Some of these focal points have been school leadership, class size, parental involvement, and the development of multicultural curriculum, but the developments made in the named areas have yet to address the power that directly lies in the hands of the individual classroom teacher (Ganley, Loop, & Quintanar, 2007).

Lack of proper attention to teacher quality has also has been the case in the years of education prior to kindergarten, in which ample emphasis on teacher preparation and quality is not common practice. In 2004, 70% of teachers and administrators in the field had attended college for some amount of time; however, only 33% had completed the requirements of an undergraduate program (Herzenberg, Price, & Bradley, 2005). The path of preparation for teachers at the early childhood level is equally as diverse as other aspects of pre-k programs described in this review of literature. At this point, there have been few formal state or national standards adopted to guide higher-education program design for turning out quality early childhood educators. NAEYC has developed a

timeline for meeting the teacher qualification guidelines to receive accreditation by their standards.

The governing body of NAEYC has determined that by 2010 the following must happen in order to maintain accreditation from their organization: (1) all teachers possess a CDA awarded by the Council for Professional Recognition, (2) a minimum of 50% of teachers hold an associate's degree, (3) a minimum of 25% of teachers have acquired an undergraduate degree, and (4) all must have or be enrolled in an associate's or baccalaureate-level program. Continuous progress toward these standards must be documented in the annual report submitted by each accredited institution (NAEYC, 2006). While NAEYC has conveyed strong recommendations about the desired qualifications for teachers of pre-k students, the certification and educational level of the teachers hired to facilitate the learning in early childhood classrooms is ultimately in the hands of those responsible for hiring at each early childhood center. At present, no written criterion exists stating that all early education programs must receive accreditation to continue serving children and their families. Additional focus for program leaders has shifted in recent years to more closely examine the skills and knowledge of pre-k teachers, but the field is still saturated with educators who have received a minimal amount of formal training. Major disparity exists among the training of the average early childhood professional and the increasing demands placed on these teachers by parents and policy makers (Bowman, Donovan, & Burns, 2001).

Early childhood teachers are being required through increased expectations to create an environment where all learners achieve their full potential and adequately respond to students' needs as individuals. Early education professionals are beginning to

have the same demands placed on them as their k–12 counterparts, yet their compensation levels do not reflect the increased standards and expectations. In 2003, the average amount earned per hour for pre-k teachers in Missouri was $9.52, which equates to a mean annual salary of $19,800. In that same fiscal year, their counterparts teaching kindergarten in Missouri received an average yearly income of $32,790 (Center for Childcare and the Workforce, 2004).

The inadequate training and low rate of pay makes it difficult for an early childhood program leader to recruit as well as retain highly qualified teachers. These factors contribute to a high rate of turnover in staff at the early childhood level. Turnover at this level continues to exceed 30% annually (Lombardi, 2003). The early childhood classroom often serves as a training ground for those that transition to teach primary grades at the elementary level. The systematic standards for elementary education and considerably higher salaries make it difficult for a teacher to remain in the pre-k environment.

The depth of understanding and skill set of teachers have been demonstrated repeatedly through various research studies to be among the most significant factors related to the level of student achievement (Brophy & Good, 1986; Darling-Hammond, 2000; Marzano, Pickering, & Pollock, 2001; Wright, Horn, & Sanders, 1997). However, many states permit these educators of the youngest learners to teach without any professional preparation, while others have preservice requirements that range from a week of orientation to four years of college (Bowman et al., 2001). This point, illustrated time and time again in research, needs to be addressed through the creation of uniform minimal standards for those educating the youngest learners.

The focus on teacher preparation need not stop at the establishment of minimum educational requirements. The critical piece of the teacher quality puzzle in addition to formal education is in-service education. Galinsky and colleagues (1994) discovered that site-based coaching experiences are a rarity when it comes to professional development targeted at early education and care programs. The professional development delivery model in early childhood is often fragmented and designed with a "one size fits all" mentality.

The "one size fits all" model should not be the tactic for further development of teachers at the early childhood level, given the diverse education and qualifications of these professionals. The professional development map must be individualized for each adult learner. The approach to professional development must encounter the educators where they are with regard to their level of education and degree of experiences to result in meaningful learning that will translate into classroom practice.

Multiple researchers have highlighted characteristics of effective professional development models relevant to early childhood. They have found that flourishing in-service experiences are reflective of the following traits: (a) opportunities to apply what has been learned, (b) an ongoing delivery of a concept, as opposed to isolated workshops, (c) instruction individualized to fit the adult learners' needs, (d) on-site mentoring following the delivery of material, and (e) frequent feedback offered in a timely manner (Epstein, 1993; Klein & Sheehan, 1987; Venn & Wolery, 1992).

By all accounts, the teacher preparation programs and the learning opportunities offered to pre-k educators needs to become the foremost focus of those making decisions at each early childhood center. If the expectation is that early childhood educators are to

meet the children where they are in their learning through the use research-based strategies, then they must receive the education and training necessary to accomplish this enormous task. It is likely that a teacher lacking ample training will not be effective in the implementation of a curriculum regardless of the quality of the curriculum to be utilized or the alignment of that curriculum with kindergarten standards.

Curriculum Standards and Alignment

Prior to 2003, every state had established standards for k–12 institutions to clearly articulate learning standards specific to each grade level in a variety of content areas. Similar to the shift toward the defining of learning goals in elementary through the high school years, many state-level organizations are in the initial stages of linking curriculum to standards at the pre-k level (Scott-Little, Kagan, & Frelow, 2003). Until this task is complete and all early education centers are required to meet these standards, there will continue to be considerable variance in the type of experiences a child has with regard to curriculum and instruction prior to kindergarten entry.

In a 2003 position statement, NAEYC suggests that curriculum be implemented that is thoughtfully planned, challenging to all learners, highly engaging, and developmentally appropriate for each targeted age level. The organization also desires that it be culturally and linguistically responsive in nature (NAEYC, 2003). They feel that if this is the case, it will likely produce positive outcomes for children.

The recommendations for the implementation of an effective curriculum outlined above are further supported through several indicators of effectiveness defined by NAEYC. The primary indicator of an effective curriculum is that the children are intentionally active and engaged (NAEYC, 2003). This engagement encompasses

cognitive, physical, social, and artistic development. If occurring, this engagement fosters a positive attitude toward learning for the years ahead. This was demonstrated through a recent study focused on the universal pre-k program for the state of Georgia. A universal pre-k program means that all children who want to participate can access the program without regard to tuition; however, it is not mandated that all children attend. Georgia has curriculum standards that encompass seven content areas: creative expression; literacy, mathematics, science, social and emotional development, and social studies. The data specific to this study illustrated that 82% of learners who participated in the state's universal pre-k program scored average or higher on indicators related to success for third grade when reviewed against national norms (Gormley et al., 2004).

A second key indicator of effectiveness is that the curriculum being delivered contains clear goals and is evidence-based in nature (NAEYC, 2003). The clear goals outlined in an effective curriculum are communicated to all stakeholders connected to the specific learning community. When the goals are articulated to all who have a vested interest in the success of the program or learner, there is a level of accountability to follow. The goals communicated to the stakeholders must be based on evidence that is developmentally appropriate, linguistically relevant, and culturally responsive for all learners who participate.

Another significant indicator of a suitable curriculum is that it builds on prior learning and experiences of the children (NAEYC, 2003). The content of the curriculum is introduced and implemented so that it taps into the prior experiences of each child in a meaningful way. It utilizes their personal life experiences as an avenue for the introduction and promotion of key skills defined within the curriculum. This approach is

effective with the learners through making meaning of their lives and connecting it to what it is they are learning in a systematic fashion.

Not only should it build on their individual interests, but NAEYC also stated specific ways in which the learning should occur with regard to what the organization believes to be best practice. The organization asserted that content is best learned through investigation and play (NAEYC, 2003). When children are learning in this manner, the experiences to support the goals should be focused and intentional. The teacher should serve as a facilitator of play and investigation. Strategies should be present to allow for differentiated instruction to meet children at their individualized developmental levels.

These indicators of effectiveness were created to guide individual programs in the selection and implementation of a curriculum that would have the highest likelihood of promoting success for all children. This road map for curriculum design is well intended for use by all, but is not a guarantee that all programs are building their instruction on an evidence-based curriculum. By responding to the suggestion that all programs have an explicit curriculum in place, it is sometimes the case that program administrators choose to unconsciously adopt curricula that are low in quality and fail to make provisions for the child's age, culture, and home language (Tabors, 1997). As a result of an increase in the diversity of population attending early education centers, considerably more attention should be paid to language and culture in current curricula more so than in prior years.

Language content is not the only challenge area where many curriculum selections do not meet the needs of all in a meaningful, developmentally appropriate manner. Often the curriculum underestimates the ability of the learner; thus, it is up to the teacher to determine how to challenge that child to learn and grow. Even when the

curriculum selected meets the suggested criteria defined by NAEYC's position statement, the bottom line is that the day-to-day instructional decisions are only as sound as the teacher responsible for the growth and development of the young minds in a particular learning environment.

Program Setting

These learning environments created for our youngest learners can be offered in a variety of settings. The delivery model can be associated with the public school system, private preschool, Head Start, or a community agency. It does not have to exist in only one of these settings but can occur across multiple settings. This type of delivery system is known as a mixed-service delivery model. While this delivery system is not the norm, it does happen for some learners. In particular, it becomes the program for children who are enrolled in a community-based program but need itinerant level special education services. Those students who quality for this level of early childhood special education services usually receive a minimal amount of support from the special education staff. The children might only need therapy for speech or another related service. Their delay is very mild; therefore, they can succeed in a community-based model and access a minimal amount of therapy to address their area of delay. This does happen in the district under study, but for a low percentage of children within the community. From a national perspective, schools serve the majority of pre-k children, and roughly 30% of all children attending pre-k programs receive their services in a community setting (Barnett, Hustedt, Robin, & Schulman, 2006).

The possibility of delivery within multiple settings has associated benefits as well as challenges. The fact that there are centers that fall under each type of service delivery

model within most communities allows more children to access a pre-k environment. However, these programs can offer incredibly different educational experiences. A 2002 study on the staffing and stability of pre-k state programs revealed some findings that speak to the program setting (Bellm, Burton, Whitebook, Broatch, & Young, 2002).

The primary finding of this five-state study was that teaching staff in publicly operated pre-k programs had obtained more formal education than their counterparts in privately operated settings (Bellm et al., 2002). The data revealed that most teachers in the public pre-k classrooms in this study exceeded the minimum state requirements for educational experience. This could be the case for multiple reasons. The programs associated with a school district are often more competitive in the area of salary and benefits, with a salary schedule that serves as an incentive for staff members to remain committed to the learning organization. With regard to the publicly operated programs, 93% of the teachers in the sample had at minimum a bachelor's degree. In contrast, only approximately 50% of teachers in private settings had attained the same level of education (Bellm et al., 2002).

Prior research has illustrated the positive relationship that exists between the qualifications of the director and the stability of staffing in early education programs (Cost, Quality and Outcomes Study Team, 1995). As a result of this relationship, the five-state study also examined the level of education of the directors at the various sites. The study unveiled that in three of the four states that employ directors, those working in publicly operated programs had significantly more formal education than those in private settings (Bellm et al., 2002). In the state of California, 76% of directors in public settings

held a bachelors' degree, whereas only 28% of directors in private settings had accomplished this educational equivalent (Bellm et al., 2002).

In addition to examining educational level, the study also examined rate of pay and stability. The researchers found that the teaching staff in publicly-operated pre-k program received higher rates of pay and benefits in comparison to their private counterparts. The higher rate of pay and increased quality of benefits could be a result of the pre-k program being connected to a larger educational organization. The district-affiliated programs might be making early investments in the pre-k teachers in hopes that the payoff would be greater in the years ahead. They have the incentive to make more of a long-term investment in the learners in comparison to isolated community-based models. Also, they found that stability of staff was greater in public versus private programs (Bellm et al., 2002). The decision to stay in a setting could be connected to compensation. Since compensation is higher in public settings, this could have a direct impact on staffing stability.

Aside from staffing gaps that exist in the early education environment, the kindergarten transition process tends to differ greatly between public and private preschools. The public preschools, which are typically an extension of the school district in which they are located, have opportunities that are not available to private facilities. Because of the public preschools being affiliated with the receiving school district, a connection often exists to support the transition of a learner from the early education environment to elementary schools.

There are benefits for the children when there is a strong bond between the preschool and the elementary school. These include more consistent expectations and

curriculum across programs (Pianta & Cox, 2002). There is also increased collaboration between the two environments to create a systematic structure for sharing knowledge around each child. This is especially true for children who have identified disabilities. A study on early school transitions for children with individual support needs found that the children who attended kindergarten in the same district as they had attended preschool had teachers who reported significantly higher use of multiple transition strategies in comparison to those who attended elsewhere.

The data illustrated that when a child transitioned within the same district, the information between preschools and elementary schools was shared on 90% of the children transitioning versus 79% of those new to the district. When a child transitioned within one unified district, a staff member of the preschool met with a staff member of the receiving team 68% of the time. When a child was first enrolling in the district, the percentage of this happening dropped to 50%. Also, for an intradistrict transfer, the receiving program sent someone to observe the child in the previous setting on 62% of opportunities. This number reduced to 31% of opportunities when a child was not part of an early education program in the receiving school district (Carlson et al., 2009). The combination of utilizing these strategies assists the children in maximizing their first days in their elementary learning environment.

Summary

In summary, the review of literature did not result in the researcher locating direct studies that correlate participation in a district-affiliated early childhood program with a higher level of success in the primary grades. However, the researcher uncovered much research that discussed program qualities and characteristics with regard to pre-k

experiences that have the greatest impact on academic performance as well as social competency in the elementary years.

The review of recent literature supported the notion that quality seems to be an operative word when examining the array of early education programs that exist. Research reviewed demonstrated that the overall level of program quality positively correlates with the academic outcomes associated with participation in a preschool program. Not only does quality of the experience appear to affect the growth and development of the youngest learners, but also the service delivery model and program setting of the individual programs.

The programs that are of high quality produce gains not only academically in the elementary years, but also assist the participant in reaching social competency. The researcher conducting this specific study examined the impact of both quality and level of connectedness of a program to the receiving elementary school in relation to academic achievement and social success in the early elementary years, in order to fill the gaps that exist in current research.

The chapter immediately following will focus on the methodology that the researcher will utilize in conducting the study. It will provide specific details with regard to participant selection process, type of data to be collected, and approach to analyzing data. It will conclude through the sharing of a plan for communicating findings of study to potential readers.

Chapter 3 – Methodology

This comparative study was designed to assess the relationship between participation in a minimum of one year of a district-affiliated pre-k programming on student performance academically and socially in the primary grades. The relationship was evidenced through the analysis of district-wide benchmarking data points, Missouri Assessment Program scores, and number of office discipline referrals. The purpose of the study was to determine if participating in a pre-k program affiliated with the receiving school district yielded a higher level of performance in the early elementary years.

Research Questions

The following questions were addressed:

1. How do students who attended a district-affiliated program perform in comparison to their peers who attended a community preschool?
2. How do the ABC Early Childhood Center students perform in comparison to those who did not spend time in an early education environment prior to transitioning to formal schooling?
3. What impact does attending a minimum of one year of a pre-k program affiliated with the receiving school district have on academic success in kindergarten through third-grade?
4. What are the perceptions of the parents and district kindergarten teaching staff on children's participation in a school district-affiliated program?
5. What impact does participation in each of the pre-k settings have on academic and social readiness for success in kindergarten?

Independent Variable

The independent variable was attendance at ABC Early Childhood Center for a minimum of one year prior to kindergarten. The primary comparison group consisted of those students who attended ABC Elementary Schools in grades 1–4 during the data collection timeframe (Fall 2009), and formerly attended ABC Early Childhood Center. The other comparison groups were comprised of those who attended ABC Elementary Schools in grades 1–4 during the data collection time frame, and formerly attended a community-based pre-k program, or those who received their primary learning in the home prior to kindergarten entry. There was a comparison made between the each of the groups to determine which type of setting yielded the greatest results. During the data collection timeframe, the students from all groups were enrolled in a k–3 classroom within the ABC School District.

Dependent Variables

The dependent variables were academic performance on the local and state assessments as well as number of office discipline referrals measured across the grade year that the student was in during the 2008–2009 school year. The study addressed the relationship between the independent variable and the dependent variables.

Hypotheses

Null Hypothesis #1

Students who attended a district-affiliated pre-k program will not exhibit a higher level of performance on district-wide AIMSweb benchmarking measures in their respective grade level under study than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Null Hypothesis #2

Students who attended a district-affiliated pre-k program will not exhibit a higher level of performance on the Missouri Assessment Program (MAP) Communication Arts subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Null Hypothesis #3

Students who attended a district-affiliated pre-k program will not exhibit a higher level of performance on the Missouri Assessment Program (MAP) Mathematics subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Null Hypothesis #4

Students who attended a district-affiliated pre-k program will not exhibit a higher level of performance on the Missouri Assessment Program (MAP) Communication Arts and Missouri Assessment Program (MAP) Mathematics subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Null Hypothesis #5

Students who attended a district-affiliated pre-k program will not receive fewer office discipline referrals (ODRs) than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Null Hypothesis #6

There will be no significant difference in categories when comparing performance across the three groups (attended district-affiliated pre-k, attended

community-based model, spent pre-k years in the home environment) in each of the measured variables listed in hypotheses 1–5.

Alternative Hypothesis #1

Students who attended a district-affiliated pre-k program will exhibit a higher level of performance on district-wide AIMSweb benchmarking measures in their respective grade level under study than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Alternative Hypothesis #2

Students who attended a district-affiliated pre-k program will exhibit a higher level of performance on the Missouri Assessment Program (MAP) Communication Arts subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Alternative Hypothesis #3

Students who attended a district-affiliated pre-k program will exhibit a higher level of performance on the Missouri Assessment Program (MAP) Mathematics subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Alternative Hypothesis #4

Students who attended a district-affiliated pre-k program will exhibit a higher level of performance on the Missouri Assessment Program (MAP) Communication Arts and Missouri Assessment Program (MAP) Mathematics subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Alternative Hypothesis #5

Students who attended a district-affiliated pre-k program will receive fewer office discipline referrals (ODRs) than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Alternative Hypothesis #6

There will be a significant difference in at least one category comparing performance across the three groups (attended district-affiliated pre-k, attended community-based model, spent pre-k years in the home environment) in each of the measured variables listed in hypotheses 1–5.

Defining Student Success

For the purpose of this study, student success was defined as academic achievement and social competency in the early primary years. The indicators of success with regard to academics included average performance or above on the norm-referenced AIMSweb benchmarking assessments. In addition, it was defined by a minimum of Proficient ranking on the Missouri Assessment Program (MAP) test at the third-grade level. The social competency was measured with regard to number of office discipline referral forms received on an individual level.

Participants and Sampling Procedure

The participants for this study included a total of 1388 students. The breakdown of participants at each grade level included 327 kindergarten students, 346 first-grade students, 355 second-grade students and 360 third-grade students who attend one of the five elementary schools located within the ABC School District. The researcher was allowed access to the data as an employee of the district under study. All students in

grade k–3 were divided in terms of the following categories: attended district-affiliated pre-k program, attended community-based pre-k program, or no preschool experience. From that point, a computer generated randomizer was used to generate a random sample from each of the groups for each grade level included in the study. The average sample size for each grade level in the district-affiliated pre-k group and the community-based pre-k group was 45. The no preschool group averaged out to be a sample size of 30 per grade level.

In addition to students' participation in the study, the researcher also included a stratified sample of full-day and half-day kindergarten teachers who were interviewed to obtain information focused on their perspectives of what contributes to academic and social successes at their level. All kindergarten teachers across the district were invited to participate in the study. While some of the teachers opted not to be interviewed, the researcher made certain that the group of five teachers interviewed contained at least one representative from each of the four elementary schools teaching kindergarten learners. The questions asked of the teachers, as well as the interview transcripts can be located in the appendix section of the paper.

The third group of participants involved in this study was parents who agreed to be interviewed. The interviewees were comprised of parents of students who attended ABC Early Childhood Center for one or more years and parents whose children went to a community preschool. The parents were selected through use of a randomized program. The questions asked of these parents as well as the interview transcripts can be found in the appendix section of this paper.

Study Design

This was a mixed-methods study, consisting of both qualitative (interviews) and quantitative (benchmarking, office discipline referrals, and standardized test scores) measures. This approach to the study was chosen to allow triangulation of data by the researcher. The combination of data types allowed the study to be more solid in design. The individual interviews with teachers occurred prior to or within the first quarter of the new academic year. This time frame allowed them to more easily reflect upon the indicators for student success at the beginning of the student's elementary career. The parent interviews were conducted shortly after the 2009–2010 school year began. This time frame offered the parents an opportunity to assess how their child was performing in the new learning environment and provided insight about potential contributors toward their successes or difficulties. The selection of parents occurred through a stratified sampling process. The strata consisted of parents of children who attended ABC Early Childhood Center for one or more years, parents of children who attended a community preschool, and parents of children who did not participate in an early childhood program prior to kindergarten.

To examine the level of academic readiness of the students at various levels in their k–3 learning experience, the researcher examined data points during various phases in their learning. Appendix C outlined the data that was reviewed and disaggregated by subgroups at the different stages in each grade level. The data was reviewed specific to each grade level, k–3. Participants were examined within each of the possible grades under study. The participants in the study remained confidential and were assigned numbers so that their names could be removed. Investigating performance of participants

at each grade level over time allowed the researcher to see at what point in the early elementary years that a difference surfaced or diminished related to a particular type of pre-k experience, if indeed a difference in achievement did exist.

The data specific to each grade level population was analyzed using an ANOVA at the associated points in their k–3 educational experience. The researcher selected the ANOVA to test for a difference in categories across all three groups (district-affiliated pre-k, community-based pre-k, home group) for each category of comparison. In the event that the numbers did not provide a visual guide as to which category falls into the definite difference area, the researcher used an *f*-test to gain further understanding of which category resulted in the definite difference. The access to this data had been granted as a result of the researcher being an administrator in the district where the study was taking place.

Timing and Location

The interviews with selected teachers and parents were conducted at their home elementary school. They were held outside of the typical instructional day and lasted no longer than 30 minutes each. The interviews were audio-recorded. The data reviewed from the AIMSweb Benchmarking process was accessed through logging into the data warehousing Web site provided for the district. The Missouri Assessment Program Communication Arts and Mathematics standardized scores were retrieved through review of third-grade students' performance on the Missouri Department of Elementary and Secondary Education Web site.

All of the data reviewed was securely password-protected to prevent unauthorized access. Once the data was disaggregated and in a meaningful format related to the study,

randomly generated ID numbers were assigned to protect everyone indirectly involved in this process.

Interpretation of the Data

The audio recordings of the various interviews with kindergarten teachers as well as parents were transcribed and analyzed by the researcher for insights regarding kindergarten readiness. The areas of focus were social–emotional development and preacademic essentials. There was also an examination of positive or negative trends and perceptions associated with participation in the ABC Early Childhood Center program.

The benchmarking data and the standardized test scores were statistically analyzed by conducting a single factor ANOVA to determine the impact of attendance at ABC School District's pre-k program on the overall results in the assessed areas. This was examined in comparison to those who attended other community preschools as well as to those students who did not attend a center-based preschool prior to entering kindergarten.

Reliability and Instrument Validity

The instruments used for measurement within this study were AIMSweb benchmarking results, Missouri Assessment Program (MAP) scores, and individual number of office discipline referral forms. Reliability was defined by Fraenkel and Wallen (2009) as "the consistency of scores or answers from one administration of an instrument to another, and from one set of items to another" (p. 147). Validity was defined as "the appropriateness, meaningfulness, correctness, and usefulness of the inferences a researcher makes" (Fraenkel & Wallen, 2009, p. 147).

The meaningfulness of the Missouri Assessment Program scores was ensured by the Missouri Department of Elementary and Secondary Education to be "indices of proficiency relative to the Show-Me Standards by using methodical and rigorous test-development procedures" (MO DESE, 2009a, p. 2). DESE continuously engages in an ongoing review of the data to remain confident that the instrument is indeed valid for its intended purpose. They also weave test validity into the architecture of each test (MO DESE, 2009a).

With regard to the AIMSweb benchmarking processes, analyses have been done to illustrate that the processes are in compliance with the industry standard in relation to reliability, validity, and sensitivity to individual student growth (Pearson, 2009). The creators of the progress monitoring tool have determined through review of data that the outcomes are independent of the curriculum being delivered within a given program. Recently, AIMSweb was awarded the highest honor from National Center on Response to Intervention (NCRTI) in relation to the level of reliability and validity in their instruments (Pearson, Inc., 2009).

Threats to Internal Validity

As with any comparative study, there are posed threats to internal validity associated with the proposed design. Fraenkel and Wallen (1990) highlighted the specific weak points of any comparative study to be limited ability to randomize and powerlessness to alter the independent variable within the design. The researcher reviewed the possible threats to internal validity as described by Fraenkel and Wallen and attempted to consciously address them in a proactive manner through the design of the

study to minimize their effects. The internal threats are outlined herein, and the active measures taken to lessen the impact of them are described in detail below.

With regard to subject characteristics, the researcher attempted to avoid a selection bias by making all students in grades k–3 possible participants in the study, unless they were not enrolled in the district since kindergarten or through the completion of third grade. The researcher selected the 480 participants through a random sampling process using a web-based randomizer program prior to reviewing the data to be compiled to prevent the results from being skewed. The number of participants was decided based on what would constitute a solid sample from each group. The researcher also attentively examined other variables including gender and ethnicity in the interpretation of data in an attempt to diminish impact of those variables on findings. The researcher closely reviewed the gender and ethnic data for each randomly generated group to be certain that the groups were not unbalanced.

Loss of subjects often serves as a threat to internal validity. Mortality threat is not a factor in this study; the data to be examined has already been collected on all of the participants through the district assessment process. If a possible participant was absent during the original data collection period, there were structures in place allowing staff members to capture the necessary data on those students.

In the examination of location threats, the researcher visited the rooms where data was collected across the five elementary schools. The rooms were consistent with regard to lighting, noise level, and overall environmental aesthetics. The researcher did not find any data collection site in the array of possibilities that would systematically favor or jeopardize the researcher's hypothesis. A limitation of the study related to location was

that the research only focuses on the only early childhood center affiliated with the district that feeds into ABC elementary schools.

Instrument decay has been known to also pose a threat to internal validity of a study. The data analyzed through this study design had been collected through the use of a standardized instrument. Because the data collection instruments were standardized, they allowed for no alteration in the administering of the benchmarking assessments. The instruments were utilized in a highly consistent style across the multiple data collection sites. To address data collector bias, all individuals who were responsible for administering the data collection instruments participated in a rigorous training program to ensure that the data was collected with fidelity in a standardized manner throughout the district. In addition, those collecting the data were not privy to the researcher's hypothesis, content of the study, or the design to avoid manipulation of data to match the hypothesis.

Through the blueprint of the study, the researcher deliberately addressed the known threats to internal validity in a range of ways. They were actively addressed through the standardization of instruments and the conditions under which the data was gathered. The researcher intentionally obtained additional information that was believed to be relevant to the population under study and which could potentially impact the findings, such as gender, socioeconomic status, and ethnicity.

Regardless of the intense focus on minimizing these threats, they still have the ability to impact this study. Although threats are inherent to each investigation, the researcher strongly believes that the conclusions will fill in current gaps in research by

focusing explicitly on programs linked to a school district as opposed to those that are independently operated.

Threats to External Validity

External threats to validity specific to this study include population and ecological threats. Abrahams (1997, 2008) defined population validity is known as ". . . the extent to which the results of a study can be generalized from the specific sample that was studied to a larger group of subjects" (Abrahams). The participants were taken from a random sampling of students within five elementary schools located in the ABC School District. According to demographic data from Missouri Department of Elementary and Secondary Education (2008), the district's population in 2008 consisted of 4,976 students. As represented in Table 1, the population was comprised of 1.7% Asian, 20.7% African American, 1.5% Hispanic, 0.1% Indian, and 75.1% Caucasian (MO DESE, 2008). If the elementary population is reflective of the entire district, there is limited diversity within the participants. There is also a possibility within this study that the findings could prove to be drastically different on the population within each grade level examined.

Table 1

Demographics: School Study Site District

Year	2008–2009*
Enrollment	4,976
% African American	20.7
% Asian	1.7
% Caucasian	75.1
% Hispanic	1.5
% Indian	0.1

Note. From Missouri Department of Elementary and Secondary Education (2008)

Ecological validity refers to ". . . the extent to which the results of an experiment can be generalized from the set of environmental conditions created by the researcher to other environmental conditions" (Abrahams, 1997; 2008). The generalization of results should be cautioned by interaction of history and treatment effect. This can be interpreted to mean that the population under study might have had different experiences while attending ABC Early Childhood Center over the course of the past five years.

With any program, there are multiple variables that are sensitive to change over time as a result of different school improvement efforts and relevant data to review. The current principal at ABC Early Childhood Center has been there during the attendance of all students in the population under study. However, the program might have evolved drastically under the span of time that the leader has been in this position. The evolution

of the program could prove to have increased or decreased impact on performance to be measured at the elementary level.

Outline of Researcher's Attempts to Control Study Limitations

There are limitations inherent to this study on the impact of pre-k programming on performance in the primary years. The researcher attempts to outline the known limitations below. In addition, the deliberate actions taken to try to address the limitations are described in order to achieve the highest possible generalization of findings.

Instructional Approaches

The participants in this study all attended an elementary school in the ABC School District. There are five possible locations for a student to attend elementary school within the district under study. While ABC offers a wide array of quality professional development experiences to support teachers, there is still a variance in the level of instruction that a student receives from classroom to classroom. Through a random sampling of participants, the researcher set up the design so that the selected students were representative of all school sites. In addition, the researcher made a conscious decision to omit any student in grades kindergarten through third grade that was not enrolled in ABC School District upon kindergarten entry, thus minimizing the differences in instructional approaches beyond the district under study. In addition, the researcher omitted any students who had knowingly participated in a mixed-delivery system at the pre-k level, meaning that they attended a combination of community-based programs and district-affiliated programs.

Testing environment

In the taking of the various benchmarking assessments in all grades and the Missouri Assessment Program at the third-grade level, the students were administered these tests in various environments. The tests were proctored in different locations across the district and by a variety of individuals. While the environments were in different physical locations, the schools were all similar to each other in design, space, and lightning. The individuals who administered each of the tests received consistent training and were probed by building leaders to determine that they had an adequate level of knowledge with regard to how to administer a test in a standardized manner.

Incomplete Data Sets

In the event that a student was selected on a random basis and was missing data points, the researcher made a decision to remove that particular student from the study. The researcher wanted continuity in data points across the grade level relative to the individual student.

Confidential Handling of Data

The data specific to any individual student has not been shared with any person outside of school district personnel who already have access. Once the data was collected and organized in the database, the individual student identity was removed. In reviewing the data shared in the findings of the study, the reader will not be able to connect any specific information to a particular student. The data that correlates with an individual student is password protected in the district's data warehouse. All data, qualitative and quantitative, has been analyzed in a way that all participants' identities have been protected.

Summary

The intent of this mixed-methods study was to assess the impact of participation in a minimum of one year of pre-k programming with a district-affiliated program on student success in kindergarten through third grade. The success was measured by academic performance on local and state assessments. These assessments were inclusive of AIMSweb benchmarking assessments specific to each grade level as well as performance on Missouri Assessment Program (MAP) test in third grade. The additional component of student success in this study encompassed the number of office discipline referrals (ODRs) received. This piece of data was selected to reflect the corresponding level of social competency in the early elementary years. Data for this study was gathered within the ABC School District across five elementary school sites.

Within this chapter, the researcher communicated the overall design of the study. The level of validity and reliability with the selected instruments was discussed through the revealing of data to support these as quality measures of student success to utilize. In addition, the limitations associated with the study were expressed along with the researcher's active measures taken to combat the limitations. There were specifics articulated around handling of incomplete data sets, testing environments, and attempt to minimize variance in instructional approaches. The researcher also has outlined the threats to validity, external and internal. The researcher described the plan for maintaining confidentiality of all participants throughout the course of the study.

In chapter 4, the data collected by the researcher will be analyzed in immense detail. This analysis will be discussed and disaggregated at an appropriate level of detail

specific to this study. The statistical treatment of the data will also be described in the following chapter.

Chapter 4 – Results

This comparative study was designed to assess the relationship between participation in a minimum of one year of a district-affiliated pre-k program on student performance as it relates to academics and social competence in the early elementary years. The relationship was evidenced through the analysis of data available to the researcher. This data included district-wide benchmarking scores, Missouri Assessment Program scores, and the number of office discipline referrals. The purpose of the study was to determine if participation in a pre-k program affiliated with the receiving school district yielded a higher level of performance in grades k–3.

Attendance at ABC Early Childhood Center for a minimum of one year served as the independent variable in this study. The primary comparison group was comprised of those students who attended ABC Elementary Schools in grades 1–4 during the data collection timeframe (Fall 2009) and formerly attended the district-affiliated program. The other comparison groups consisted of those who attended ABC Elementary Schools in grades 1–4 during the data collection timeframe and formerly attended a community-based pre-k program or those students who received their primary learning in the home preceding kindergarten entry. During the data collection timeframe, students from all groups were enrolled in a k–3 classroom within the ABC School District.

Academic performance on the local and state assessments, as well as the number of office discipline referrals, measured across the grade current to the student during the 2008–2009 school year, served as the dependent variables. By design, this study was aimed at addressing the relationship between the independent variable and the dependent variables.

Participants

The study site was a small suburban district located in St. Louis County, Missouri. The district under study consisted of one early childhood center, five elementary schools, two middle schools, and one high school. The demographic data provided by Missouri Department of Elementary and Secondary Education (2008) stated that the district's population in 2008 consisted of 4,976 students. Ethnic representation was 75.1% Caucasian, 20.7% African American, 1.7% Asian, 1.5% Hispanic, and 0.1% Indian (MO DESE, 2008). Examination of the ethnic representation reveals that there is limited diversity within the participants. Participants were randomly selected to include representation from each of the five elementary schools.

Table 2 below outlines demographic information in regard to the random sample captured for the study. The table also reflects the sample size of the randomly selected participants at each grade level and within each category, percentage-based details related to the ethnic and gender make-up of each group at their corresponding grade level, and percentage of students receiving special education services as evidenced through assignment to an individualized educational plan (IEP).

Table 2

Random Sample Demographic Information

	(n) Sample Size	% African-American	% Asian	% Caucasian	% Hispanic	% Female	% Male	% IEP
K (C)	44	9	0	89	2	41	59	0
K (DA)	44	9	0	86	5	36	64	18
K (H)	30	27	7	63	3	63	37	7
1st (C)	45	11	0	85	4	33	67	4
1st (DA)	45	9	9	73	9	53	47	7
1st (H)	30	30	7	60	3	53	47	7
2nd (C)	45	18	2	80	0	38	62	11
2nd (DA)	44	7	7	82	4	55	45	11
2nd (H)	28	25	4	71	0	54	46	11
3rd (C)	45	13	2	84	0	44	56	4
3rd (DA)	45	9	2	89	0	42	58	22
3rd (H)	26	31	4	65	0	50	50	15

Note. C = Community-based group. DA = District-affiliated group. H = Home-based group. IEP = Individualized educational program.

The selected participants provided assessment data that were dependent upon their grade-level during the data collection timeframe. While all grades participated in some

form of AIMSweb benchmarking activities and generated a total number of office discipline referrals per pupil for the year, those at the third-grade level were the only participants to take the Missouri Assessment Program (MAP) tests in the areas of Communication Arts and Mathematics. The following tables offer descriptive statistics related to the random sample for each of the quantitative measures related to the study at a given grade level.

Table 3

Kindergarten Random Sample Descriptive Statistics

	K (C) Mean	K (C) Standard Deviation	K (DA) Mean	K (DA) Standard Deviation	K (H) Mean	K (H) Standard Deviation
Letter Naming Fluency (Fall)	30.59	15.168	20.40	13.013	22.63	13.312
Letter Naming Fluency (Spring)	53.81	13.557	48.60	14.119	47.67	14.483
Phoneme Segmentation Fluency (Spring)	44.47	15.216	41.05	13.241	38.10	18.503
Oral Counting Measure (Fall)	52.89	20.332	51.53	17.642	42.47	22.187
Oral Counting Measure (Spring)	74.45	17.547	68.33	17.919	68.07	17.443
Number Identification Measure (Fall)	40.37	15.467	37.62	14.263	33.00	17.436
Number Identification Measure (Spring)	52.16	6.689	51.38	7.094	51.40	7.332
Quantity Discrimination Measure (Fall)	18.14	8.804	17.09	9.784	13.7	8.718
Quantity Discrimination Measure (Spring)	25.95	5.035	26.38	3.172	25.70	4.550
Missing Number Measure (Fall)	9.91	6.080	8.89	5.180	6.93	5.483
Missing Number Measure (Spring)	14.73	5.041	16.60	3.962	14.40	5.386
Office Discipline Referrals	0.14	0.905	0.18	0.614	0.27	0.907

Note. C = Community-based group. DA = District-affiliated group. H = Home-based group. Confidence Level = .95

Table 4

First Grade Random Sample Descriptive Statistics

	1st (C) Mean	1st (C) Standard Deviation	1st (DA) Mean	1st (DA) Standard Deviation	1st (H) Mean	1st (H) Standard Deviation
Letter Naming Fluency (Fall)	48.53	13.456	50.33	12.391	50.17	14.847
Letter Sound Fluency (Spring)	30.78	13.585	26.13	11.548	29.33	14.023
Phoneme Segmentation Fluency (Fall)	32.29	15.294	35.20	16.369	31.83	17.177
Nonsense Word Fluency (Fall)	33.00	22.000	44.67	32.622	34.50	26.601
Nonsense Word Fluency (Spring)	62.04	34.262	64.29	35.066	67.67	34.800
Oral Counting Measure (Fall)	72.20	14.795	73.62	15.882	69.33	19.789
Oral Counting Measure (Spring)	83.07	15.336	85.42	13.418	87.07	13.764
Number Identification Measure (Fall)	43.53	15.701	42.60	15.495	44.60	16.408
Number Identification Measure (Spring)	58.22	14.998	61.04	14.669	59.53	13.441
Office Discipline Referrals	0.07	0.330	0.11	0.532	0.87	3.702

Note. C = Community-based group. DA = District-affiliated group. H = Home-based group. Confidence Level = .95

Table 5

Second Grade Random Sample Descriptive Statistics

	2nd (C) Mean	2nd (C) Standard Deviation	2nd (DA) Mean	2nd (DA) Standard Deviation	2nd (H) Mean	2nd (H) Standard Deviation
Reading CBM (Fall)	73.20	38.997	72.36	41.074	66.143	6.550
Reading CBM (Spring)	116.89	44.910	114.39	33.886	113.75	40.965
Math CBM (Fall)	10.70	4.887	11.12	7.507	11.89	8.787
Math CBM (Spring)	23.59	8.571	25.11	13.488	26.32	13.258
Office Discipline Referrals	0.11	0.387	0.36	1.978	0.21	0.499

Note. C = Community-based group. DA = District-affiliated group.
H = Home-based group. CBM = Curriculum based measure.
Confidence Level = .95

Table 6

Third Grade Random Sample Descriptive Statistics

	3rd (C) Mean	3rd (C) Standard Deviation	3rd (DA) Mean	3rd (DA) Standard Deviation	3rd (H) Mean	3rd (H) Standard Deviation
Reading CBM (Fall)	114.29	38.018	110.49	36.053	88.42	31.913
Reading CBM (Spring)	148.98	35.986	141.33	33.417	122.88	33.691
MAP Communication Arts	670.09	31.094	665.64	31.511	648.42	32.340
MAP Mathematics	661.82	43.994	655.40	40.803	636.07	36.234
Office Discipline Referrals	0.11	0.438	0.09	0.358	0.31	0.618

Note. C = Community-based group. DA = District-affiliated group. H = Home-based group. CBM = Curriculum based measure. MAP = Missouri Assessment Program. Confidence Level = .95

Treatment of Data

A single factor ANOVA was applied to determine if a significant difference existed in one or more categories when comparing the three attendance groups. Following the initial level analysis, data were analyzed using an *f*-test when the single factor ANOVA indicated a difference among categories and the difference was not evident with a visual check.

Results and Analysis of Data

The single factor ANOVA was utilized to address the following research questions and related hypotheses.

The following questions were addressed:

1. How do students who attended a district-affiliated program perform in comparison to their peers who attended a community preschool?
2. How do the ABC Early Childhood Center students perform in comparison to those who did not spend time in an early education environment prior to transitioning to formal schooling?
3. What impact does attending a minimum of one year of a pre-k program affiliated with the receiving school district have on academic success in kindergarten through third-grade?
4. What are the perceptions of the parents and district kindergarten teaching staff on children's participation in a school district-affiliated program?
5. What impact does participation in each of the pre-k settings have on academic and social readiness for success in kindergarten?

Null Hypothesis #1

Students who attended a district-affiliated pre-k program will not exhibit a higher level of performance on district-wide AIMSweb benchmarking measures in their respective grade level under study than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Null Hypothesis #2

Students who attended a district-affiliated pre-k program will not exhibit a higher level of performance on the Missouri Assessment Program (MAP) Communication Arts subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Null Hypothesis #3

Students who attended a district-affiliated pre-k program will not exhibit a higher level of performance on the Missouri Assessment Program (MAP) Mathematics subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Null Hypothesis #4

Students who attended a district-affiliated pre-k program will not exhibit a higher level of performance on the Missouri Assessment Program (MAP) Communication Arts and Missouri Assessment Program (MAP) Mathematics subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Null Hypothesis #5

Students who attended a district-affiliated pre-k program will not receive fewer office discipline referrals (ODRs) than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Null Hypothesis #6

There will be no significant difference in categories when comparing performance across the three groups (attended district-affiliated pre-k, attended community-based model, spent pre-k years in the home environment) in each of the measured variables listed in hypotheses 1–5.

Alternative Hypothesis #1

Students who attended a district-affiliated pre-k program will exhibit a higher level of performance on district-wide AIMSweb benchmarking measures in their

respective grade level under study than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Alternative Hypothesis #2

Students who attended a district-affiliated pre-k program will exhibit a higher level of performance on the Missouri Assessment Program (MAP) Communication Arts subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Alternative Hypothesis #3

Students who attended a district-affiliated pre-k program will exhibit a higher level of performance on the Missouri Assessment Program (MAP) Mathematics subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Alternative Hypothesis #4

Students who attended a district-affiliated pre-k program will exhibit a higher level of performance on the Missouri Assessment Program (MAP) Communication Arts and Missouri Assessment Program (MAP) Mathematics subtest at the third-grade level than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Alternative Hypothesis #5

Students who attended a district-affiliated pre-k program will receive fewer office discipline referrals (ODRs) than their peers who participated in a community-based pre-k program or remained in the home prior to kindergarten.

Alternative Hypothesis #6

There will be a significant difference in at least one category comparing performance across the three groups (attended district-affiliated pre-k, attended community-based model, spent pre-k years in the home environment) in each of the measured variables listed in hypotheses 1–5.

With regard to the kindergarten grade-level, the only AIMSweb benchmarking item that had an *f*-value greater than that of the *f*-critical value was Letter Naming Fluency administered in the fall, as illustrated in Table 7. Table 8 contains the relevant ANOVA statistical information.

Table 7

Summary of Fall Kindergarten Letter Naming Fluency

Groups	*Count*	*Sum*	*Average*	*Variance*
K (C)	44	1346	30.59091	230.0613
K (DA)	45	1323	29.4	169.3364
K (H)	30	679	22.63333	177.2057

Note. C = Community-based group. DA = District-affiliated group.

H = Home-based group.

Table 8

ANOVA Fall Kindergarten Letter Naming Fluency

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1245.446	2	622.7229	3.212995	0.043842	3.074447
Within Groups	22482.4	116	193.8138			
Total	23727.85	118				

Note. Alpha level = .05. n = 119.

With relation to the Letter Naming Fluency administered at the kindergarten level in the fall, the decision was to not to reject null hypothesis #1 and accept alternative hypothesis #1 when comparing the district-affiliated participants to the all other participants. The calculated *f*-value was 3.212995, which exceeded the *f*-critical value of 3.074447. This declared that at least one of the three pieces of data in this category was significantly different. A visual scan determined that the home group scored an average of 22.63 on this measure, distinctly lower than the district-affiliated participants and the community-based participants. However, the district-affiliated group did not exhibit a higher level of performance in comparison to the community-based group.

Upon inspection of the single factor ANOVA data for the AIMSweb benchmarking items specific to first and second grades, the *f*-value did not exceed the *f*-critical value on any of those categories. This statistical result led the researcher to decide not to reject null hypothesis #1 because the district-affiliated participants did not

exhibit a statistically significant higher level of performance on any of the category items in the above-mentioned grade levels.

The review of third-grade benchmarking data can be found in Tables 9 through Table 12. Statistically significant differences emerged through the analysis of data at this particular grade level. This was true of both the AIMSweb items, inclusive of the fall and spring measures.

Table 9

Summary of Third Grade Fall Reading Curriculum Based Measure

Groups	*Count*	*Sum*	*Average*	*Variance*
3rd (C)	45	5143	114.2889	1445.346
3rd (DA)	45	4972	110.4889	1299.846
3rd (H)	26	2299	88.42308	1018.414

Note. C = Community-based group. DA = District-affiliated group. H = Home-based group.

Table 10

ANOVA Third Grade Fall Reading Curriculum Based Measure

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	11911.13	2	5955.565	4.601602	0.011989	3.076574
Within Groups	146248.8	113	1294.237			
Total	158160	115				

Note. Alpha level = .05. n = 116.

The *f*-value for the third-grade Fall Reading Curriculum Based Measure was higher than that of the *f*-critical. As a result, the decision was made to not reject null hypothesis #1 when comparing the district-affiliated performance to the comparison groups. A visual scan of the data highlights that a difference existed when the comparison of district-affiliated data was made to data from the home group. However, when examining the district-affiliated group to the community-based group there was not a significant difference in performance between the groups.

Table 11

Summary Third Grade Spring Reading Curriculum Based Measure

Groups	*Count*	*Sum*	*Average*	*Variance*
3rd (C)	45	6704	148.9778	1294.977
3rd (DA)	45	6360	141.3333	1116.727
3rd (H)	26	3195	122.8846	1135.066

Note. C = Community-based group. DA = District-affiliated group. H = Home-based group.

Table 12

ANOVA Third Grade Spring Reading Curriculum Based Measure

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	11320.26	2	5660.128	4.755645	0.010399	3.076574
Within Groups	134491.6	113	1190.191			
Total	145811.9	115				

Note. Alpha level = .05. n = 119.

The *f*-value for the third grade Spring Reading Curriculum Based Measure was higher than that of the *f*-critical. As a result, the decision was made not to reject null hypothesis #1 when comparing the district-affiliated performance to the comparison groups. A visual scan of the data highlights that a difference existed when data from this category was compared to the district-affiliated group and the home group. However, the district-affiliated group performed at a similar level to the community-based group.

Table 13 and 14 provide insight with regard to MAP Communication Art scores at the third grade level.

Table 13

Summary of Third Grade MAP Communication Arts Scores

Groups	*Count*	*Sum*	*Average*	*Variance*
3rd (C)	45	30154	670.0889	966.8556
3rd (DA)	45	29954	665.6444	992.9616
3rd (H)	26	16859	648.4231	1045.854

Note. C = Community-based group. DA = District-affiliated group. H = Home-based group.

Table 14

ANOVA Third Grade Spring MAP Communication Arts Scores

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	8070.69	2	4035.345	4.057669	0.019869	3.076574
Within Groups	112378.3	113	994.4982			
Total	120449	115				

Note. Alpha level = .05. n = 119.

The data in Table 14 supported the researcher to not reject null hypothesis #2. The *f*-value (4.057669) was generated to be higher than the *f*-critical (3.076574). Therefore, the findings indicate that participants from the district affiliated program exhibited a higher level of performance on the MAP Communication Arts subtest in comparison to the home group. However, the district-affiliated participants performed at a similar level to the community-based participants.

Tables 15 and 16 reflect the data extracted in relation to the MAP Mathematics subtest taken at the third-grade level.

Table 15

Summary of Third Grade MAP Mathematics Scores

Groups	*Count*	*Sum*	*Average*	*Variance*
3rd (C)	45	29782	661.8222	1935.468
3rd (DA)	45	29493	655.4	1664.927
3rd (H)	26	16538	636.0769	1312.874

Note. C = Community-based group. DA = District-affiliated group. H = Home-based group.

Table 16

ANOVA Third Grade Spring MAP Communication Arts Scores

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	11171.35	2	5585.677	3.300481	0.04045	3.076574
Within Groups	191239.2	113	1692.383			
Total	202410.6	115				

Note. Alpha level = .05. n = 119.

The data in Table 16 supported the researcher in not rejecting null hypothesis #3. The *f*-value (3.300481) was generated to be higher than the *f*-critical (3.076574), indicating that participants from the district-affiliated program exhibited a higher level of performance on the MAP Mathematics subtest. The examination of the data demonstrated a difference in performance among the home group and the district-affiliated group. However, the district-affiliated level of performance was did not significantly exceed that of the community-based group.

The combination of the information found in Tables 13 through 16 supported the researcher in not rejecting hypothesis #4. The data communicated that the district-affiliated program participants exhibited a higher level of performance in comparison to the home group on both MAP measures; however, the performance of the district-affiliated group did not exceed that of the community-based participants on those measures.

For all grade levels involved in the study, the number of office discipline referrals (ODR) was collected and an analysis was performed using an ANOVA. There was not a grade level in which the *f*-value related to the ODRs exceeded the *f*-critical value; therefore, the researcher did not reject null hypothesis #5. Those who were district-affiliated participants did not receive statistically fewer ODRs than those who were in the secondary comparison groups.

A review of the above quantitative data summarized in the tables and body of the text supported the rejection of null hypothesis #6 and proves alternative hypothesis #6 to be true. The data illustrated multiple times that there was a definite difference in at least one category when comparing the primary group to a subgroup of the randomly selected

secondary group. The district-affiliated group consistently outperformed the home group contained as part of the secondary comparison group.

Interviews

The interviews conducted with teachers and parents were designed to assist the researcher in qualitatively addressing the following question related to the study:

> What are the perceptions of the parents and district kindergarten teaching staff on children's participation in such a program?

Teacher Interviews

All interviews with the kindergarten teachers were conducted in a structured manner and adhered to the outline of interview questions in Appendix A. They were conducted face-to-face and scheduled outside of the instructional day. The interviews were audio-recorded and then transcribed for the purpose of content analysis. The researcher extended an email invitation to all kindergarten teachers within the district under study, five of whom responded with a desire to participate. All of the interviewees were female in gender. The range of experience of working within the district under study spanned 6 to 19 years, assuring the researcher that the teachers interviewed understood the expectations of the district for students at the kindergarten level.

The interviews were conducted at the onset of a new academic year to intentionally assist the teachers in focusing on the expectations at the point of kindergarten entry. There was representation from each of the four elementary schools that deliver programming to kindergarten students across the district. The researcher felt as though those interviewed were thoughtful in their responses and offered information that was not captured in the quantitative design of this study.

Interview #1: Kindergarten teacher A. Teacher A had acquired ten years of teaching in the district under study. She shared her perception that the essential skills necessary for success in the initial days of kindergarten include the learner's ability to sit, listen to multilayered directions, and transition easily from one activity to another. She felt the latter skill was critical, especially in her half-day kindergarten class, where she and the students must transition quickly from one important activity to another. She also felt that any knowledge that the students had related to pre-academics would be advantageous, especially letter identification and letter sound awareness.

Teacher A devoted time within the interview to talk about the current face of kindergarten, ". . . not a lot of time for hanging out or doing art projects. It's curriculum-based, time-driven activities that we are trying to finish." She discussed that she offers the learners in her classroom a great deal of visual cues and verbal prompts. This was especially true of the strategies during the daily circle time. Teacher A shared that circle time approached 20 minutes per day and was usually inclusive of a book, calendar work, an interactive whiteboard activity, and a question of the day.

Through her observations of students and their level of performance in the activities previously described, Teacher A felt as though she can accurately pinpoint students who participated in a pre-k program before entering her classroom. Her red flags, which she divulged in the interview, included uneven development of a child. Her belief was that if they were developing unevenly and the parents failed to share this information, that they most likely had not been consulted by educational professionals. She also spoke about a child who entered her classroom with a major speech concern that was immediately noticeable. Teacher A said that she knew that if the child had spent time

in a formal pre-k program the issue would have been addressed prior to her interaction with the student.

In a discussion on quality of pre-k program for those who participated in formal programming, Teacher A said that she did not feel as though she could accurately assess the level of quality of the child's former program. She spoke confidently that she could decipher from her initial days with the learners whether or not they accessed a pre-k program. She felt that as long as they participated in a program, whether or not it is district affiliated or community based, that they fared better socially and academically in comparison to their peers who did not have a similar experience.

Interview #2: Kindergarten teacher B. Teacher B is a half-day kindergarten teacher in the district under study. She had been teaching for 6 years in the kindergarten classroom. When asked about her perception of the skills she deemed to be essential for thriving in a kindergarten classroom, she commented on the ability to follow directions, work within the context of a group, understand the importance of turn-taking, and being a good listener.

Teacher B focused on the necessity for the learners to be able to listen intently to the teacher and peers from day one. She shared that she had to spend time explicitly teaching listening skills to many of her students, which she considered a hallmark of those who did not participate in formal pre-k programming. She expressed with confidence that she was rather accurate in determining how children had spent their pre-k years. Teacher B communicated that the majority of her students arrived knowing how to work in a group, line up as a class, and identify some letters of the alphabet. However, she stated that there were still some children who attended pre-k programs who were not

successful with these tasks. She communicated that many times when this surfaced, she later became aware that the children had an issue that had not been identified prior to the transition to kindergarten.

Teacher B articulated that though she could not accurately identify the preschool program from which the students exited, she felt that as long as they had a quality experience their level of success in kindergarten would be enhanced. While she was unable to identify all students who participated in the district-affiliated program, she did speak to the level of appreciation that she had for the transition process and information that the district-affiliated program shared regarding students who receive early childhood special education services.

Interview #3: Teacher C. At the time of the interview, Teacher C was at the onset of her tenth year in the district. She offered thorough and thoughtful responses throughout the duration of the interview process. When asked about skills that she viewed as essential for student success in kindergarten, she stated that "…we have kids who come to us with all different levels, so it is our goal to take them from where they are," continuing on to reflect her core belief of differentiation. While she made it her personal mission to meet students where they were in their journey of learning, she was still able to identify some key skills through her lens.

Teacher C defined the children who were most successful as those who came to her classroom writing their names, demonstrating good book skills, able to count, and knowing their alphabet and associated letter sounds. To complement the pre-academic skills, Teacher C commented on the necessity that the children were able to sit for a developmentally appropriate period of time, which she defined as the length of a typical

story. She focused also on conflict resolution skills, social skills, and positive peer interactions.

When asked about her ability to differentiate between those who had attended a pre-k program and those who had not, Teacher C said that her determination rate of accuracy is 95%. She informed the interviewer that the majority of students entering her classroom had accessed some form of pre-k program prior to their work together. The initial basis of her decision as to how they spent their prior years included observational assessment of their ability to work conflicts out with others, their ability to play with peers, and overall level of flexibility within the context of the group. Teacher C did report that she noticed a difference in the quality of the programs that the students accessed. She felt that while they were the minority, there were still programs operating in the area that offer primarily a daycare-type environment. She said that learners attending these types of programs did not reflect their understanding of routines and transitions in their daily work with her. In addition, they did not know the basic pre-academic concepts related to premath and preliteracy.

Teacher C talked about her prior experience with students who were unable to attend a pre-k program. She said that she had a few learners each year who come to her lacking a formal experience. She assumed that the reason they did not access a program was connected to finances. She went on to discuss a learner that she had a few years ago who was now entering second grade at the time of this study. She spoke of his continued struggles. Although he had received intense interventions, Teacher C reported that the gap that was apparent from his initial year of elementary school still existed. She

concluded the interview by restating her perspective on the importance of all children being able to access pre-k programming as a foundation for later learning.

Interview #4: Teacher D. At the time of the interview, Teacher D had 19 years of experience working in the focus district. In her description of the essential skills needed to begin elementary school from a successful standpoint, she narrowed her focus to the social skills arena. She placed the ability to ". . . get along with other kids, ability to share, and the ability to take turns" at the top of her priority list. She also touched on the ability of the child to be able to maintain attention to a variety of tasks. She emphasized the importance of maintaining attention by describing the academic focus that was currently apparent in kindergarten classrooms. Following the social skills, Teacher D emphasized the importance of a variety of basic pre-academic skills. However, she spent more time discussing the negative consequences associated with lack of socially competence.

Teacher D felt confident in her ability to identify those who participated in pre-k programs versus those who did not. She reflected on her class demographics from the prior year, describing 18 learners whom she could easily tell had a structured, academic type of preschool setting, and highlighting two of her students who were not afforded that type of pre-k experience. In reflection, she felt as though the two students who were lacking that experience struggled throughout the entire year trying to close the learning gap. When the researcher asked probing questions about the key indicators that helped her to know the status of the two learners who did not have a pre-k experience, she focused on their inability to listen, disengagement, and lack of understanding group dynamics. Teacher D said that she worked at an intense level on social and academic

tasks from the first day of kindergarten. She still believed that the learners described were not performing at the same level as their peers who accessed a quality program even though they had received targeted, systematic intervention.

In discussing her ability to distinguish one preschool program from another, Teacher C felt as though she was unable to do that for the majority of learners. She offered positive feedback about the district-affiliated program related to the level of information sharing and the transition process for students with individual support needs transitioning from the one early childhood center in the district.

Interview #5: Teacher E. Teacher E had been employed in the district under study for 17 years. Her response to the essential skills for survival in the kindergarten learning community was heavily weighted on social skills. She articulated being able to share, take turns, and an ability to attend as being critical for the student's positive learning experience. Beyond the scope of social skills, she highlighted meaningful letter awareness and number identification as helpful.

Teacher E offered assurance through the conversation that she would be able to determine the children who participated in a pre-k program. She defined her initial indicator to be the level of student adaptability to daily routines. She feels that a student being able to quickly adjust to a routine-defined day serves as evidence of participation in formal programming. She shared that she cannot tell one specific preschool from another, but that she can tell if the children went to a structured program or more of a "stay and play." She felt as though those students who went to what she classified as a "stay and play" did not demonstrate as refined conflict-resolution skills, was not as accustomed to a

routine, and were not able to focus for as long as those who participated in a more academically structured program.

With regard to differentiating between the district-affiliated program and the community-based models, Teacher E felt as though both were equally successful in achieving kindergarten readiness for the typical student. However, she did devote time in the interview to commending the district-affiliated program on the existing transition process and the related service supports available to struggling learners participating in the district-affiliated program.

In the final moments of the interview, the conversation shifted to focus on students whom Teacher E had in previous years who spent their early childhood years learning primarily in the home setting. She shared that in conversation with these families, the decision not to participate in pre-k program hinged on financial obstacles. She also discussed the additional implications of a family who is unable to access preschool from a financial perspective. Their challenges extend beyond access to preschool and into their everyday lives. She spoke about their limited exposure to the world beyond their home as a result of financial challenges. Teacher E discussed the intense level of support that is needed for these students during the kindergarten year and often for years to come. However, she did share that the majority of students in this situation made progress, but it took a wealth of resources and time to plan as well as deliver the targeted interventions necessary for individual success.

Teacher Interview Themes

Navigating the kindergarten classroom. As the analysis and coding of interviews took place, themes emerged through the lens of the teachers with regard to essential skills

for success in the initial days of kindergarten. The consistent priority across all five interviews was the preference for the children to enter kindergarten with the basic social skills intact and exhibit beginning learner behaviors.

There was emphasis placed on the ability of the students to interact at a developmentally appropriate level with their peers. The social skills touched upon during the interviews were inclusive of the learner to share, begin to resolve conflicts with peers, and take turns. The importance of demonstrating these social skills appeared to be paramount above the pre-academic knowledge a student needs to thrive in the kindergarten learning environment based on the researcher's reflections on the interviews.

In addition to social skills being conveyed as a priority, the teachers also focused on the importance of students exhibiting beginning learner behaviors. They discussed that the students need to possess listening skills and demonstrate the ability to attend to a story or lesson. The third learner behavior consistently found within the interview content was flexibility to follow classroom routines and make transitions throughout the course of the instructional day.

Embedded in the content of all teacher interviews was the pre-academic piece. The teachers focused on pre-academic skills that ranged from letter recognition to beginning to write letters to book handling skills. Although each discussed pre-academics, they all placed increased priority on students entering kindergarten being able to socially navigate and negotiate the classroom environment.

Identification of students lacking a pre-k experience. The teachers interviewed each brought a wealth of teaching experience to the interview session. As a result of their

many years of individual and collective experience, they conveyed a high level of confidence in their ability to identify the students who were not participants in a pre-k program. They also offered key indicators that they each observed within the initial days of the kindergarten year that served as evidence to support their thinking.

The teachers communicated that the students who did not participate in a pre-k program often exhibit social challenges from the onset of the kindergarten year. They shared that these students consistently had difficulty working within the norms of the group, keeping pace with the multiple transitions across a school day, and attending to teacher direction. These pieces, which the teachers described as essential for success, became the focus for the students who did not access a pre-k program. This shift in focus often created unintended consequences with regard to pre-academic skill development.

Distinguishing between district-affiliated program and community-based models. The teachers all reported that they could easily identify the students who did not attend a formal program in the pre-k years. However, when asked if they could distinguish between the preschools that their students attended they did not feel as though this was discernable in a global manner.

They commented on their perspective that most learners who attend a preschool program within the community come to kindergarten exhibiting prosocial behaviors and demonstrating foundational pre-academic skills. Multiple interviewees highlighted a positive difference between the district-affiliated program and those programs based in the community. This distinguishable difference focused on the transition process from the pre-k program to the elementary school.

The teachers felt as though they were provided with a wealth of information for students transitioning from the district-affiliated program. They said that they utilized this information to assist them in making class lists and supporting students as individuals. They found this information to be especially helpful when a learner had been receiving targeted or individual interventions as well as for those children who had received early childhood special education services.

Parent Interviews

All parent interviews were conducted in a semi-structured manner and followed the questions found in Appendix B. The recruitment for parent participation was handled through randomized data within each of the groups, community-based, district-affiliated, and home. The researcher contacted the parents who were randomly selected within each group until two parent interviews from each category were secured. The parent interviews took place over the phone. They were audio-recorded and then transcribed for analysis purposes. The parents interviewed all had children who had completed a minimum of one quarter of their kindergarten year.

Interview #1: Community-based parent A. Parent A reported that her child attended a community preschool for his pre-k experience. He participated three days per week for two and a half hours each day. Her son attended the program beginning at age three for two years prior to transitioning to kindergarten.

Parent A shared that her decision for her child's attendance at a particular preschool program was influenced by her awareness of other children who had participated in that program. She felt as though the children that she had known exiting that program were prepared for success in kindergarten. She also shared that it was

important to her that her child attend a pre-k program where he would make a connection with peers who would transition with him to elementary school.

In reflecting on his pre-k experience, Parent A felt as though her child was prepared to follow school routines and understand teacher expectations. She also felt as though through his opportunity to work with other children he further developed his problem-solving skills and had much practice refining his social skills. She noticed that he became increasingly proficient at sharing with others and working more collaboratively. She commented that he learned academic skills ranging from letter skills to writing to cutting.

Parent A felt as though the experience her child received from ages 3–5 prepared him to enter kindergarten more equipped for success. She did comment that during attendance at his pre-k program that there was a period of time where he was having sensory integration problems. She discussed how the community-based preschool consulted with the district-affiliated preschool for strategies to support her child as an individual. Parent A felt that the community-based preschools having access to the resources channeled through the school district benefited her son tremendously.

At the close of the interview, Parent A restated that the preschool experience was a positive precursor to kindergarten for her child. She felt as though he was successful in kindergarten from an academic as well as a social perspective. She was pleased with her decision to allocate resources to access what she perceived to be a quality pre-k program.

Interview #2: Community-based parent B. Parent B reported that her child attended a community-based preschool model for three years prior to transitioning to

kindergarten. Her child's attendance ranged from two to three days per week. The length of her instructional day was three hours.

Parent B communicated that location was a primary factor in influencing her selection of the preschool program. In addition to location, she valued the perspective of her friends who had sent their children to that program in previous years. The ability to volunteer in her child's classroom also was an important piece of her selection criteria.

In reflection of her child's kindergarten experience, Parent B felt as though her child was prepared for the social and academic challenges of the kindergarten environment. She felt as though her direct efforts to expose her child to a variety of experiences combined with the access to the formal pre-k program served as a powerful combination for the child. She also commented on a program that her child's receiving elementary school offered, which was designed for children from ages three to five and provided experiences for the children in which they could actively participate at their receiving elementary school with future kindergarten teachers. Parent B viewed this as a positive contributor in assisting her child with a smooth transition to kindergarten.

Interview #3: District-affiliated parent C. Parent C informed the researcher that her child attended the district-affiliated program for his pre-k experience. She stated that he attended for two years prior to transitioning to kindergarten. Her child attended two to three days per week for three hours each day.

Parent C said that her selection of the district-affiliated program was made as a result of how pleased she was with her older child's experience with the program. She felt as though the curriculum offered was comprehensive and that the teaching staff was knowledgeable.

In review of her perception of her child's kindergarten experience, Parent C felt as though he was academically prepared for the rigor present in the kindergarten classroom. She articulated that she viewed the teachers from the district-affiliated program as being on the same page as the receiving kindergarten team with regard to expectations. Through a social lens, she viewed her child as being confident enough to be a leader, while also understanding how to be a participant in the group.

In closing, Parent C commented on the transition from one environment to another happening seamlessly for her child. She felt as though his greatest struggle in the new environment was navigating the daily structures. She believed that the origin of this challenge was connected to his personality style and difficulty remaining focused. She was pleased with the experience the district-affiliated program offered her child.

Interview #4: District-affiliated parent D. Parent D reported in the interview that her child attended the district-affiliated pre-k program, participating two years prior to transitioning to kindergarten. He attended four days per week for three hours each day.

Parent D communicated that her decision to send her child to the district-affiliated program was based on research she conducted on pre-k programs in the area. Parent D's mother spent her tenure as an educator working for Special School District and viewed the program as being high quality. She combined her mother's perspective with research she had conducted to make the selection.

In looking back on her child's kindergarten experience, Parent D shared that she felt her child entered kindergarten prepared to succeed. She articulated that he had practice focusing on developmentally appropriate tasks, meeting teacher expectations, and working collaboratively within a community of learners. Pre-academically speaking,

she said that her child knew all of his letters, numbers, and precursors to being a reader. In addition, she commented on the level of collaboration of the staff in her child's pre-k classroom. She viewed this as serving as a model for him to be a team player as he moves through the educational system and beyond.

Parent D conveyed during the final moments of the interview that she had gratitude for the experience her child had in the pre-k years. She felt as though her child was placed in a nurturing environment that set the course for the rest of his academia.

Interview #5: Home parent E. Parent E began the interview by reporting that he had two children in kindergarten within the district under study. He communicated that neither of them participated in a pre-k program. He stated that home served as their primary learning environment prior to entering kindergarten.

When asked how he made the decision to keep them home for their pre-k years, he stated that it was not truly his decision; the tuition served as a barrier for him being able to access programming for his children. He commented that while there are a few programs that make tuition adjustments based on family income that he still could not pay the amount necessary to send both children. The lowest tuition rate he encountered on his quest to find a program for his children was $75.00 per week per child. He clearly stated that although he possessed the desire for his children to attend, that his family was not in a position, financially speaking, to allocate that much to their children's education.

From his perspective, Parent E felt that his children are surviving in the kindergarten environment. He shared that one of his children is having more struggles than the other. He felt if they had attended a pre-k program that it might have impacted their awareness of how to be a learner in school and understand more about what is

expected of them. He clearly stated that if he had found a program where finances had not served as an obstacle that he would have sent his children without question. Parent E stated that he would have appreciated the opportunity to expose his children to experiences that would have helped them get ready for school and have some pre-academic awareness. He did state that the program would have needed to have flexible hours to accommodate his work schedule. He said that accessing a half-day program without transportation assistance would have posed logistical challenges.

As the interview concluded, Parent E discussed his ideal vision for supporting his children in the educational system. He focused on the establishment of more of a partnership with the school district and families. He talked about being able to more easily access resources to support learning, such as computers. He also commented on the financial barrier that he faced in kindergarten entrance of not being able to pay tuition for a full-day learning experience for his children. Although Parent E and his children are early on the journey of learning within the educational system, they have already faced challenges where finances have influenced access.

Interview #6: Home parent F. Parent F opened the interview by stating that she currently has a child attending kindergarten in the district under study. She revealed that her child did not attend a pre-k program prior to kindergarten entry. She proceeded to discuss the factors contributing to her decision.

Parent F stated that the only reason for her child's lack of participation in a pre-k program was finances. She said that she was unable to locate a program for her child that would allow her to attend within the resources that they had available to them. She communicated that they were a single-income family and that finances were tight.

When inquired about how her child was performing in kindergarten, Parent F conveyed that her child was behind in most basic areas, inclusive of reading, writing, and speech development. She also touched upon her perception of his social development, stating that her child was lagging behind his peers in terms of socialization. Parent F said that one of her child's biggest challenges was attention to task. She strongly communicated that if her child had a pre-k experience before entering kindergarten that she felt it would have greatly benefited him in each of the areas mentioned.

Parent F stated that the pre-k experience would have specifically afforded her child the opportunity to interact with other children, understand the expectations of being in a classroom environment, and exposure to a variety of pre-academic tasks. She concluded the interview by saying that if she could have located a program that fit within the budget of finances for her family that she would have sent her child to participate. She felt that it would have contributed to a more positive and successful kindergarten year.

Parent Interview Themes

Effectiveness of pre-k program. While reviewing the parent interview transcripts for consistent content, there was an emergent theme across all categories that was apparent to the researcher. The parents, regardless of their decision to enroll their children in the district-affiliated pre-k program or a community-based model, highlighted the efficacy of the selected preschool program.

The parents whose children participated in a formal pre-k program viewed it as an effective means of preparing their children to be successful in the early elementary years. The parents commented on the intentional focus on social and academic development

present in the pre-k programs that they each selected for their child. Each of them made direct connections between the pre-k experience and level of success in the kindergarten year. They felt that they all accessed quality programs for their children that will make a difference in their child's educational experiences.

Limited access. In reflecting on the interviews with the parents whose children did not access a pre-k program, the primary reason was the financial barrier. These parents communicated that they both possessed a desire to have their children participate and place great value on education, but the tuition served as an obstacle. These parents also viewed their children as struggling in comparison to their peers in their initial year. They described the struggles and felt as though they would be experiencing more social as well as academic success had kindergarten not been their initial learning experience.

Deductive Conclusions

A review of the data supports a positive correlation between participation in a pre-k program, whether it is district affiliated or community based, and academic success in the initial elementary years as evidenced through performance on some AIMSweb benchmarking items and the MAP assessment administered at the third grade level. The analysis of the single factor ANOVA data revealed that the largest impact of pre-k program for this population was evident at the third-grade level.

The ANOVA test generated a definite difference for each assessment item contained in this study at the third-grade level. For each data set, the *f*-value exceeded the *f*-critical value indicating a statistically significant difference existed between the groups. Upon conduction of a visual check by the researcher, the home group was the group that was categorized with the definite difference in regard to performance on all items specific

to that grade-level. The data illustrated that those who attended a formal pre-k program exhibited a higher level of performance on the AIMSweb Reading Curriculum Based Measure, as well as both of the MAP assessment subtests.

With regard to the Reading Curriculum Based Measure data points collected in the fall, there was an average discrepancy of 22 points between the home group and the district-affiliated group. The gap was 26 points when comparing the home group to the community-based group. Further examination of the data highlighted that the gap was still present on the same measure when gathered in the spring. The home group scored an average of 19 points below the district-affiliated group, and 26 points below the community-based participants.

The difference in performance among the groups was also reflected in the summary data of the MAP Communication Arts and Mathematics subtests. When reviewing the data specific to the MAP Communication Arts test, the home group averaged 17 fewer index points on the test in comparison to those in the district-affiliated program. The home group scored an average of 22 points lower than its peer group that accessed a community-based model. The data specific to the MAP Mathematics test also closely mirrored the findings of the performance on the MAP Communication Arts test. The home group scored an average of 19 index points fewer than their peer group that participated in the district-affiliated program, and 26 index points below its peer group that attended a community-based model.

Summary

Analysis of the quantitative data from this study resulted in the decision not to reject null hypotheses # 1–5. While null hypotheses # 1–5 were not rejected, the data

supported the rejection of null hypothesis #6 and concluded alternative hypothesis #6 to be true. The data evidenced that there is a significant difference in performance in at least one of the categories when comparing performance across the three groups (attended district-affiliated pre-k, attended community-based model, spent pre-k years in the home environment) in each of the measured variables listed in hypotheses # 1–5. The district-affiliated group consistently performed at a significantly higher level that the home group, but at a comparable level to the community-based participants

This study established a positive relationship with participation in a formal pre-k program and specific performance on assessment items at the third grade level. The home group performed at significantly lower on all data points analyzed in the third-grade year. The data indicated that those students whose pre-k learning was primarily in the home are likely to score fewer points on the Reading Curriculum Based Measure, as well as the MAP Communication Arts and Mathematics subtests.

The upcoming chapter contains a detailed discussion of the results. The chapter is also inclusive of implications for effective schools and recommendations for application. It concludes by highlighting considerations for future application.

Chapter 5 – Discussion

This mixed-methods study analyzed the relationship between participation in a district-affiliated pre-k program and performance at the elementary level in grades k–3. The independent variable in this study was attendance at the district-affiliated pre-k program for a minimum of one year prior to kindergarten. The primary comparison group consisted of those students who attended ABC Elementary Schools in grades 1–4 during the data collection timeframe, and formerly attended ABC Early Childhood Center. The secondary comparison group was comprised of those who attended ABC Elementary Schools in grades 1–4 during the data collection timeframe, and formerly attended a community-based pre-k program, or experienced their learning prior to kindergarten primarily in the home.

The dependent variables were academic performance on the local and state assessments as well as the number of office discipline referrals measured across the grade year that the student was in during the 2008–2009 school year. These specific measures, inclusive of AIMSweb benchmarking items and Missouri Assessment Program subtests, were intentionally selected as a result of their level of reliability and validity related to reflecting performance toward proficiency on identified state standards. The researcher also chose these measures because they are utilized by many educational institutions beyond the district under study as a measure of individual student performance.

In addition to the quantitative data discussed above, this study also included a qualitative component. This consisted of kindergarten teacher and parent interviews. There were themes that emerged in both groups. Both of the groups expressed their

viewpoint as though those who participated in preschool were more likely to be successful in their initial transition to the elementary environment.

The teachers interviewed shared that the students who did not participate in a pre-k program were easily identifiable. They consistently discussed the challenges faced in navigating the kindergarten classroom by those who were absent of a pre-k experience. The teachers reported that they repeatedly observed students without former pre-k experience enter their classrooms experiencing difficulty negotiating socially with others, demonstrating minimal pre-academic knowledge, and being challenged to attend to a task. They said that these students often exhibit social challenges at the point of kindergarten entry. They shared that these students frequently exhibited difficulty working within the context of a group, managing multiple transitions across an instructional day, and listening to teacher direction. The final trend that was that the teachers interviewed were not able to distinguish between district-affiliated participants and community-based participants. They felt that regardless of delivery model that those students were overall more successful in the kindergarten environment.

In addition, there were parents interviewed from each of the comparison groups. The parents interviewed who sent their children to a pre-k program were pleased with the experience and the level of success demonstrated by their child in the kindergarten setting. They had various reasons for selecting the pre-k program, which ranged from location to curriculum. When interviewing parents from the home group, they stated that they would have desired for their children to participate in a formal pre-k program. However, the tuition created a financial obstacle for them to be able to access the program. In reflection, they felt that their children would have been better prepared to

face the rigor of kindergarten had they been able to participate in a formal program. They both discussed specific academic and social struggles of their child with regard to the kindergarten classroom.

The triangulation of data examined in this study demonstrated that students who spent their years prior to kindergarten primarily in the home environment were more likely to exhibit a lower level of performance on the assessment measures selected, particularly at the third-grade level. The data analysis also illustrated that the district-affiliated program attendees consistently scored at a level approximately equivalent to that of their peers who accessed a community-based program across grades k–3. Statistically speaking, the difference between the home group and those who accessed formal pre-k programming was significant.

Implications for Effective Schools

To begin to successfully make progress toward meeting the criteria of 100% proficiency for all students by the year 2014 as the target set by NCLB legislation, school districts need to continuously be examining strategies to make this a reality. As discussed in the earlier review of literature, schools are often not allocating available funds toward programs designed to service children in the years prior to kindergarten entry. Research indicates that teachers are implementing effective strategies once the students enter kindergarten to target the individual needs of the student.

While tremendous efforts are being made to address the individual needs of the learners after entering the elementary setting, these strategies are sometimes being employed too late to result optimal effectiveness. The literature review discussed the reality that the gap in academic performance and social competency exists well before a

student enters the kindergarten classroom. The literature reviewed continuously offered data to support the notion that students who accessed a pre-k program perform at a higher level than those who did not have a similar experience. Given the information contained in the literature review, the analysis of data related to this study suggests that school districts may need to begin to examine how to better focus efforts to make a difference in the earliest years, from ages 3 to 5, in the lives of their learners.

Implications for Social Development of a Child

As evidenced through the review of literature and the body of this study, students who did not access a formal pre-k are more likely to face a plethora of social challenges upon kindergarten entrance. While the review of quantitative data in the way of office discipline referrals did not offer great evidence to support that a difference exists in this particular study, the interviews conducted with both parents and teachers consistently described the lack of social competency in the children who were absent of a pre-k experience.

From the teachers' perspectives, the social challenge was the largest faced by those from the home group. The lack of preparation in the social arena had an unintended consequence on the academic piece. The teachers articulated that they often spend time that they would be working on academic tasks supporting these children in socially navigating the environment. If districts do not offer access for pre-k programming for all learners, they need to explore other avenues for reaching the children from a social perspective prior to the first day of school. There are possible avenues for accomplishing this that need to be accessed, such as increased parent education that might lead them toward available resources within the community that are not based on financial access.

For instance, the school district could examine how to raise awareness of programs that are free to residents, such as Parents as Teachers. This program is designed to serve families with children age birth to 3 at no cost. The program partners with the families to address the development of the child from all areas, including social. At a minimum, the possibilities for connecting families to opportunities to better prepare their children for working within the context of a group need to be communicated to all families.

Implications for Academic Development of a Child

As demonstrated in this study, as well as a multitude of studies within the review of literature, the absence of a pre-k experience can have an impact on the child beyond that of the social area of development. The research has shown the impact on academic performance to be significant. Across the variety of measures in grades k–3, the students from the home group consistently scored at a lower level than the children who had a pre-k background. This was especially evident at the 3rd grade level on the Missouri Assessment Program tests in the areas of communication arts and math. If the children are not performing at a proficient level in the core areas of literacy and math by the middle of their elementary career, then the challenges faced in those primary content areas will likely have negative consequences for all areas of their learning. Those two core content areas seem to span as a foundation for understanding across all other curriculum topics.

Factors to Include in Future Studies

Results of this comparative study established that a positive relationship exists between participation in a pre-k program and level of performance on a variety of reliable measures in the early elementary years. The evidence of this relationship might serve as a

catalyst for school districts to examine the participation level of students in their district in regard to pre-k programming. For the site of this study, the community-based models and the district-affiliated model both produced similarly positive results for participants. Other districts might find a greater variance of performance when comparing the district-affiliated program participants to the community-based model participants. Within the geographic region of each specific school district, there could be varying levels of quality in terms of the community-based pre-k programming. The array of programs across the district under study appeared to be consistent in producing positive gains in participants.

It is important that districts considering a replication of this study be aware of the intentional attempts of the district study site to begin focused targeted intervention upon immediate entrance in kindergarten. The district study site began systematically addressing the learning needs of the children within the first days of kindergarten. The mission of the district where the study occurred was grounded in identification of individual learning needs, addressing the concerns through the use of research-based strategies, and consistently monitoring progress toward proficiency. In the event that the study had occurred in a district that did not have a systematic plan for addressing individual student needs in place, the gap could be greater between the home group and pre-k participants than reflected in this study.

Results from this study might be strengthened through consideration of following the same group of participants from kindergarten through third grade. In addition, the results could have been strengthened had the researcher taken a stratified random sample approach to more closely consider equity in gender and socio-economic status across the

three groups. The researcher examined a random sample of different participants at each grade level. It could offer more power and credibility to the study had the researcher been able to examine the same group of participants over a four-year span of time, as well as interviewed their teachers and parents at various points throughout the process.

An additional factor that might lend additional credibility to the study is the researcher more closely examining which community-based programs yielded the greatest results in student performance. The researcher simply categorized all of the students into three categories. In hindsight, it would have been interesting to evaluate the variance in performance of the participants exiting the various community-based models.

With regard to the home group, it would be interesting for more parents to be interviewed. The parents representative of this group that were interviewed as a part of this study both discussed finances as the deciding factor for their child not to participate in a pre-k program. However, there are most likely other factors contributing to the decision-making of those families whose child remained in the home for learning during the pre-k years. It would be interesting to gather more perspectives from this group in future studies.

Recommendations

As school districts across the nation are seeking avenues for producing increased student achievement and closing the gap, the researcher believes the implementation of pre-k programming for all should be viewed as a possible effective strategy. As this study demonstrated, the delivery of this pre-k program could be within the confines of a community-based program or a district-affiliated program.

For school districts that begin to consider how to ensure pre-k programming for all students, the researcher suggests that the following areas highlighted be considered to inform decision-making. Each of the factors described below could greatly impact decision-making and allocation of finances. It is imperative that they be explicitly explored as each district population and community served has varying needs.

The decision-makers within the district should conduct a thorough assessment of the population within district accessing pre-k programs. This assessment could reveal critical information such as the percentage of the population of students age 3 to 5 residing in the district accessing pre-k programs and the percentage of the future elementary students not participating in pre-k programs. From that point, the district could further examine the demographics of those not participating. This would serve as important information for them to have to inform the next stages in their planning because as discussed in the review of literature the research shows that those students from low socioeconomic levels tend to benefit most from a pre-k experience.

In addition to examining their population to determine how students are spending their years prior to kindergarten entry, it is important that they conduct an analysis of performance assessments of the student population in initial elementary years. This examination needs to focus on how students who attended community-based models, those who had their primary learning experience in the home, and those who attended a district-affiliated program, if applicable, are performing in the elementary setting. While this study demonstrated that the students from the home are performing at a significantly lower level when compared to students who attended pre-k programming, this might not

be true for the population that each district serves because a there is variance in quality level from one home experience to another.

The data gathered from the assessment of how the student population is spending their pre-k years combined with how each group is performing in the elementary setting needs to be shared with district stakeholders. This data needs to be presented in a way that allows the decision-makers to utilize it to make decisions that are the best fit for their given population. If the data communicates that pre-k programs are making a difference, the suggestion would be that the district personnel continue to explore the next steps of achieving access for all students.

The next proposed action step would be for districts to conduct an assessment of needs. This could consist of a series of interviews with families who have not accessed pre-k programs in the past and are not currently accessing programs. The purpose of the interview would be to determine if there is a vested interest in accessing a program, to establish the reasons for not accessing a program, and to discuss individual barriers to access if they exist. As highlighted in the teacher, as well as parent interview section of this study and discussed in the review of literature, financially accessing pre-k programming seems to create a barrier for many families. It would be important for the district decision-makers to keep this in mind during the planning phases of the future of pre-k programming specific to their district. They would need to analyze how to make access a possibility for all students, regardless of ability to pay tuition. They could explore from a financial lens how many students they could fund to attend or examine the possibility of a sliding scale fee based on family income.

Once the district personnel had an understanding of the needs of the district and the needs of the families to be served through this model, they would need to conduct a cost benefit analysis. This would be inclusive of how many students within the district population would benefit from being able to access a pre-k program that are not currently doing so, as well as exploring the possible delivery systems for offering a pre-k experience to their population. If the community-based models are producing positive academic and emotional gains for their former students that extend into the elementary years, then the district could examine the possibility of partnering with community preschools to serve their students.

In addition, the district could also examine how the cost of beginning or expanding district-affiliated pre-k programming. As a critical piece of this financial analysis, it is important that the district examine the percentage of resources being utilized by students in the elementary years who did not access pre-k programming. This information could give them a better understanding of the early investment that they might be making in the pre-k years that could reap greater benefits in the years ahead. It could illustrate that the finances allocated be minimized in the long term based on utilization of fewer resources in the elementary years due to a quality pre-k experience. The research unveiled earlier in this study communicated that those who transition to elementary school lacking a preschool experience are already behind in comparison to their peers who participated in a formal program. This would mean that they would need more resources to address the gap that exists than their peers who attended a pre-k program.

At the conclusion of exploring the relationship of the outline above to the specific population within the district, the researcher believes that the district considering this pre-k access would have enough information to begin to make an informed decision about the specific components surrounding pre-k programming that would result in the best fit for the intended population. The decision makers within the district would need to take the necessary time to determine the return on their investment, gather multiple perspectives from across their community, and think from a perspective of how to allow equitable access for each and every child residing in the district.

Summary

This comparative study was conducted to assess the efficacy of district-affiliated pre-k programming in the district under study on academic performance and social competence in the early elementary years. To accomplish this task, student performance on a variety of assessment items specific to each grade level in k–3 were evaluated as well as the annual number of office discipline referrals received. The data was collected during the 2008–2009 school year. The primary comparison group was students who attended the district-affiliated pre-k program. The secondary comparison group was comprised of those who attended a community-based model, or spent their pre-k years learning in the home environment. Performance on district assessment items was compared for each of these groups on randomly selected participants at each grade level from k–3. In addition, the researcher conducted kindergarten teacher interviews and parent interviews. The data revealed that those students who did not access a pre-k program exhibited a lower level of performance on the defined measures, while the pre-k participants exhibited an overall higher level of performance regardless of delivery model

and program setting. This finding was conclusive with other studies highlighted in the earlier review of literature.

The expectations for performance, academically and socially, in the school environment continue to rise with the goal being that all students will achieve a level of proficiency as defined by their state in the immediate years to come. As a result of the increased demands facing kindergarten learners, it is preferable, as evidenced through the review of literature and the content conveyed during teacher interviews related to this study, for students to enter kindergarten exhibiting prosocial behaviors and possessing a plethora of pre-academic skills, which serve as the foundation for learning from the initial day of elementary school. For most children formal learning begins long before they depart for their first day of kindergarten. The constant struggle is for those who do not have the opportunity to access these learning experiences in the early years. The information gleaned from this study will serve to inform researchers and district decision makers as they examine the benefits associated with all children being offered equal access to quality pre-k programs.

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Appendix A

Kindergarten Teacher Interview Questions

1. What do you perceive as the essential skills necessary for success upon kindergarten entry?
2. From your observations at the beginning of the year, can you accurately determine students who have participated in a pre-k program? If so, what are the key indicators?
3. For those students who participated in a pre-k program, can you judge the quality of their preschool experience as it relates to their level of preparedness in the areas of preliteracy and math skills?
4. Can you differentiate between students who attended ABC Early Childhood Center versus those who participated in a community preschool program in terms of their level of understanding related to preliteracy and math skills? If so, what are the primary differences that exist between these groups of students?

Appendix B

Parent Interview Questions

1. Did your child participate in a pre-k program? (If yes, skip question number 5; if no, proceed directly to question number 5)
2. If so, where did he or she attend?
3. What caused you to send him or her to that particular program?
4. How long did he or she spend in this type of learning environment?
5. If your child did not attend a pre-k program, what factors contributed to your decision not to send him or her?
6. Do you feel your child was prepared to be successful in the kindergarten environment?
7. If so, what were the primary contributors to his or her success from your perspective?
8. If not, what experiences do you feel would have assisted him or her in performing at a higher level upon kindergarten entry?

Appendix C

Types of Quantitative Data to Analyze in Kindergarten Through Third Grade

Kindergarten Fall	Kindergarten Spring	1st Grade Fall	1st Grade Spring	2nd Grade Fall	2nd Grade Spring	3rd Grade Fall	3rd Grade Spring
Letter Naming Fluency	Letter Naming Fluency	Letter Naming Fluency	Nonsense Word Fluency	Reading-Curriculum Based Measure	Reading-Curriculum Based Measure	Reading-Curriculum Based Measure	Reading-Curriculum Based Measure
Oral Counting Measure	Letter Sound Fluency	Letter Sound Fluency	Oral Counting Measure	Math-Curriculum Based Measure	Math-Curriculum Based Measure		MAP-Communication Arts
Number Identification Measure	Phoneme Segmentation Fluency	Phoneme Segmentation Fluency	Number Identification Measure		Office Discipline Referrals		MAP-Mathematics
Quantity Discrimination Measure	Nonsense Word Fluency	Nonsense Word Fluency	Quantity Discrimination Measure				Office Discipline Referrals
Missing Number Measure	Oral Counting Measure	Oral Counting Measure	Missing Number Measure				
	Number Identification Measure	Number Identification Measure	Reading-Curriculum Based Measure				
	Quantity Discrimination Measure	Quantity Discrimination Measure	Math-Curriculum Based Measure				
	Missing Number Measure	Missing Number Measure	Office Discipline Referrals				
	Office Discipline Referrals	Math-Curriculum Based Measure					

Appendix D

Kindergarten Community-Based Raw Data

Grade	Gender	Ethnic	IEP	C-LNF-F	C-LNF-S	C-PSF-S	C-OCM-F	C-OCM – S	C-NIM-F	C-NIM-S	C-QDM-F	C-QDM-S	C-MNM-F	C-MNM-S	C-ODR
KF	M	W	N	32	54	37	59	98	35	56	20	28	11	21	0
KA	M	W	N	36	68	29	47	59	34	53	16	26	12	14	0
K	F	B	N	37	76	48	37	70	51	56	27	27	10	12	0
KP	F	W	N	44	83	59	78	100	56	56	28	28	15	21	0
KP	F	W	N	29	44	45	54	96	13	56	20	28	4	17	0
KF	F	H	N	31	58	73	67	71	40	55	15	28	4	14	0
KA	M	W	N	67	72	54	59	56	56	56	25	27	0	7	0
K	F	B	N	23	53	31	39	72	53	54	16	28	7	13	0
KF	F	W	N	24	46	36	45	92	30	54	9	28	6	11	0
KA	M	W	N	45	82	73	71	100	56	56	28	28	15	21	0
KP	M	W	N	40	50	43	23	45	48	56	11	21	8	10	0
KF	F	W	N	17	43	35	69	71	32	56	9	28	11	9	0
KA	F	W	N	10	46	33	17	48	23	53	17	28	8	10	0
KA	M	W	N	28	61	9	18	64	20	56	6	28	0	7	0
KP	F	B	N	4	24	6	34	56	10	40	3	5	2	4	0
KP	M	W	N	9	48	53	22	38	10	56	1	27	1	6	0
KA	M	W	N	12	55	74	71	89	44	56	26	28	3	20	0
KA	M	W	N	36	61	52	34	76	41	56	12	28	17	20	0
KP	M	W	N	12	24	58	19	49	8	28	1	13	1	7	0
KP	F	W	N	12	44	33	37	81	14	41	2	28	1	11	0
KP	F	W	N	33	37	48	71	89	47	49	19	29	11	11	0
KP	F	W	N	36	66	51	56	78	56	56	22	28	16	21	0
KF	M	W	N	45	56	49	88	98	55	56	27	28	16	15	0
K	F	B	N	25	54	46	57	69	52	56	10	24	9	14	0
KF	M	W	N	35	59	42	86	88	42	43	7	27	13	16	0
KF	M	W	N	41	63	36	59	67	56	54	28	28	21	20	6
KF	M	W	N	35	48	52	79	100	55	54	28	27	11	13	0
KF	M	W	N	46	49	35	53	82	50	56	28	28	20	18	0
KP	M	W	N	22	47	19	64	67	45	47	21	28	2	16	0
KP	F	W	N	28	59	42	38	70	35	56	13	28	15	21	0
KF	M	W	N	25	63	17	80	92	55	56	28	27	9	19	0
KF	M	W	N	39	53	43	48	60	56	56	28	28	19	21	0
KA	M	W	N	34	52	49	29	66	20	34	12	9	3	8	0
KA	M	W	N	6	29	39	26	38	13	42	8	21	5	10	0
KA	M	W	N	68	64	49	76	92	55	56	28	28	17	18	0
KA	M	W	N	10	45	53	47	68	35	44	10	25	6	10	0

Grade	Gender	Ethnic	IEP	C-LNF-F	C-LNF-S	C-PSF-S	C-OCM-F	C-OCM – S	C-NIM-F	C-NIM-S	C-QDM-F	C-QDM-S	C-MNM-F	C-MNM-S	C-ODR
KF	M	W	N	21	74	60	28	72	38	56	18	23	11	13	0
KF	F	W	N	26	53	57	48	85	44	56	28	28	15	20	0
KF	M	W	N	25	50	33	56	83	38	49	23	28	11	17	0
KF	F	W	N	41	31	50	58	47	56	46	22	28	11	15	0
KP	M	W	N	40	61	50	88	95	56	56	28	28	19	17	0
KA	M	W	N	30	50	67	57	89	41	56	21	28	10	21	0
KA	F	W	N	67	68	44	78	70	56	55	27	28	20	21	0
KF	F	W	N	20	45	28	57	80	47	56	22	28	10	18	0

Appendix E

Kindergarten District-Affiliated Raw Data

Grade	Gender	Ethnic	IEP	C-LNF-F	C-LNF-S	C-PSF-S	C-OCM-F	C-OCM – S	C-NIM-F	C-NIM-S	C-QDM-F	C-QDM-S	C-MNM-F	C-MNM-S	C-ODR
KF	F	W	N	40	51	26	35	55	36	42	10	23	2	8	0
KF	F	W	N	34	55	50	94	100	44	56	28	28	8	19	0
KP	M	W	N	31	57	49	57	86	35	56	16	28	13	10	0
KA	M	H	N	44	83	52	67	94	56	56	28	28	8	10	0
KP	F	M	N	36	38	46	74	68	56	56	18	28	13	19	0
KA	M	M	N	36	39	56	38	65	41	50	18	28	14	17	0
KP	F	W	N	46	87	73	70	96	56	56	28	28	16	20	0
KA	M	W	N	24	47	6	58	68	38	48	25	28	11	17	0
KA	M	W	N	33	32	38	52	30	47	36	21	26	15	16	0
KF	M	W	N	20	46	37	40	52	44	56	27	28	16	15	1
KA	M	W	N	45	66	46	73	87	56	56	28	28	13	19	0
KA	F	W	N	16	39	50	57	72	41	35	20	27	6	13	0
KF	M	W	N	0	33	39	20	24	0	42	0	27	0	16	0
KF	F	W	N	36	61	34	48	96	44	54	27	28	7	17	0
KF	M	W	N	27	48	45	68	59	42	56	25	28	4	21	0
PK	M	W	N	37	63	48	62	75	46	56	25	28	15	20	0
KF	M	W	N	19	53	48	28	78	28	55	13	28	5	19	0
KA	M	W	N	33	38	33	31	93	48	55	28	27	16	16	0
KA	M	W	N	39	50	43	48	65	43	50	26	28	13	20	0
KF	F	W	N	43	50	44	48	57	37	56	24	28	11	17	0
KF	F	H	N	6	46	54	53	56	14	56	6	27	7	15	0
KF	M	W	N	26	59	38	61	57	40	55	12	28	0	19	0
KP	M	W	N	28	44	49	60	71	42	56	22	28	11	21	0
KF	M	W	N	9	41	33	49	69	13	56	3	19	3	9	0
KF	M	W	N	41	78	35	55	87	32	56	13	28	7	21	0
KF	M	W	N	44	66	49	71	96	55	55	28	27	14	20	0
KA	F	W	N	32	58	58	55	69	39	56	24	28	9	19	0
KF	M	W	N	35	50	36	57	64	40	56	9	28	9	18	0
KF	M	W	N	18	49	31	44	62	33	41	6	15	12	19	2
KP	M	W	N	29	34	28	58	72	48	39	25	28	8	18	0
KP	F	W	N	59	64	61	100	100	56	56	28	28	16	21	0
KF	M	W	N	8	40	47	12	35	23	55	2	18	1	7	0
KF	M	W	N	17	50	41	41	61	24	51	3	28	2	18	2
KP	M	W	N	47	37	38	50	72	56	54	22	28	11	19	0
KF	M	W	N	33	50	34	48	70	52	56	23	28	14	19	0
KP	F	W	N	28	42	42	55	78	52	56	27	27	11	21	0

Grade	Gender	Ethnic	IEP	C-LNF-F	C-LNF-S	C-PSF-S	C-OCM-F	C-OCM – S	C-NIM-F	C-NIM-S	C-QDM-F	C-QDM-S	C-MNM-F	C-MNM-S	C-ODR
KF	F	B	N	31	65	58	44	67	35	56	1	18	1	13	0
KF	F	W	Y	13	27	41	14	65	23	56	4	28	2	14	0
KP	M	W	Y	46	45	41	54	48	37	39	14	24	17	18	0
KF	F	B	Y	15	46	42	47	67	12	41	1	28	1	17	3
KP	F	W	Y	17	31	11	36	43	27	33	6	27	5	16	0
KF	M	W	Y	10	29	28	27	52	8	56	1	25	2	10	0
KF	M	W	Y	31	27	7	64	77	48	56	18	28	12	21	0
KF	F	W	Y	20	38	49	48	63	29	52	26	23	11	8	0
KF	M	W	Y	41	35	45	48	54	17	42	10	23	8	17	0

Appendix F

Kindergarten Home Raw Data

Grade	Gender	Ethnic	IEP	C-LNF-F	C-LNF-S	C-PSF-S	C-OCM-F	C-OCM – S	C-NIM-F	C-NIM-S	C-QDM-F	C-QDM-S	C-MNM-F	C-MNM-S	C-ODR
KA	F	A	N	22	48	36	54	75	23	39	9	23	7	13	0
KA	F	A	N	29	73	57	70	63	51	56	16	28	1	21	0
KA	F	B	N	0	29	0	17	43	0	37	0	24	0	2	4
KF	F	B	N	0	43	51	7	64	1	41	0	24	0	19	0
K	F	B	N	3	62	32	53	58	21	56	9	23	0	9	0
KF	F	H	N	17	46	30	31	63	33	56	11	28	10	15	0
KF	F	W	N	21	73	30	73	100	54	56	22	28	14	21	0
KF	F	W	N	27	45	29	24	46	26	56	9	26	3	12	0
KP	F	W	N	20	60	69	36	100	41	56	11	28	4	12	0
KP	F	W	N	27	47	30	37	69	45	56	16	28	4	11	0
PK	F	W	N	26	42	44	67	72	47	56	19	27	13	21	0
KA	F	W	N	5	39	54	23	80	34	55	12	28	5	16	0
KA	F	W	N	35	56	32	48	73	53	56	24	28	13	11	0
KP	F	W	N	21	48	38	47	71	17	56	8	27	6	14	0
KF	F	W	N	34	74	55	79	90	56	56	28	28	13	19	0
KP	F	W	N	41	37	51	41	71	43	56	17	28	2	10	0
KA	F	W	N	29	47	28	70	48	38	46	17	25	13	18	0
KA	F	W	N	41	65	67	51	84	54	56	26	28	7	21	0
KP	M	B	N	0	15	2	28	64	7	53	0	15	2	14	0
KP	M	M	N	23	40	51	10	45	13	39	4	21	3	9	0
KP	M	M	N	9	38	24	21	47	18	53	12	28	4	10	0
KP	M	W	N	6	50	35	14	79	13	50	3	28	0	14	0
KP	M	W	N	21	50	48	64	74	44	56	16	28	13	21	0
KP	M	W	N	21	47	58	39	72	25	43	22	27	10	13	0
KA	M	W	N	35	45	31	38	84	56	56	26	27	9	21	0
KF	M	W	N	32	58	34	21	76	42	56	21	28	8	16	0
KA	M	W	N	38	44	59	77	78	49	56	25	28	18	15	0
KF	M	W	N	38	57	55	75	56	49	56	22	28	9	12	1
KF	F	B	Y	13	12	5	12	20	13	31	0	7	0	1	0
K	M	B	Y	45	40	8	47	77	24	47	6	27	17	21	3

Appendix G

1st Grade Community-Based Raw Data

Gender	Ethncity	IEP	LNF-F	LSF-F	PSF-F	NWF-F	NWF-S	OCM-F	OCM-S	NIM-F	NIM-S	QDM-F	QDM-S	MNM-F	MNM-S	RCBM-S	ODR
M	W	N	18	6	8	4	32	34	65	9	18	3	17	3	11	13	0
M	W	N	67	40	37	42	75	98	89	56	64	31	40	21	21	57	0
F	W	N	40	29	38	21	41	49	71	21	58	18	29	1	14	28	0
M	W	N	54	43	44	29	41	58	39	15	48	2	26	1	10	49	0
M	W	N	72	39	12	63	105	73	73	80	76	40	40	26	30	117	0
M	W	N	61	51	16	48	84	82	100	59	76	33	40	23	26	113	0
M	W	N	56	27	39	17	41	66	76	45	61	22	32	12	16	29	0
F	W	N	58	33	35	20	134	80	91	54	77	30	39	14	21	124	0
F	W	N	35	49	51	37	52	80	100	32	39	19	26	12	12	72	0
F	W	N	49	46	58	46	68	49	89	49	66	28	34	23	22	71	0
M	W	N	76	41	5	18	71	83	91	65	78	40	40	26	25	107	0
F	W	N	41	20	17	19	34	65	70	29	51	3	30	6	13	30	0
M	W	N	62	24	34	60	81	78	100	48	48	36	37	20	21	104	0
M	W	N	50	45	34	85	131	95	100	51	80	40	40	17	30	146	0
F	W	N	42	20	7	20	29	69	69	29	46	21	19	12	17	44	0
M	W	N	37	28	23	22	41	63	63	33	44	20	30	7	16	23	0
M	W	Y	30	1	13	11	51	63	100	44	55	17	32	12	22	39	0
M	W	N	44	16	15	20	45	66	74	52	52	32	40	16	29	38	0
M	W	N	37	36	51	24	44	79	91	41	53	29	36	11	20	33	0
F	W	N	53	32	45	23	32	76	78	43	59	22	33	11	18	46	0
M	W	N	47	30	48	30	36	95	99	44	64	26	40	8	19	33	0
M	W	N	60	28	48	26	35	74	90	51	70	30	38	13	21	63	0
M	W	N	66	30	57	39	66	87	100	60	69	29	36	15	23	75	0
M	W	N	73	52	45	53	57	58	70	72	80	40	40	30	30	79	0
M	W	N	45	33	47	32	93	85	90	57	65	25	36	14	20	63	0
M	W	N	70	41	55	52	115	100	99	68	80	38	40	13	28	91	0
M	H	N	41	66	42	51	53	60	100	48	47	24	40	14	26	81	0
F	W	Y	39	20	37	16	40	55	62	52	45	6	30	8	13	49	0
M	W	N	30	15	33	6	33	60	53	33	49	24	26	13	7	22	0
M	B	N	41	19	10	17	38	55	88	18	21	23	20	14	10	15	0

Gender	Ethnicity	IEP	LNF-F	LSF-F	PSF-F	NWF-F	NWF-S	OCM-F	OCM-S	NIM-F	NIM-S	QDM-F	QDM-S	MNM-F	MNM-S	RCBM-S	ODR
F	W	N	50	17	34	2	23	100	100	36	59	31	28	15	21	24	0
M	B	N	33	15	13	21	37	61	76	31	49	23	34	10	20	51	2
F	W	N	49	36	26	35	84	74	100	47	77	38	39	17	17	95	0
F	W	N	55	51	48	85	175	81	92	53	55	28	38	23	24	138	0
M	W	N	38	18	20	21	51	77	81	26	62	24	30	10	15	32	0
F	B	N	57	40	46	42	50	99	97	48	53	11	24	12	11	55	0
F	B	N	23	8	34	10	64	59	73	21	33	19	22	9	9	17	1
M	W	N	56	30	11	105	140	79	89	52	63	28	36	18	22	119	0
M	W	N	60	28	14	50	52	80	96	67	75	39	40	30	30	134	0
M	H	N	49	35	28	29	42	71	88	27	70	26	33	7	17	45	0
F	B	N	34	16	41	7	28	71	74	34	55	18	22	8	5	39	0
M	W	N	51	32	21	22	68	67	60	32	61	19	39	11	19	75	0
F	W	N	47	42	46	30	60	67	60	33	73	17	34	4	10	65	0
M	W	N	33	20	28	29	30	62	79	45	38	20	24	10	12	41	0
M	W	N	55	37	39	46	90	66	93	49	58	23	40	18	26	67	0

Appendix H

1st Grade District-Affiliated Raw Data

Gender			K-LNF-F	K-LSF-F	PSF-F	NWF-F	NWF-S	OCM-F	OCM-S	NIM-F	NIM-S	QDM-F	QDM-S	MNM-F	MNM-S	RCBM-S	ODR
F	W	N	36	39	9	31	61	59	86	32	39	8	23	16	18	95	0
F	A	N	61	34	25	64	121	74	88	55	70	35	35	21	22	143	0
F	W	N	44	16	41	18	49	75	100	40	80	29	40	12	25	71	0
M	W	N	63	38	45	129	168	100	92	47	80	33	39	21	30	152	0
M	W	N	23	9	43	17	61	40	65	18	37	7	27	1	9	29	0
M	W	N	75	22	22	152	192	98	100	67	79	39	40	25	30	144	0
M	W	N	57	30	36	66	59	86	69	56	72	31	40	15	23	80	0
F	H	N	49	39	50	18	45	83	100	17	61	5	24	3	7	52	2
M	H	N	58	35	33	141	115	77	90	55	71	32	36	17	21	127	0
M	W	N	56	27	45	90	105	76	99	43	61	20	30	13	18	103	0
M	W	N	31	21	47	25	23	70	100	41	63	18	32	13	18	51	0
F	W	N	43	31	34	39	70	80	100	45	60	22	35	10	11	33	0
M	W	N	44	20	27	33	64	82	86	46	53	23	33	24	13	50	0
F	W	N	69	24	37	66	50	69	84	50	79	25	38	12	14	135	0
M	B	N	64	15	3	48	49	59	82	62	69	18	32	11	22	93	0
F	A	N	70	27	30	39	46	71	76	38	42	21	25	13	14	122	0
F	B	N	29	9	15	15	48	70	77	26	48	16	35	6	15	54	0
F	W	N	49	46	66	47	57	88	100	41	65	18	31	14	21	60	0
M	W	N	42	6	29	18	44	96	100	38	71	27	40	8	22	35	0
M	H	Y	27	1	10	1	12	18	46	7	25	0	15	0	7	5	3
M	B	Y	27	0	0	9	38	45	55	8	21	3	7	8	9	37	0
M	W	N	53	38	63	63	81	100	100	67	78	39	40	24	30	93	0
F	W	N	55	34	47	39	35	49	68	35	59	9	24	10	11	85	0
F	W	N	52	37	56	40	23	69	69	40	50	28	30	11	12	68	0
F	W	N	51	22	21	30	46	79	93	53	51	31	38	22	24	65	0
F	A	N	49	38	41	34	44	69	100	57	80	11	29	14	20	66	0
M	W	N	65	30	58	46	65	73	87	43	67	25	34	8	19	94	0
F	W	N	42	21	24	8	44	75	86	48	67	22	30	11	15	57	0
F	A	N	39	23	49	32	46	91	89	29	46	32	40	11	12	28	0
F	W	N	52	27	39	25	56	80	90	35	57	14	31	7	17	55	0
M	W	N	51	34	30	38	61	67	77	39	58	21	30	11	18	54	0
F	W	N	55	25	39	77	55	78	80	48	69	26	39	17	22	116	0
M	W	N	54	35	54	30	38	69	100	48	55	37	40	21	25	55	0
F	W	N	55	26	42	28	56	79	80	42	63	22	32	10	13	67	0
M	W	Y	67	50	38	40	85	59	85	35	75	26	40	12	19	106	0
M	W	N	60	39	30	61	53	78	91	66	80	20	37	14	19	176	0

Gender			K-LNF-F	K-LSF-F	PSF-F	NWF-F	NWF-S	OCM-F	OCM-S	NIM-F	NIM-S	QDM-F	QDM-S	MNM-F	MNM-S	RCBM-S	ODR
F	W	N	56	36	67	52	63	86	82	55	61	30	38	13	17	99	0
F	H	N	42	16	12	15	60	72	90	21	51	7	32	7	11	25	0
M	W	N	62	22	29	55	71	83	93	74	65	40	40	24	18	79	0
M	W	N	57	18	46	55	106	90	100	49	72	37	40	25	30	175	0
F	W	N	54	20	32	49	76	58	63	41	58	30	39	15	23	114	0
F	W	N	57	41	48	63	121	79	70	48	77	25	40	13	29	109	0
F	B	N	30	16	12	16	40	58	76	21	47	14	30	10	18	88	0
M	W	N	50	14	16	15	45	84	100	65	73	40	40	20	27	33	0
F	W	N	40	25	44	33	46	72	80	26	42	17	24	6	13	29	0

Appendix I

1st Grade Home Raw Data

Gender	Ethncity	IEP	LNF-F	LSF-F	PSF-F	NWF-F	NWF-S	OCM-F	OCM-S	NIM-F	NIM-S	QDM-F	QDM-S	MNM-F	MNM-S	RCBM-S	ODR
F	A	N	27	1	9	0	70	28	95	18	49	4	40	8	21	52	0
M	W	N	67	40	40	74	80	84	94	51	80	20	37	12	12	101	0
M	W	N	70	54	51	78	92	100	100	74	80	38	40	20	29	90	0
F	W	N	56	42	44	33	37	37	88	34	56	3	31	7	17	33	0
F	A	N	94	66	63	114	162	92	100	63	71	30	40	9	17	92	0
F	W	N	35	31	55	31	85	48	79	22	42	5	28	18	17	45	0
F	B	N	54	38	22	49	71	47	70	45	75	30	39	17	30	35	0
M	B	N	46	19	12	15	49	72	75	43	56	24	28	15	23	52	2
M	W	N	44	38	56	21	67	100	100	43	55	29	36	22	25	76	0
F	W	N	45	30	35	21	19	60	81	30	41	16	27	10	15	23	0
F	B	N	58	23	34	23	30	83	97	59	62	30	40	14	19	46	0
M	H	Y	58	39	31	42	25	74	86	56	73	37	39	26	30	83	0
M	W	N	60	37	63	37	69	90	100	73	80	38	38	14	29	97	0
F	M	N	26	8	14	10	54	56	82	14	43	8	30	2	16	18	0
M	B	Y	29	8	3	10	31	43	72	27	43	8	19	6	10	16	20
M	B	N	32	22	20	21	58	50	87	38	44	16	32	8	13	31	0
F	W	N	67	35	33	68	94	74	100	69	80	36	40	24	28	137	0
M	W	N	43	18	12	5	56	69	77	34	48	21	30	13	16	37	0
M	W	N	56	23	41	30	63	61	68	41	50	27	24	16	22	84	0
M	B	N	52	27	16	20	118	73	71	43	48	20	26	8	11	93	0
M	W	N	57	47	41	37	34	89	96	48	61	36	40	14	19	29	0
M	W	N	59	30	10	42	56	70	100	58	73	33	40	11	25	102	0
F	W	N	30	26	59	20	57	96	99	28	51	17	33	9	13	23	0
F	B	N	55	20	14	16	34	74	90	41	46	25	34	10	16	108	0
F	W	N	54	23	26	28	52	70	92	46	54	25	35	17	21	54	0
M	M	N	56	16	39	29	98	92	93	62	64	37	40	17	20	82	0
F	B	N	37	15	22	10	42	36	96	17	51	12	22	3	13	41	0
F	W	N	47	26	32	53	108	78	96	49	61	30	37	12	16	121	0
F	W	N	53	36	34	86	153	75	89	60	79	26	39	21	23	121	0
F	B	N	38	42	24	12	66	59	39	52	70	27	33	12	14	137	4

Appendix J

2nd Grade Community-Based Raw Data

Gender	Ethnic	IEP	C-RCBM-F	C-RCBM-S	C-MCBM-F	C-MCBM-S	C-ODR
F	A	N	100	126	5	22	0
F	A	N	100	149	8	34	0
F	B	N	35	84	9	10	0
F	B	N	54	103	9	22	1
F	B	N	42	93	6	18	2
F	W	N	103	151	9	21	0
F	W	N	40	88	14	21	0
F	W	N	59	128	8	28	0
F	W	N	71	107	9	12	0
F	W	N	158	187	14	19	0
F	W	N	158	217	9	32	0
F	W	N	84	184	6	24	0
F	W	N	113	145	10	23	0
F	W	N	115	163	7	19	0
F	W	N	72	89	12	29	0
F	W	N	72	113	17	24	0
F	W	N	113	169	11	31	0
M	B	N	80	115	9	17	0
M	B	N	9	23	5	11	1
M	B	N	10	12	3	20	0
M	B	Y	52	98	9	23	0
M	B	Y	8	41	9	24	0
M	W	N	80	147	9	27	0
M	W	N	60	109	10	12	0
M	W	N	21	79	13	23	1
M	W	N	67	110	17	17	0
M	W	N	75	131	9	23	0
M	W	N	91	135	31	35	0
M	W	N	131	126	19	49	0
M	W	N	89	151	8	24	0
M	W	N	93	154	7	37	0
M	W	N	147	218	16	38	0
M	W	N	26	59	9	20	0
M	W	N	47	83	7	10	0
M	W	N	67	84	13	17	0
M	W	N	88	122	11	37	0
M	W	N	50	85	10	21	0
M	W	N	93	128	18	29	0

Gender	Ethnic	IEP	C-RCBM-F	C-RCBM-S	C-MCBM-F	C-MCBM-S	C-ODR
M	W	N	104	139	11	26	0
M	W	N	111	121	14	38	0
M	W	N	16	61	6	12	0
M	W	Y	21	64	7	25	0
M	W	Y	58	109	11	18	0
M	W	Y	38	143	17	16	0

Appendix K

2nd Grade District-Affiliated Raw Data

Gender	Ethnic	IEP	K-RCBM-F	K-RCBM-S	K-MCBM-F	K-MCBM-S	K-ODR
F	A	N	30	84	8	15	0
F	A	Y	33	82	2	10	0
F	B	N	59	115	7	21	0
F	B	Y	29	66	6	28	2
F	H	N	73	98	8	15	0
F	H	N	39	116	14	36	0
F	W	N	38	104	5	14	0
F	W	N	113	142	10	26	0
F	W	N	51	136	11	22	0
F	W	N	55	111	5	15	0
F	W	N	117	175	13	24	0
F	W	N	141	172	44	59	0
F	W	N	84	132	11	27	0
F	W	N	155	183	7	39	0
F	W	N	136	163	9	22	0
F	W	N	42	97	8	24	0
F	W	N	68	130	8	22	0
F	W	N	178	181	12	24	0
F	W	N	106	139	8	25	0
F	W	N	159	179	32	80	0
F	W	N	68	94	14	35	0
F	W	N	91	130	6	36	0
F	W	N	53	85	8	18	0
F	W	N	69	112	9	32	0
M	A	Y	41	62	6	20	0
M	B	N	74	83	5	24	0
M	W	N	51	86	9	7	0
M	W	N	49	70	7	16	0
M	W	N	70	151	11	33	0
M	W	N	33	103	9	15	0
M	W	N	31	71	9	15	0
M	W	N	131	143	7	15	0
M	W	N	44	121	11	19	0
M	W	N	33	79	16	39	0
M	W	N	18	77	9	18	0
M	W	N	11	82	17	25	1
M	W	N	65	112	9	13	0
M	W	N	51	71	16	27	0

Gender	Ethnic	IEP	K-RCBM-F	K-RCBM-S	K-MCBM-F	K-MCBM-S	K-ODR
M	W	N	81	118	9	15	0
M	W	N	64	102	14	24	0
M	W	N	100	122	23	51	0
M	W	N	34	94	3	28	0
M	W	Y	104	143	16	24	0
M	W	Y	112	117	5	8	13

Appendix L

2nd Grade Home Raw Data

Gender	Ethnic	IEP	K-RCBM-F	K-RCBM-S	K-MCBM-F	K-MCBM-S	K-ODR
F	B	N	2	13	2	10	0
F	B	N	11	41	11	32	1
F	W	N	87	133	8	27	0
F	W	N	69	135	9	18	0
F	W	N	141	178	24	45	0
F	W	N	94	126	16	24	0
F	W	N	52	148	8	23	0
F	W	N	86	135	10	12	0
F	W	N	46	90	9	25	0
F	W	N	68	131	11	21	0
F	W	N	67	132	8	41	0
F	W	N	127	150	12	25	1
F	W	N	50	102	3	24	0
F	W	N	72	114	9	13	0
F	W	Y	3	33	3	4	0
M	A	N	59	103	8	25	1
M	B	N	89	135	17	43	2
M	B	N	92	118	13	52	0
M	B	N	51	92	25	45	0
M	B	N	67	117	8	23	1
M	B	Y	8	37	4	16	0
M	W	N	63	114	10	24	0
M	W	N	107	159	47	61	0
M	W	N	57	154	14	19	0
M	W	N	31	85	16	29	0
M	W	N	103	153	7	23	0
M	W	Y	82	145	13	16	0
M	W	N	68	112	8	17	0

Appendix M

3rd Grade Community-Based Raw Data

Gender	Ethnic	IEP	C-RCBM-F	C-RCBM-S	C-MAP-CA	C-MAP-MA	C-ODR
M	W	N	54	120	646	604	0
M	W	N	105	117	698	658	0
F	W	N	50	80	643	639	0
M	W	N	101	159	643	703	0
F	W	Y	107	134	616	591	0
F	W	N	147	169	694	667	0
F	W	N	79	145	659	625	0
M	A	N	125	171	682	696	0
M	W	N	79	118	655	657	0
F	W	N	87	133	672	616	0
F	W	N	154	176	667	644	0
F	W	N	120	130	680	672	0
M	B	N	86	90	642	618	2
M	W	N	124	189	699	674	0
F	W	N	168	184	710	656	0
M	W	N	179	185	695	717	0
M	B	N	136	144	647	651	2
M	W	N	148	180	703	688	0
M	W	Y	63	111	648	605	0
M	W	N	122	150	661	731	0
M	B	N	36	86	578	570	0
M	W	N	81	105	632	640	1
F	W	N	141	177	689	710	0
M	W	N	94	111	657	647	0
M	W	N	153	188	680	780	0
M	W	N	177	181	675	674	0
M	W	N	125	166	689	702	0
F	B	N	102	168	643	628	0
F	W	N	160	215	720	771	0
F	W	N	91	134	682	717	0
M	B	N	85	107	660	637	0
F	W	N	112	161	675	649	0
F	W	N	110	146	703	670	0
F	B	N	80	121	661	654	0
F	W	N	171	191	741	691	0
M	M	N	131	144	659	630	0
F	W	N	80	143	683	651	0
M	W	N	186	251	731	690	0

Gender	Ethnic	IEP	C-RCBM-F	C-RCBM-S	C-MAP-CA	C-MAP-MA	C-ODR
F	W	N	86	140	661	626	0
M	W	N	166	195	680	709	0
M	W	Y	75	94	611	609	0
M	W	N	74	152	642	616	0
F	W	N	157	164	689	669	0
M	W	N	127	152	682	671	0
F	W	N	109	127	671	659	0

Appendix N

3rd Grade District-Affiliated Raw Data

Gender	Ethnic	IEP	C-RCBM-F	C-RCBM-S	C-MAP-CA	C-MAP-MA	C-ODR
M	W	N	104	160	685	675	0
M	W	N	92	121	661	622	0
M	W	N	109	137	662	771	0
M	W	N	55	108	638	643	0
M	W	N	107	139	685	667	0
M	W	N	142	153	699	717	0
F	W	N	155	165	696	690	0
M	B	N	104	110	660	656	0
F	W	N	128	159	663	652	0
F	W	N	132	182	724	650	0
M	W	N	105	148	658	655	0
M	W	Y	100	141	638	621	0
F	W	N	145	182	697	686	0
F	W	N	199	211	774	646	0
M	W	N	99	140	699	665	0
F	W	N	79	118	666	639	0
M	W	Y	86	107	648	661	0
M	W	N	154	218	710	722	0
F	W	Y	136	136	700	645	0
M	W	N	187	203	658	627	0
M	W	Y	110	119	652	586	0
F	W	N	102	137	639	647	0
F	W	N	104	140	682	669	0
F	W	N	120	167	697	656	0
F	W	Y	64	114	639	612	0
M	W	N	38	59	657	628	0
M	W	N	152	172	668	629	0
F	W	N	104	171	655	627	0
F	W	N	119	153	667	687	0
M	W	Y	57	89	619	600	0
F	W	N	134	167	669	683	0
M	W	N	110	131	658	666	0
M	B	N	147	195	702	687	1
M	B	Y	160	128	643	634	0
M	W	N	144	140	680	780	0
M	W	N	152	157	632	634	0
F	W	Y	46	78	619	617	0
F	W	Y	115	125	638	601	0

Gender	Ethnic	IEP	C-RCBM-F	C-RCBM-S	C-MAP-CA	C-MAP-MA	C-ODR
F	W	N	103	133	668	687	0
M	W	N	72	147	643	648	0
F	W	N	75	95	610	595	0
M	B	N	64	121	609	629	1
F	H	N	102	137	652	630	0
M	W	Y	74	107	662	642	0
M	W	N	86	140	673	709	2

Appendix O

3rd Grade Home Raw Data

Gender	Ethnic	IEP	C-RCBM-F	C-RCBM-S	C-MAP-CA	C-MAP-MA	C-ODR
F	A	N	59	79	624	592	0
F	B	N	34	96	613	546	0
F	B	N	79	105	624	596	0
F	B	N	65	99	632	624	1
F	B	N	102	116	632	611	0
F	B	N	111	125	655	631	0
M	B	N	87	140	623	625	0
M	B	N	66	101	609	603	2
M	B	N	62	93	568	598	1
F	W	N	60	107	656	639	0
F	W	N	131	155	668	633	0
F	W	N	77	132	669	642	0
F	W	N	48	93	605	579	2
F	W	N	104	136	667	696	0
F	W	N	103	173	666	669	0
F	W	Y	101	133	693	667	0
M	W	N	157	186	695	648	0
M	W	N	107	145	701	671	0
M	W	N	55	129	652	650	0
M	W	N	104	152	687	656	0
M	W	N	127	152	656	678	1
M	W	N	115	157	654	654	0
M	W	N	141	175	680	661	1
M	W	Y	43	73	644	673	0
M	W	Y	97	61	670	683	0
M	W	Y	64	82	616	613	0

Appendix P

Approval Forms

09-72
IRB Project Number

LINDENWOOD UNIVERSITY
Institutional Review Board Disposition Report

To: Mandy Rose
CC: Dr. Nack

Congratulations! Your submission has addressed the requests made by the IRB. Good luck with your data collection.

Colleen Biri, Psy.D.	3/27/2009
Institutional Review Board Chair	Date

KIRKWOOD
SCHOOL DISTRICT

David Damerall
Superintendent of Schools

March 3, 2009

Lindenwood University
IRB Board
209 S. Kingshighway
St. Charles, MO 63301

Dear Lindenwood Faculty/IRB Board:

Mandy Rose is an assistant principal at the Kirkwood Early Childhood Center in the Kirkwood School District. She has permission to access Kirkwood District data for research to complete her studies.

Thank you for providing this opportunity for one of our administrators to further her educational experience. Please let me know if there is other information you need.

Sincerely,

David Damerall

Administrative Services Center 11289 Manchester Rd | Kirkwood MO 63122 | 314.213.6100 ext.7001 Fax 314.984.8007 | www.kirkwoodschools.org

Vitae

Amanda L. Rose currently serves as an assistant principal at the Kirkwood Early Childhood Center in the Kirkwood School District in St. Louis, Missouri. Her teaching experiences have included grades k–12 in physical education. Her administrative experiences are inclusive of both the early childhood and elementary levels. Specific areas of interest are data analysis at all levels to inform instruction and addressing the needs of individual students through a Response to Intervention approach.

Educational studies have resulted in a Master's Degree in Computer Science from Fontbonne University and a Bachelor of Science in Education Degree from University of Missouri–St. Louis.