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## Examination of Quality Indicators in Public and Private Pre-Kindergarten Classrooms in Indiana

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EXAMINATION OF QUALITY INDICATORS IN PUBLIC AND PRIVATE  
PRE-KINDERGARTEN CLASSROOMS IN INDIANA

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Doctor of Philosophy

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by

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## ABSTRACT

The purpose of this study was to examine the current state of pre-kindergarten classrooms in the state of Indiana through the perspectives of public and private pre-kindergarten program directors. Survey results revealed a high concentration of female pre-kindergarten directors within the state of Indiana. Although directors rated their teaching staffs with a high level of early education background, they themselves felt less confident about their backgrounds in this field. Descriptive data also revealed that private student–teacher ratios are smaller, their instructional days are longer, their programs have been established for longer periods of time, and their directors have had longer tenures than their public counterparts. Statistical testing found that directors of public urban schools reported a higher quality rating than suburban and rural pre-kindergarten programs, based on the quality composite score. It was determined that student–teacher ratio and school type (*public, private*) both served as significant predictors of the quality composite score. It was revealed that as student–teacher ratio increases, the perceived pre-kindergarten quality decreases. Results also showed that pre-kindergarten directors’ perceived quality is less within the private setting than in the public setting, based on the composite quality score. The overarching purpose of this study was to provide an awareness of the potential benefits that *quality* pre-kindergarten programming could yield for the future citizens of Indiana as a whole and if perceived quality exists to some degree.

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## CHAPTER 1

### INTRODUCTION

“The United States can’t *race to the top* when many children are not even at the starting line” (Doggett & Wat, 2010, p. 8). This quotation defines the common belief of many early childhood advocates from across the nation who believe the solution for closing the achievement gap lies in the investment of quality pre-kindergarten programs for all 4-year-old children. This concept, known as *universal pre-kindergarten*, has gained vast support in the past decade, as programs that target only children living in poverty—such as Head Start—have failed to produce large-scale results (Hardy, 2012). The current state of early childhood education within the United States can be described as a patchwork of solutions, set forth to fill a gap left by decades of meager federal, political, and social support, both philosophically and financially. Education of our youngest citizens from birth to age five has been left into the hands of our local communities and, in the case of ministry-based centers, have been free of regulations and quality assurances (Doggett & Wat, 2010).

Entering into the 21st century, educational reform has become a social and political hot topic. In 2001, when the national legislation No Child Left Behind was signed into law, there were promises of many things. More accountability through standardized testing, state curricular standards, and highly qualified teachers were the cornerstones of the legislation (U.S. Department of Education [USDOE], 2001). Although this was a bold step, many feel that the federal education policy fell short by not providing widespread, quality, early childhood

programs that would perpetuate these ideas. Early childhood provisions were included in the law but were targeted at economically disadvantaged students who qualified for programs such as Head Start.

Eight years later, in 2009, the Program for International Student Assessment compared the academic achievement of 65 countries (Frede & Barnett, 2011). According to the final report, “the U.S. was well down in the middle of the pack for reading, math, and science while Shanghai, a Chinese city with a population equal to that of New York, was at the top of the leader board” (Frede & Barnett, 2011, p. 9). Educational experts began dissecting and speculating which success factors had contributed to the top ranking countries’ accomplishments as compared to the United States. One of the common threads that began to emerge was the inclusion of early childhood programs offered to many, if not all, of its citizens. Once again, policy makers began to question if the United States should emulate programs such as “Finland’s universal access to high-quality early care, education starting in infancy, and requirement that every public school teacher earn a master’s degree” or “Shanghai’s universal pre-kindergarten, in which all teachers must have at least a bachelor’s degree, or China’s 251-day school year” (Frede & Barnett, 2011, p. 9).

Educators and policy makers have not only examined the academic achievements of other countries who may be outperforming the United States but they are also taking note of the increasing amount of research and longitudinal studies on the economic impact of quality early childhood programming. Urahn (2009) claimed that there is a significant fiscal return in pre-k investments. Author and managing director of the Pew Center in Washington, DC, Susan K. Urahn claimed that pre-kindergarten programming returns up to seven dollars for every dollar invested. A portion of these figures may have been formulated from the three most cited pre-

kindergarten longitudinal studies where researchers have followed children into adulthood in order to measure lifelong cost-to-benefit ratios. These studies involve the 1962 High/Scope Perry Pre-Kindergarten Study in Ypsilanti, Michigan, the 1972 Carolina Abecedarian Pre-Kindergarten Study in Chapel Hill, North Carolina, and the 1983 Chicago Child-Parent Centers Study in Chicago, Illinois (Barnett & Yarosz, 2007). After compiling data from various studies, the American Educational Research Association reported that for every one dollar spent, states could realize a return of “anywhere from three dollars to more than \$17.00 because of reduced special education costs, less grade repetition, higher adult earnings, more tax revenues, reduced crime rates (which produce the greatest savings), and other benefits” (Brooks-Gunn, 2005, p. 2). Those programs gaining the highest return on investment were reported as sometimes small, targeted programs that included quality indicators such as “language-rich, developmentally appropriate education; highly trained teachers; and low child-staff ratios” (Brooks-Gunn, 2005, p. 2). In 2004, the USDOE released a statement endorsing both the academic and cost benefits in an attempt to encourage states to take part in a joint investment.

A robust body of research demonstrates that high-quality early learning programs and services can improve health, social-emotional, and cognitive outcomes, can improve school readiness across a range of domains, can close and even prevent achievement gaps, and are among the most cost-effective investments along the educational pipeline. (USDOE, 2011, p. 1)

Although the idea of quality early childhood is supported and encouraged by the federal government, state and local preschool and pre-kindergarten programs vary greatly throughout the United States. Some states have chosen to include pre-kindergarten programs within their public school funding structures and have applied the same quality measures such as highly qualified



teachers and age-appropriate academic, cognitive, and social standards that are endorsed by national researchers. Some states rely solely on federally funded programming such as the Individuals with Disabilities Education Act, Part B program which includes “pre-kindergarten-age children who are experiencing developmental delays, as defined by the state and measured by appropriate diagnostic instruments and procedures, who need special education and related services” (USDOE, n.d., para. 1). Other federally funded early learning programs include Head Start, which targets economically disadvantaged 4-year-olds; Early Head Start, which includes birth to age 3; and Title I pre-kindergartens, which in school year 2001-02 served approximately 300,000 children and accounted for 2% of Title I dollars flowing to public schools (USDOE, 2004). According to Doggett and Wat (2010),

Head Start, the primary federal investment in early education, is offered to only the poorest children, serves only about half of eligible children, and has weak connections to our nation’s larger school-reform strategy. Some feel that although there are considerable amounts of financial resources that are dedicated toward early learning service in the United States, we have fallen short in coordinating these efforts and have failed to ensure quality. (p. 9)

Frede and Barnett (2010) agreed that

as a nation, we spend a considerable amount of money subsidizing what is often custodial child care that produces few, if any, benefits for child development. Head Start is better than typical child care, but it has not been nearly good enough to produce large long-term gains in either cognitive or social development. (p. 10)

In their 2010 State Pre-Kindergarten Yearbook, Barnett et al. reported that 40 of the 50 states supported some form of state-funded pre-kindergarten program. In 2011, this number

dropped to 39 of the 50 states, as Arizona dropped its state-funded pre-k program due to funding lags (Barnett, Carolan, Fitzgerald, & Squires, 2011). The programs these researchers began tracking in 2002 include the following criteria:

- The initiative is funded, controlled, and directed by the state.
- The initiative serves children of pre-kindergarten age, usually three- and/or four-year-olds.
- Early childhood education is the primary focus of the initiative.
- The initiative offers a group learning experience to children at least two days per week.
- State-funded pre-kindergarten education initiatives must be distinct from the state's system for subsidized childcare. However, pre-kindergarten initiatives may be *coordinated* and *integrated* with the subsidy system for childcare.
- The initiative is *not* primarily designed to serve children with disabilities, but services may be offered to children with disabilities.
- State supplements to the federal Head Start program are considered to constitute *de facto* state pre-kindergarten programs if they substantially expand the number of children served, and if the state assumes some administrative responsibility for the program.
- State supplements to fund quality improvements, extended days, or other program enhancements or to fund expanded enrollment only minimally are not considered equivalent to a state pre-kindergarten program. (Barnett et al., 2010, p. 19)

In 2011, pre-kindergarten attendance within the United States was measured at 28% of the eligible 4-year-old population (Barnett et al., 2011, p. 4).

In the state of Indiana, there are many categories of potential pre-kindergarten providers. Currently, child-care providers for children from birth to age 5 are regulated by the Family and Social Services Administration, which establishes criteria for becoming a licensed facility. The three categories of facilities tracked by this administration are licensed child-care centers, licensed child care homes, and unlicensed registered child-care ministry. These facilities may or may not include formal pre-kindergarten programming. A *licensed child-care center* is defined as a

nonresidential building where at least one child receives child care from a provider: (1) while unattended by a parent, legal guardian, or custodian; (2) for regular compensation; and (3) for more than four (4) hours but less than twenty-four (24) hours in each of ten (10) consecutive days per year, excluding intervening Saturdays, Sundays, and holidays. (Indiana Department of Family and Social Services Administration [FSSA], 2012, para. 1)

A *licensed child-care home* is defined as a

residential structure in which at least six (6) children (not including the children for whom the provider is a parent, stepparent, guardian, custodian, or other relative or any child who is at least fourteen (14) years of age and does not require child care) at any time receive child care from a provider: (1) while unattended by a parent, legal guardian, or custodian; (2) for regular compensation; and (3) for more than four (4) hours but less than twenty-four (24) hours in each of ten (10) consecutive days per year, excluding intervening Saturdays, Sundays, and holidays. (FSSA, 2012, para. 2)

An *unlicensed registered child-care ministry* or “child-care ministry” is defined as a “child care operated by a church or religious ministry that is a religious organization exempt from federal

income taxation under Section 501 of the Internal Revenue Code” (FSSA, 2012, para. 3).

In addition to the above-mentioned facilities, pre-kindergarten may also reside in public schools, private schools, and within federally-funded Head Start programs. In 2007 Conn-Powers and Cross published survey results that reflected enrollment of 3- to 5-year-olds in various pre-kindergarten programs. These programs and enrollments are shown in Table 1.

Table 1

Enrollment of 3- to 5-Year-Olds in Indiana Early Childhood Programs 2005

Demographic	Enrollment
Census Bureau estimate of all Indiana center-based enrollment	100,694
Public school pre-kindergarten	10,097
Special education (those not in kindergarten)	13,145
Parochial/private school pre-kindergarten	11,115
Head Start (funded enrollment)	13,190
Licensed childcare centers	20,578
Registered ministries	14,607

*Note.* Adapted from Conn-Powers and Cross (2007, p. 4)

Table 1 indicates that the vast majority of pre-kindergarten-aged children in the state of Indiana are being served in licensed child-care centers, followed by federal programs to target special education and at-risk children. However, due to the absence of data and lack of regulations placed on faith-based organizations, an accurate picture may not be displayed (Conn-Powers & Cross, 2007).

### **Statement of the Problem**

Although many states and nations are realizing the benefits of high quality pre-kindergarten education, Indiana remains one of 11 states that have failed to provide state-funded access to this vital programming. Mounting research indicates the immense benefits of providing intentional educational experiences to 4-year-olds, yet the state of Indiana continues to not recognize the need for increased access. With an increasingly competitive global society, it is imperative that all states provide the same high quality access to early childhood education so that all U.S. citizens may realize cited benefits.

### **Purpose of this Study**

The purpose of this study was to examine the current state of pre-kindergarten classrooms in the state of Indiana through the perspectives of public and private pre-kindergarten program directors. This study explored six quality standards or indicators, as defined by national organizations. These quality indicators included teacher qualifications, length of day, inclusion of curricular standards, access to professional development, class size, and teacher-to-student ratios. The directors were asked their perceptions as to how they view the quality of their pre-k program, based on these indicators.

### **Research Questions**

In seeking information that may reveal the current state of private and publicly funded pre-kindergarten in Indiana, this study addressed the following questions:

1. What is the reported quality of Indiana pre-kindergartens, based on the perceptions of program directors?
2. Is there a significant interaction between school type and school location on the pre-kindergarten quality composite score?

3. Is there a significant difference between school types on the pre-kindergarten quality composite score?
4. Is there a significant difference between school locations on the pre-kindergarten quality composite score?

### **Null Hypotheses**

In relation to the three research questions asked, the following null hypotheses were developed:

**H<sub>0</sub>1.** There is no significant interaction between school type and school location on pre-kindergarten quality composite score.

**H<sub>0</sub>2.** There is no significant difference between school types on pre-kindergarten quality composite score.

**H<sub>0</sub>3.** There is no significant difference between school locations on pre-kindergarten quality composite score.

### **Definition of Terms**

The following definitions are given to contribute to better understanding for the reader.

*Early Head Start* is

a child development program for low-income families. Each Early Head Start program is responsible for determining its' own eligibility criteria. Family income is one key factor in determining eligibility. The federal poverty guidelines are used to evaluate family income. Early Head Start programs may elect to target their services to a particular population to best meet the unique needs of families and children in their community.

(Early Head Start National Resource Center, n.d.)

*Head Start* is a U.S. educational program for disadvantaged pre-kindergarten children, established under the Economic Opportunity Act of 1964. Aimed initially only at poor children, its purpose was to organize programs that would prepare pre-kindergarten children for elementary school. It was later extended to children above the poverty level whose parents, however, had to pay according to their income (Columbia Electronic Encyclopedia, 2011).

*P-16 initiative*, for the purpose of this study, is used to describe the goal of creating a seamless educational system of public education. It refers to the spectrum of pre-kindergarten through the completion of college.

*Pre-kindergarten program* is “an educational program for pre-kindergarten-age children, typically three- and four-year-old children, with the explicit goal of improving school readiness” (Conn-Powers, Cross, & Zapf, 2006, p. 1).

*Private pre-kindergarten programs*, for the purpose of the study, are any pre-kindergarten program that is not supported by public funding and includes 4-year-olds and 5-year-olds, prior to their kindergarten year. Subcategories of private pre-kindergarten include parochial, ministry-based, licensed, and unlicensed childcare centers that include pre-kindergarten. The number of private pre-kindergartens within Indiana is unknown due to the lack of a common database for all sub-categories. This study included pre-kindergarten programs that are included in private pre-k through 5 or pre-k through 6 elementary buildings and as well as licensed childcare centers that include pre-kindergarten programs for the purpose of improving school readiness.

*Public pre-kindergarten programs*, for the purpose of this study, are any pre-kindergarten program that is supported with public funding and is not funded for the primary purpose of providing special education services. Public pre-kindergartens included 4-year-olds and 5-year

olds, prior to their kindergarten year. This study included public pre-kindergarten in public pre-k through 5 or pre-k through 6 elementary buildings, as well as Head Starts whose primary purpose is improving school readiness.

*Targeted pre-kindergarten*, for the purpose of this study, are programs reserved for children who are at the greatest risk for poor academic achievement and are typically based on economic disadvantage, disabilities, or other special needs.

*Title I pre-kindergarten*, for the purpose of this study, is considered a targeted pre-kindergarten program funded by the federal government under the No Child Left Behind Act of 2001. Like school-aged children who receive Title I services, Title I pre-kindergarten children must be identified as at most risk of failing academically.

*Universal pre-kindergarten*, for the purpose of this study, is programming offered to all 3- and/or 4-year-old children, regardless of risk factors or socio-economic status.

### **Limitations**

Generalizations from this study are limited to the degree that

1. The population of this study were representative of private and public pre-kindergartens within Indiana. The limited geographical area should be considered when making generalizations as they apply to other populations.
2. This study included a self-reporting survey. This form of data collection assumes that respondents will answer honestly and not be influenced by how they wish to be perceived.

### **Delimitations**

The time frame for data collection was during January 2013. The survey was directed to public and private pre-kindergarten program directors. Not all private schools were represented



during the selection process, due to the lack of a common state-wide database that encompasses all subcategories.

### **Summary**

This study is divided into five chapters. Chapter 1 presents an introduction to the study, a statement of the problem, purpose of the study, research questions, definition of terms, limitations, delimitations, and a summary. Chapter 2 presents a review of the related literature regarding public and private pre-kindergartens and quality indicators. Chapter 3 presents the methodology and procedures employed with the study. Chapter 4 presents the summary and analysis of the data. Chapter 5 presents a review of the findings, conclusions, and recommendations for implementation of the findings.

## CHAPTER 2

### REVIEW OF LITERATURE

As the nation continues to examine the benefits and potential pitfalls of universal pre-kindergarten, it is important to look to the past and examine how education has evolved for young children under the age of 5, not only within the United States, but within its European origins. History reveals many religious, political, and philosophical leaders who have shaped educators' views on how young children should be taught. When considering the past, it is also important to consider the research efforts that have taken place within the last 150 years and how these studies have influenced—or failed to influence—current practice.

As one looks into the future of education for young children, researchers are looking at programs that have yielded results in the eyes of current day educators and the components that play a role in these successful programs. Experts have explored quality indicators that address areas such as class size, teacher qualifications, inclusion of curricular standards, and access to professional development. Last, educators and researchers feel that it is imperative to study the aspects of leadership within the confines of early childhood. How do leaders play a role in the advocacy for a more intricate and multifaceted system that will educate young students? What do current educational leadership programs include that enable principals and directors to understand the complexities and differences that are present in working with young students?

This review of literature will be presented in three sections. The first section will explore the history of early childhood education within the United States and beyond. The second section will report what current research and literature reveals about pre-kindergarten programming within current day United States. This examination of both private and public pre-kindergartens will include societal and political influences and will explore the debate between universal and targeted pre-kindergarten. Viewpoints from both advocates and adversaries will be considered. Quality standards that have been developed to help define excellence within the early childhood setting will be explored within this section as well. Last, a review of literature regarding leadership within the pre-kindergarten settings will be examined.

### **History of Pre-Kindergarten Education**

#### **European Origins**

The origins of early childhood education within the United States can be tracked back mainly to 17th and 18th century Europe. Although many ancient philosophers influenced scholarship, historians would argue that it was during the 17th century that early childhood was designated as a unique stage in human development and should be treated differently (Beatty, 1995). Prominent influencers of the late 17th and early 18th centuries were Protestant minister Johann Amos Comenius and philosophers John Locke and Jean-Jacques Rousseau, who promoted a natural, child-centered approach to educating children (Beatty, 1995; Nutbrown, Clough, & Selbie, 2008).

Comenius, a Moravian schoolmaster, clergyman, and author of what was thought to be the first illustrated children's textbook, is known today as one of history's first educational reformers. His beliefs revolved around learning environments that were natural and enjoyable and opposed rote learning (Beatty, 1995). Although contrary to society, Comenius believed that

all children, regardless of social status, should receive the same education and should live harmoniously together (Beatty, 1995; Nutbrown et al., 2008). Comenius also believed this child-centered, natural approach should occur in the home for children under the age of 6. Published in 1650, his book *The School of Infancy* detailed how children should be educated by their mothers in the home (Beatty, 1995; Krogh & Slentz, 2011). Comenius was one of the first documented authors to coin the concept of developmental appropriateness. “He believed that younger children are best able to grasp knowledge that relates to their own lives and learning must be concrete before it can be abstract” (Krogh & Slentz, 2011, p. 7).

John Locke’s beliefs on education mirrored the natural approach of informal schooling supported by Comenius. His influential text entitled *Some Thoughts Concerning Education* was published in 1693 but did not find its way into American culture until 1830. Once again, themes of undisciplined learning gained popularity as this philosopher advised mainly British aristocrats on child-rearing techniques. Locke felt that formalized schools were “incubators for roughness and ill-breeding” (Beatty, 1995, p. 5) and that children should be protected from societal norms. Locke believed in early literacy and advised parents to “trick [children] into early academics” (Beatty, 2010, p. 6) with the use of letter dice and educational games. Although Locke did not promote any sort of universal education system, he felt that children are born with great potential and that their minds can be “an empty cabinet or blank tablet” (Krogh & Slentz, 2011, p. 7) ready to be filled with knowledge.

Although more controversial than the two previous fathers of early childhood education, Jean-Jacques Rousseau provided foundations that have had long lasting effects on our ideals of educating young children. Unlike Locke, Rousseau felt that children, young boys in particular, should be taught outside in nature (Beatty, 1995). Rousseau was a supporter of what is known

today as meeting the need of the *whole child*. “The teacher or tutor should not use direct instruction, but should act as a guide, being aware of the child’s interests and letting him follow those interests rather than prescribing a curriculum” (Krogh & Slentz, 2011, p. 10). Although their ideas may have seemed radical to most, these educational forefathers encouraged parents to break customs and consider a more natural, non-institutionalized approach to educating young children.

### **American Origins**

Public and private infant schools began in the early 19th century within the United States. Social class heavily influenced early education pedagogy during this era. Public infant schools were reserved for poor families who were encouraged to send their children to institutions so that they might be “socialized and educated communally and saved from the supposedly harmful influence of their families” (Beatty, 1995, p. 21). Infant school societies began to appear and were primarily influenced by the Swiss philosopher Johann Pestalozzi (Beatty, 1995). Influenced by the writings of Rousseau, Pestalozzi promoted a naturalistic approach to learning that emphasized the freedom to learn by doing. He opposed the traditional methods of education once children entered school past age six. As described in his best-known book, *How Gertrude Teaches Her Children*,

Suddenly, after five years of blissful sensuous life, we banish all Nature from their eyes . . . we herd them together like sheep in an evil-smelling room, for hours, days, weeks, months, and years we chain them unmercifully to the contemplation of miserable and monotonously unexciting alphabets, and condemn them to an existence which, in comparison with their former life, is repulsive in the extreme. (Petalozzi as cited in Krogh & Slentz, 2011, p. 12)

Pestalozzi's democratic views on education aligned closely with the United States' views of all men being treated equal. Unlike some of his predecessors, he believed that "all children, rich and poor, boys and girls, should have the right to learn" (Krogh & Slentz, 2011, p. 13).

Robert Owen, founder of a utopian society in Scotland and New Harmony, Indiana, provided nursery schools for working mothers that were opened for 12-15 hours per day. The focus of his schools began to include the emotional needs of students (Nutbrown et al., 2008). Through the late 19th century, day nurseries continued to spread but were often associated with charity efforts and were only accessed by poor families in large cities close to factories. This stigma would remain in America until well into the 20th century (Rose, 2010).

During the World War II era, childcare outside of the home became more widespread than during any other time in American history. In conjunction with the war efforts and the need for women in the workforce, the government began to provide childcare for working mothers. Even then, mothers were reluctant to send their children to facilities that were designated for "charity cases" (Rose, 2010, p. 44). It was not until well after the war that women began to advocate for childcare centers, as families of all social classes began to view them as beneficial for their children (Rose, 2010).

### **American Pre-Kindergartens: 1960-Present**

In many industrialized countries including Western Europe, Japan, Singapore, South Korea, Hong Kong, Taiwan, Russia, and most of Latin America, pre-kindergarten is embedded into the public education system and begins at 3- or 4-years of age (Rose, 2010). One might wonder why, in a country that prides itself in providing education to all its citizens, public education prior to age 5 is not fully funded. An explanation can be found during Richard

Nixon's administration where civil rights, labor, and women's groups all supported legislation that would have provided a public child care system for American families. Although passed by legislators of the time, President Nixon's veto "helped give rise to a patchwork quilt approach to child care" (Rose, 2010, p. 9) that we know today. During this turning point in 1971, policymakers favored a *less government* approach to issues such as these and also helped to avoid support of the controversial question of women entering the workplace (Rose, 2010).

What Americans did support during the mid-1960s was the *war on poverty*. During 1965, a paramount moment for early education began with the creation of Head Start. The federal Head Start program, found in all 50 states, was designated for under-privileged 3- to 5-year old children who lacked proper nutrition, health care, and education. Head Start began as a summer-only program but later grew into a year-round option (Krogh & Slentz, 2011; Rose, 2010). Spearheaded by Sargent Shriver, director of the newly created Office of Economic Opportunity, this promising program was created practically overnight in a political effort to gain support and fight the war on poverty. A chartered committee of physicians and psychologists recommended a small-scale pilot for 2,500 children, with political enthusiasm shared by Shriver and President Lyndon Johnson, which expanded the efforts to 300,000 children. Within a 12-week period, Head Start was off and running. The administrative efforts were not focused on the quality of proposed programs but more on the quantity. Reviewers that were documented to be substitute teachers from the Washington, DC, school system, "rubber stamped" applications in a rapid attempt to get the program off the ground (Rose, 2010).

### **Current State of Pre-Kindergarten Education in the United States**

On April 10, 2012, the National Institute for Early Education Research released data from *The State of Pre-Kindergarten 2011: State Pre-Kindergarten Yearbook* at a press conference at

Bancroft Elementary School in Washington, DC. The report showed that for the second year in a row, overall state pre-kindergarten funding dropped within the United States. Over the past decade, the report showed a funding drop of approximately \$700 per student. Dr. Steven Barnett, longtime Director of NIEER, commented that state pre-k enrollment increased slightly but “varied greatly from state to state with two states, Florida and Oklahoma, serving more than 70% of their four-year-olds while 11 states continue to offer no state-funded pre-kindergarten at all.” According to NIEER (2012), most notable of all disparities was the variance in quality “with five states meeting all 10 of NIEER’s quality standards benchmarks at the same time that three states met only three or fewer.” The NIEER also stated that this should be a wake-up call that our nation is headed in the wrong direction. Also speaking at the event was the current U.S. Secretary of Education, Arne Duncan, who called for a *crib to career* approach where all U.S. pre-kindergarten students have access to high quality programming. Secretary Duncan promoted his federal initiative, Race to the Top: Early Learning Challenge, which he hoped would add fuel to the movement. These dollars were awarded to nine states that produced comprehensive plans to expand pre-kindergarten efforts, which will include components such as quality standards and accountability measures (NIEER, 2012).

When looking deeper into the NIEER report, many signs of growth can be found. Over the past decade, state pre-kindergarten attendance has nearly doubled. In 2011, the United States served 1.3 million, or 28%, of 4-year-old children. Table 2 presents data on how many children are currently being served and the programming that is provided. Figure 1 illustrates the percentages of enrolled pre-kindergarten students by age group.

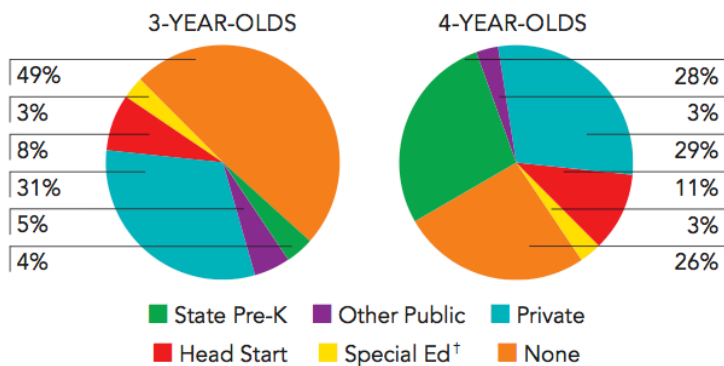


Table 2

## National Access to Pre-Kindergarten Education

Type of Program	Enrollment
Total state program enrollment, all ages	1,323,128
State-funded pre-kindergarten programs	51 programs in 39 states
Hours of operation	1 full-day 12 half-day 28 determined locally
Operating schedule	40 academic year 11 determined locally
Special education enrollment, ages 3 & 4	432,930
Federal Head Start enrollment, ages 3 & 4	755,465
Total Federal Head Start and Early Head Start enrollment, birth to age 5	953,313
State-funded Head Start enrollment, ages 3 & 4	16,182

*Note.* Adapted from Barnett et al., 2011, p. 6



<sup>†</sup> This is an estimated number of children in special education not enrolled in state-funded pre-K or Head Start. Total enrollment in special education is higher.

*Figure 1.* State pre-kindergarten and Head Start enrollment percentage. *Note.* Adapted from

Barnett et al., 2011, p. 6

As revealed in Table 2 above, private pre-kindergarten in the United States continues to be the primary source for educating 4-year-olds, capturing 29% of the population. State pre-kindergarten is not far behind at 28% of the United States population. This is a stark contrast from just five years before when state pre-kindergarten numbers were reported to be 19.9%. Although access to pre-kindergarten is on the rise within the United States, Barnett et al. (2011) reminded readers that the “research clearly shows that only high-quality pre-k programs significantly help prepare children for school” (p. 4). As states continue to gain ground in providing equal access to pre-kindergarten education, researchers have agreed that quality measures should be in place to ensure that the return on the investment is realized (Wesley & Buysse, 2010).

### **Public vs. Private Funded Pre-Kindergarten Education**

A snapshot of today’s pre-kindergarten settings reveals a wide range of diversities. On one end of the spectrum, upper-class Americans seek prestigious private pre-kindergartens for their children and often pay the equivalent of college tuition to receive their services. One clear example of this is a pre-kindergarten chain known as Crème de la Crème, located in Denver, Colorado. Features of this private pre-kindergarten include “French songs and games, D’Nealian Handwriting, Fernand Nathan French, and IBM’s *Writing to Read* program” (Kirp, 2007, p. 2). This elite pre-kindergarten boasts a “bubbling brook stocked with fish” (Kirp, 2007, p. 2) as well as designated rooms for music, math, and computer stations. Often there are waiting lists for these facilities, which generates a competitive impulse among parents. The other end of the spectrum, although supported annually by approximately seven billion federal dollars, shows a different picture. One would often find less qualified teachers in programs such as the Head Starts of the 21st century, as well as less than desirable facilities. Many Head Start programs

take a more *skill and drill* approach to curriculum, which is now more closely regulated by state and federal governments (Kirp, 2007).

In many cases, the teacher qualifications in the Head Start programs do not equal those of their private counterparts. In 2008, the U.S. Department of Health and Human Services released new regulations in an attempt to increase teacher quality within the Head Start programs. The following passage was taken from this guidance document and describes the teacher qualifications today and what is expected to take place by the year 2013.

By October 1, 2011, each Head Start classroom in center-based programs must have a teacher who has at least one of the following:

1. An associate, baccalaureate or advanced degree in early childhood education;
2. An associate degree in a field related to early childhood education and coursework equivalent to a major relating to early childhood education, with experience teaching pre-kindergarten-age children;
3. A baccalaureate or advanced degree in any field and coursework equivalent to a major relating to early childhood education, with experience teaching pre-kindergarten-age children; or,
4. A baccalaureate degree in any field and has been admitted into the Teach For America program, passed a rigorous early childhood content exam, such as the Praxis II, participated in a Teach For America summer training institute that includes teaching pre-kindergarten children and is receiving ongoing professional development and support from Teach For America's professional staff.

However, a three-year waiver can be granted to the above requirement if a Head Start agency can demonstrate it has attempted unsuccessfully to recruit a qualified

candidate and the individual for whom the waiver is being requested is enrolled in a program that will grant that individual a qualifying degree in a reasonable time period. If such a waiver is granted, there must be, in that individual's classroom, a teacher with a Child Development Associate (CDA) credential appropriate to the age of the children being served or an individual with a state-awarded certificate for pre-kindergarten teachers that meets or exceeds the requirements of a CDA credential. (U.S. Health and Human Services, 2008, para. 2)

By September 30, 2013 at least 50% of Head Start teachers nation-wide must have a baccalaureate or advanced degree in Early Childhood Education or a baccalaureate or advanced degree in any subject, and coursework equivalent to a major relating to early childhood education with experience teaching pre-kindergarten-age children.

OHS expects every grantee to make reasonable progress in increasing its numbers of teachers with qualifying BA degrees but there is not a requirement for each grantee to assure that at least 50% of its teachers have such degrees. The requirements established in 2011 for every Head Start teacher will continue to apply. (U.S. Department of Health and Human Services, 2008, para. 3)

Although attempts are being made to strengthen the credentials of Head Start teachers, these published guidelines fall short in the opinion of many researchers who believe every teacher should have a bachelor's degree at minimum (Barnett et al., 2011).

In addition to the variance in teacher qualification and resources, pedagogical differences exist within the American pre-kindergartens of today. The origins of pre-kindergarten point to a child-centered curriculum where students learn through experiences and interactions such as the

discovery of vocabulary through conversation, development of reading readiness skills through the exploration of books, and cultivation of background knowledge through play. This methodology, known as the *cognitive-developmental approach*, emphasizes “the importance of giving children choices and fostering their autonomy and self-regulation, scaffolding children’s development by providing the foundational knowledge in an interactive, constructivist way” (Chambers, Cheung, Slavin, Smith, & Laurenzano, 2010, p. 38).

According to the literature, over the last decade a shift has begun to take place, during which a more contextual, academic focus has emerged with a primary focus on literacy. With the release of influential reports such as one by the National Reading Panel (2000), instruction in the pre-kindergarten years has become more targeted. The National Reading Panel’s analysis made it clear that the best approach to reading instruction is one that incorporates explicit instruction in phonemic awareness, systematic phonics instruction, methods to improve fluency, and ways to enhance comprehension. This methodology is defined as an academic approach, which “generally has clearly defined, specific objectives” (Chambers et al., 2010, p. 37). This approach provides “carefully planned experiences designed to move children toward success on academic outcomes” (Chambers et al., 2010, p. 38).

Fuller (2007) described these differing pedagogical viewpoints.

Advocates argue that they are advancing the interest of children, given that the new telos of public schooling is to boost test scores beginning in first or second grade. Some advocates argue that we cannot narrow the achievement gap without moving youngsters toward English fluency more aggressively and earlier in their childhood. Other early educators, however, fear that chanting phonemes and working on dittoed worksheets will replace colorful activity centers and learning through play. (p. xii)

These differing viewpoints have caused educators to question how quality programming within a pre-k setting is truly defined. However, both camps are agreeing that the early childhood years are extremely valuable and quality programming can impact the future academic and social success of children.

### **Universal vs. Targeted Pre-Kindergarten**

Today's push for universal pre-kindergarten programs, as a means for closing the achievement gap in American schools, has caused more research studies to emerge within the field of early childhood education. Early childhood advocates have long known the benefits of high quality early learning experiences and are relishing their moment in the spotlight. But with this newfound popularity also comes misconceptions about the components that truly make up a high quality pre-kindergarten environment. Skeptics fear that the nations current accountability models will find their way into the pre-k setting where rigid assessments and rote learning may be misused (Zigler, Gilliam, & Barnett, 2011).

With the release of the 2009 *Program for International Student Assessment* results, emphasis on universal pre-kindergarten has been strengthened (Frede & Barnett, 2011). This study compared the educational achievement of 65 countries and placed the United States in the middle in reading, math, and science. Success rates in places such as Shanghai, China, and in the countries of Finland, Norway, and Singapore have sparked an intense analysis by educational advocates in hopes to find an answer to educational deficiencies at home. The common denominator to which many are pointing is the careful attention to universal early childhood care and programming supported in these countries (Frede & Barnett, 2011).

The pre-kindergarten movement has gained momentum as a political, social, and cultural advocacy for young children and has been embraced by many states within the United States.

New Jersey, one of the pioneers of state-funded pre-kindergarten, provided an example for other states to follow. Transpiring out the 1985 New Jersey's Supreme Court ruling known as *Abbott v. Burke* was free pre-kindergarten for 3- and 4-year-old students within the more needy communities. Today, two-thirds of New Jersey's 4-year-olds attend pre-kindergarten in the courts' attempt to "equalize educational opportunity and achievement" (Fuller, 2007, p. xi). In the early 1990s, Georgia began a state-funded half-day program for needy children, which now supports over 55% of Georgia's 4-year-olds. In 1998, Oklahoma took this concept a step further by adding funding for pre-kindergarten into state aid for local schools. By 2004, 63% of Oklahoma's 4-year-olds were enrolled. Last, in 2002, Florida legislation began to provide quality pre-kindergarten programming for all families using a voucher system. This state's program relies heavily on community-based programs, instead of building the programs solely into the current K-12 education system (Fuller, 2007).

Many states have made this vast financial commitment to support some form of pre-kindergarten programming because of the financial and social returns that experts cite. Frede and Barnett (2011) reported, "The review of literature makes clear that quality pre-kindergarten education increases test scores, decreases school failure and dropout, and can produce even longer benefits such as reductions in crime and increases in earnings" (p. 10). Chetty et al. (2010) presented evidence from the National Bureau of Economic Research working paper that supports long term affects of quality pre-kindergarten. "Improvements in kindergarten test scores translate into higher lifetime earnings and improvements in a variety of other outcomes, ranging from where people live to whether they are married" (Chetty et al., 2010, p. 22). Using data from Project Star, an experiment conducted using 79 Tennessee schools from 1985 through

1989, Chetty et al. made the following discoveries in their quest to link test scores to adult outcomes:

We find evidence that kindergarten test scores are indeed very good at predicting later outcomes. There is a strong correlation between kindergarten test scores and a wide variety of outcomes in early adulthood (measured between ages 25 and 27). For each 1 percentile point increase in kindergarten test scores, the students' yearly earnings increase by \$130—or almost 1% of mean earnings. The relationship diminishes only slightly if we account for family background, for instance, as measured by parental income.

Kindergarten test scores also predict a wide variety of other positive outcomes. By age 27, children with higher scores are much more likely to have attended college, have retirement savings, be a homeowner, and live in a better neighborhood. (p. 22)

Chetty et al. (2010) argued that because of their findings, investing in high quality early education cannot be ignored. It is their feeling that this investment in “disadvantaged areas may significantly reduce poverty and inequality in the long run” (Chetty et al., 2010, p. 25).

Opponents of universal pre-k argue that the major national investment will not pay the dividends that some may claim. Finn (2010) argued that the majority of 3- and 4-year-old children are already exposed to pre-kindergarten in some form. He did recognize that not all pre-kindergartens are created equal but argued that disadvantaged children need intensive interventions that universal pre-kindergarten could not resolve. He proposed that publicly funded pre-k would become a “tax-financed free-ride for millions of families and not nearly enough for the smaller population of kids who need major-league assistance” (Finn, 2010, p. 12). Other protestors of universal pre-kindergarten believe quality will be lacking unless funded at a much higher level than proposed (Kirp, 2007). The literature also maintains that quality teachers



will move to more affluent areas, leaving disadvantaged children with those less qualified (Fuller, 2007). Last, there is a concern for the push of k-12 accountability into an earlier grade level. Early childhood advocates fear that more governmental support would equate to an excess of standardized assessments and inappropriate classroom practices (Fuller, 2007).

Adversaries of the *universal pre-k* concept call for a more focused approach, known as *targeted pre-k*. This camp of activists claim that the rate of return is not as high when providing pre-kindergarten to all children, as compared to providing services to students who are considered academically and socially at-risk. Rolnick and Grunewald (2011) cited that this higher rate of return is evident because “low income children begin at a lower baseline than children from high-income families” (p. 23). In addition, Rolnick and Grunewald claim that gains made within the universal pre-kindergarten studies are largely influenced by the gains of those lower income students, which may distort findings. Hart and Risley (1995) reported that by the age of 3, children who grow up living in poverty possess only half the amount of vocabulary of those children living with parents who had received college degrees. The argument for targeted pre-kindergarten has also taken on a political nature. Targeted supporters claim that universal pre-kindergarten would be nothing more than a public entitlement and is more about advancing political interests rather than children (Fuller, 2007).

### **Pre-Kindergarten Quality Indicators**

Since the inception of pre-kindergarten programs in the United States, many organizations have attempted to encapsulate what quality looks like in an early childhood setting. Studies have investigated public and private settings, teacher qualifications, as well as demographics. Most researchers who have conducted longitudinal studies agree that long-term

benefits of pre-kindergarten programs are only realized if the program processes these quality measures (Barnett & Masse, 2006).

One notable study that attempted to measure quality was that of Andrews and Slate (2002), who compared Montessori, Head Start, public pre-kindergarten and private day care programs that provided pre-kindergarten services. Their findings encouraged public pre-kindergarten programs to include “connections to service agencies to increase parent involvement, effective teacher training, attachment to existing public school buildings and joining elementary school routine; and curricular connections between pre-kindergarten programs and kindergarten programs” (Andrews & Slate, 2002, p. 64). These recommended connections to the public school systems began to gain momentum as educational experts continued to encourage a united pk-12 system.

The National Association for Elementary School Principals (NAESP; 2005), in collaboration with many researchers, published a handbook in response to the growing pre-kindergarten populations that were being placed within the elementary school setting. Entitled *Leading Early Childhood Learning Communities*, this handbook was intended to help set the stage for what quality current day pre-kindergarten settings should look like. NAESP’s (2005) ideal for young children’s learning includes programs that are

1. Available to all three-, four- and five-year-olds in every community;
2. Grounded in sound early childhood development practices like investigation and play;
3. Guided by ongoing classroom-based assessment, rather than by an over-reliance on norm-referenced testing;
4. Funded to serve young children well;
5. Designed to support young children’s varied learning needs, languages and cultures;

6. Part of a continuum of learning that extends from pre-k through third grade with strong transition to the start of fourth grade;
7. Operated by schools or other community organizations, with communication and shared expectations between schools and the communities they serve; and
8. Designed to provide full-day options for working families. (p. 2)

NAESP, as well as other organizations, have continued to provide resources that will help to ensure quality programming and inter-agency connections within the public school setting.

In 2005, the National Association for the Education of Young Children (NAEYC), a national advocacy group for early childhood education, published a set of guiding principles to help ensure quality for those evaluating or developing new programming. Organizations can choose to be evaluated on these criteria and gain accreditation status through the NAEYC. These principles cover a wide array of fundamental elements and considerations. They are as follows:

1. Relationships: The program promotes positive relationships among all children and adults to encourage each child's sense of individual worth and belonging as part of a community and to foster each child's ability to contribute as a responsible community member.
2. Curriculum: The program implements a curriculum that is consistent with its goals for children and promotes learning and development in each of the following areas: social, emotional, physical, language, and cognitive.
3. Teaching: The program uses developmentally, culturally, and linguistically appropriate and effective teaching approaches that enhance each child's learning and development in the context of the program's curriculum goals.

4. **Assessment of Child Progress:** The program is informed by ongoing systematic, formal, and informal assessment approaches to provide information on children's learning and development. These assessments occur within the context of reciprocal communications with families and with sensitivity to the cultural contexts in which children develop. Assessment results are used to benefit children by informing sound decisions about children, teaching, and program improvement.
5. **Health:** The program promotes the nutrition and health of children and protects children and staff from illness and injury.
6. **Teachers:** The program employs and supports a teaching staff that has the educational qualifications, knowledge, and professional commitment necessary to promote children's learning and development and to support families' diverse needs and interests.
7. **Families:** The program establishes and maintains collaborative relationships with each child's family to foster children's development in all settings. These relationships are sensitive to family composition, language, and culture.
8. **Community Relationships:** The program establishes relationships with and uses the resources of the children's communities to support the achievement of program goals.
9. **Physical Environment:** The program has a safe and healthful environment that provides appropriate and well-maintained indoor and outdoor physical environments. The environment includes facilities, equipment, and materials to facilitate child and staff learning and development.
10. **Leadership and Management:** The program effectively implements policies, procedures, and systems that support stable staff and strong personnel, fiscal, and

program management so all children, families, and staff may have high quality experiences. (NAEYC, 2005, pp. 1-3)

NIEER also provided a set of well-respected quality standards. These indicators tend to be more specific and are tracked throughout the nation and documented within the NIEER annual publication of state-funded pre-kindergarten programs.

1. Early learning standards: National Education Goals Panel content areas covered by state learning standards for pre-kindergarten-age children must be comprehensive.
2. Teacher degree: Lead teacher must have a BA, at minimum.
3. Teacher specialized training: Lead teacher must have specialized training in a pre-k area.
4. Assistant teacher degree: Assistant teacher must have a CDA or equivalent, at minimum.
5. Teacher in-service: Teacher must receive at least 15 hours/year of in-service professional development and training.
6. Maximum class size: Maximum number of children per classroom must be 20 or fewer.
7. Staff-child ratio: Lowest acceptable ratio of staff to children in classroom maximum number of students per teacher must be 1:10 or better.
8. Screening/referral and support services: Screenings and referrals for vision, hearing, and health must be required; at least one additional support service must be provided to families.
9. Meals: At least one meal must be required daily.

10. Monitoring: Site visits must be used to demonstrate ongoing adherence to state program standards. (Barnett et al., 2011, p. 27)

Last, the work of Pianta, La Paro, and Hamre (2008) can be cited as a credible source for early education quality standards. Pianta et al. developed the following criteria as a means of measuring and designating high-quality classrooms. Their research findings support that these components help to solidify a superior learning environment for young students. Rather than examining indicators such as class size and teacher qualifications, Pianta et al.'s accountability system, known as the classroom assessment scoring system (CLASS), focuses on the importance of teacher-student interactions within an early childhood setting. The CLASS system includes three domains known as Emotional Support, Classroom Organization, and Instructional Support. Each domain contains several dimensions that are further defined by observable indicators. Table 3 displays the domains, each dimension, and a description of each within the CLASS system.

Table 3

*Dimensions of the CLASS System*

Domain	Dimension	Description
Emotional Support	Positive Climate	Reflects the overall emotional tone of the classroom and the connection between teachers and students.
	Negative Climate	Reflects overall level of expressed negativity in the classroom between teachers and students (e.g., anger, aggression, irritability).
	Teacher Sensitivity	Encompasses teachers' responsiveness to students' needs and awareness of students' level of academic and emotional functioning.
	Regard for Student Perspectives	The degree to which the teacher's interactions with students and classroom activities place an emphasis on students' interests, motivations, and points of view, rather than being solely teacher-driven.
Classroom Management	Behavior Management	Encompasses teachers' ability to use effective methods to prevent and redirect misbehavior, including presenting clear behavioral expectations and minimizing time spent on behavioral issues.
	Productivity	Considers how well teachers manage instructional time and routines so that students have the greatest number of opportunities to learn.
	Instructional Learning Formats	The degree to which teachers maximize students' engagement and ability to learn by providing interesting activities, instruction, centers, and materials.
Instructional Support	Concept Development	The degree to which instructional discussions and activities promote students' higher-order thinking skills versus focus on rote and fact-based learning.
	Quality of Feedback	Considers teachers' provision of feedback focused on expanding learning and understanding (formative evaluation), not correctness or the end product (summative evaluation).
	Language Modeling	The quality and amount of teacher's use of language-stimulation and language-facilitation techniques during individual, small-group, and large-group interactions with children.

*Note.* Adapted from Pianta et al., 2008

Although quality indicators exist, accreditation processes are encouraged, and associations are present to support the early childhood community, many believe that the snapshots of current day pre-kindergartens do not exhibit these high standards. As the nation focuses on strategies that will improve economic standings and will support the United States future stake in the global economy, many would argue that the investments in young children would cultivate immeasurable benefits. As indicated in the above research, these benefits will only be realized if there are quality assurances and careful program development.

### **Leadership within 21st Century Pre-Kindergartens**

“The quality of any field or organization is dependent on the quality of its leaders. In early care and education, leadership has never been as critical to the field’s advancement as it is now” (Kagan & Bowman, 1997, p. xi). At a time when the international spotlight is shining on early childhood and the United States strives for a seamless Pre-Kindergarten-16 system, researchers are beginning to take a close look at the current leadership practices within private and public pre-kindergarten settings. Research studies conducted on private and public pre-kindergarten directors are sparse. Most studies focus on the impact of the pre-kindergarten teacher, but rarely mentions the importance of the director or leader of the program. In fact, Kagan, Kauerz, and Tarrant (2008) gave a detailed picture of the early childhood teaching workforce, describing it as “predominately White women in their late 30s and early 40s. Most have at least an associate’s degree and earn salaries that are extremely low compared with those of individuals with similar qualifications in other fields” (p. 23).

Because early childhood programs can appear within the k-12 public and private school setting and within public and private child care facilities, Head Start, and private pre-kindergartens, the profile and qualifications of the early childhood leader can vary. Outside of



the k-12 system, leader practices and qualifications differ throughout the states and among various facilities. These leaders may have distinct certifications and postsecondary degrees specializing in early childhood, or they may only have a high school diploma with localized training. Within the k-12 system, pre-kindergarten program leadership primarily falls to the elementary school principal, who may or may not have experience with students in the early childhood setting (NAESP, 2010). This section will attempt to capture the profiles and qualifications of leaders in both the public and private pre-k settings.

The depiction of the early childhood leader, outside of the k-12 system, is difficult to capture due to the variance in required education levels and general qualifications. According to the U.S. Bureau of Labor Statistics (2012),

most states require pre-kindergarten and childcare center directors to have at least a high school diploma, but some require an associate's or bachelor's degree in early childhood education. These degree programs teach students about child development, strategies to teach young children, and how to observe and document children's progress. Employers may prefer candidates who have a degree in early childhood education or at least some postsecondary education in early childhood education. (para. 1)

In the state of Indiana, required qualifications of a childcare center director are as follows:

- (a) The director shall be a minimum of twenty-one (21) years of age.
- (b) Each child care center must employ a qualified person to carry out the responsibilities of the director.
- (c) The director shall meet one (1) of the following minimum education and experience qualifications:
  - (1) A bachelor of arts or bachelor of science degree from an accredited

college or university in early childhood education or elementary education with a kindergarten endorsement and grades of C or better.

(2) Any bachelor of arts or bachelor of science degree from an accredited college or university must include one (1) of the following:

(A) Fifteen (15) credit hours in college level courses with documented content relating to the needs, skills, development, or teaching methods of children six (6) years of age or younger and grades of C or better.

(B) A Child Development Associate (CDA).

(3) A two (2) year associate's degree in early childhood education from an accredited college or university, with a grade of C or better and a minimum of three (3) years of experience in an early childhood program.

(d) All directors who were employed as a director prior to December 1, 1985, are exempt from the specific educational requirements for this position provided that his or her position continues as a director at that child care center.

(Indiana Administrative Code, 2012a, p. 48)

Pre-kindergarten directors have the opportunity to earn the national administration credential from the National Early Childhood Program Accreditation Commission. This credential provides recognition that a person has the knowledge and skills needed to lead and manage a pre-kindergarten. Course competencies include

1. History of Early Childhood Education, and Personal and Professional Development of the Child Care Professional
2. An Effective Organization
3. Internal and External Systems

4. Laws and Regulations
5. Staff Management and Human Resources
6. Educational Programming
7. Marketing, Advertising and Public Relations
8. Financial Management
9. Operational Planning and Evaluation
10. Leadership and Advocacy (National Early Childhood Program Accreditation Commission, 2012, para. 1)

This accreditation course is taken over a five-day period and equates to three university credits through Oklahoma State University.

Leaders or program directors within public Head Start programs can hold vastly different qualifications. According to the U.S. Department of Health and Human Services (n.d.) website, current directors of Head Start must have “demonstrated skills and abilities in a management capacity relevant to human services program management” (para. 10). No place on this website does it specify a required degree for this position. However, by September 30, 2013, all education coordinators, including those that serve as curriculum specialists, nationwide in center-based programs must have a baccalaureate or advanced degree in early childhood education, a baccalaureate or advanced degree in any subject and coursework equivalent to a major relating to early childhood education with experience teaching pre-kindergarten-age children (U.S. Department of Health and Human Services, n.d.).

Researchers have found that many early childhood leaders emerge from the pool of qualified pre-kindergarten teachers, and although they may possess many skills in working with young children, they may not have the knowledge or skills for working

with adults in a leadership role (Rodd, 2006). Historically, leaders in the early childhood setting have been primarily female. In addition, child care centers have hired young, sometimes inexperienced staff and paraprofessionals (Rodd, 2006).

There is a great deal of content that revolves around management within the early childhood profession, but very little can be found regarding leadership.

The lack of opportunities for leadership training, coupled with limited access to experienced role models and the antithesis many women appear to have towards roles and responsibilities that involve authority and power have acted to impede development of an understanding of leadership, particularly as it pertains to early childhood. (Rodd, 2011, p. 23)

“Although levels of professionalism, accountability and credibility are increasing in the global early childhood profession, the concept of leadership as a means of advancing the field still appears not to be as well understood by practitioners” (Rodd, 2011, pp. 23-24).

Another setting of interest is within the current public k-12 structure. As of 2012, pre-kindergartens have found a place in the k-12 system throughout many states. As this evolution has taken place, many state leaders have decided that the logical place to house these pre-kindergarten settings are within the existing elementary schools. Leadership often falls to the elementary principal in these situations. These leaders do possess advanced degrees but may or may not have had experience or special training in early childhood education. Although this placement of pre-kindergarten classrooms seems logical to most, the collision of these two separate worlds has revealed some interesting logistical concerns. Shore, Shue, and Lambert (2010) discussed some of the challenges that North Carolina has faced since enacting a pre-kindergarten program known as *More at Four* in 2001. This program targets students who are

at- risk of entering kindergarten behind their typical peers. Targeted groups include those living in poverty, those with limited English proficiency, and those with health and developmental setbacks. A case study of the elementary principals who absorbed the 3- and 4-year-old students revealed many interesting considerations. Before implementing the program, 59% of the elementary principals reported having no professional development activities that would support this transition. Only 9% had worked with pre-kindergarten-aged students in their tenure as leaders and 35% were unaware of the separate set of academic standards that their state had adopted for the pre-kindergarten students. The most concerning piece of data collected was the fact that 88% of the principals' preparation programs did not include early childhood components such as developmental benchmarks and age appropriate curricula (Shore et al., 2010).

NAESP has developed leadership standards that help define how quality leaders perform in an early childhood setting. In January 2010, NAESP published a proposal for an addition to the reauthorization of the Elementary and Secondary Education Act entitled *Professional Development for Principals: Investing in Early Childhood Transition Systems to Improve School Outcomes*. The targeted audience of this document was policymakers, as well as those evaluating current leadership practices. The following quality indicators explain their position on early childhood leadership:

1. Gain the knowledge base and capacity to provide high-quality early childhood education and develop a continuum of learning from Pre-kindergarten through the third grade.

2. Work collaboratively with early childhood education providers, services providers, and families to create a continuum of high-quality learning for children in the community and school settings.
3. Engage the school community in partnerships with early learning programs, and families to set a shared vision for understanding early childhood development.
4. Support teachers with strong instructional leadership in early learning and work with teachers to identify high-quality curriculum and developmentally appropriate practices; align on-going, job-embedded professional development opportunities; and develop effective transitions for children from early learning or home settings to the primary school years.
5. Provide safe, supportive and appropriate early learning environments that focus on the needs of the whole child, including the intellectual, social, emotional, physical and nutritional well being of children.
6. Integrate best practices in early learning with k-3 curriculum and standards;
7. Utilize multiple measures of developmentally appropriate assessments and use data effectively to make instructional decisions. (NAESP, 2010, p. 2)

### **Summary**

A review of literature has revealed that there are vast differences that exist in pre-kindergarten classrooms throughout the United States and the state of Indiana. It is clear that there are national debates and conflicting views on how the United States should proceed with early childhood education reform. Should the United States implement a *universal* approach, similar to high performing Finland and Singapore who offer pre-kindergarten to all of their citizens, or should it continue to focus efforts on a *targeted* group of at-risk students, which some

feel makes the most significant difference in closing the achievement gap? Researchers from both sides of this debate seem to agree that organized educational experiences do have a long-term impact on young learners. With mounting studies being released within the field of neuroscience that confirm that the human mind develops at a very rapid pace from birth to age 5, educational leaders agree that this is a crucial time to ensure students get off to the right start.

The review of literature confirms that quality pre-kindergarten education can be defined and that long-term benefits—such as a social, emotional, and academic readiness—can only be realized if quality factors are put into place and monitored. Many quality measures have been established and are being utilized to help program developers and directors ensure quality. These measures are also being utilized to keep a pulse of what pre-k programming looks like throughout the United States.

Last, literature reveals that leadership profiles within the early childhood education field vary as well. Child care facility director qualifications are defined in the state of Indiana but are not required for the faith-based organizations. Leaders or program directors within public Head Start can hold vastly different qualifications as those leaders within a public elementary school setting. However, by September 30, 2013, all education coordinators nationwide, including those who serve as curriculum specialists, in center-based programs must have a baccalaureate or advanced degree in early childhood education or a baccalaureate or advanced degree in any subject and coursework equivalent to a major relating to early childhood education with experience teaching pre-kindergarten-age children. Pre-kindergarten programs that are housed within public elementary settings are typically overseen by the elementary school principal, who may or may not have an extensive background in early childhood education.

## CHAPTER 3

### METHODOLOGY

#### **Purpose of the Study**

The purpose of this study was to examine the current state of pre-kindergarten classrooms in the state of Indiana through the perspectives of public and private pre-kindergarten program directors. This quantitative study explored six quality standards or indicators, as defined by national early childhood organizations found in the review of literature. These quality indicators included teacher qualifications, length of day, inclusion of curricular standards, access to professional development, class size, and teacher-to-student ratios. The directors were asked their perceptions as to how they viewed the quality of their pre-kindergarten program based on these indicators. This study also provided a descriptive analysis of pre-kindergarten program quality and pre-kindergarten director characteristics within Indiana.

#### **Research Questions**

In seeking information that may reveal the current state of private and publicly funded pre-kindergarten in Indiana, this study addressed the following questions:

1. What is the reported quality of Indiana pre-kindergartens, based on the perceptions of program directors?
2. Is there a significant interaction between school type and school location on the pre-kindergarten quality composite score?



3. Is there a significant difference between school types on the pre-kindergarten quality composite score?
4. Is there a significant difference between school locations on the pre-kindergarten quality composite score?

### **Null Hypotheses**

In relation to the three research questions asked, the following null hypotheses were developed:

**H<sub>0</sub>1.** There is no significant interaction between school type and school location on the pre-kindergarten quality composite score.

**H<sub>0</sub>2.** There is no significant difference between school types on the pre-kindergarten quality composite score.

**H<sub>0</sub>3.** There is no significant difference between school locations on the pre-kindergarten quality composite score.

### **Description of the Sample**

Directors of pre-kindergarten programs from both public and private settings were surveyed within the state of Indiana. For the purpose of this study, pre-kindergarten was defined as academic programming provided for children who are 4 to 5 years of age and who are eligible to enter kindergarten the following year, in accordance with Indiana state guidelines. Public pre-kindergartens are defined as those who are incorporated into and directed by a public school system and who are using parent tuition and/or state funding sources. Private pre-kindergartens are defined as those who fall under the umbrella of faith-based, parochial, or privately owned.

### **Data Sources**

Data for this study were obtained from the Indiana Institute on Disability and Community (IIDC). Dr. Conn-Powers, director of the IIDC, has conducted research on the early childhood setting within Indiana and has used this database as a part of the Early Childhood Meeting Place Project, developed and sponsored by his institution. Data were also gathered from the Indiana Department of Education website, where contact information exists for both private and public pre-kindergartens that are associated with public school systems in Indiana. Additionally, private pre-kindergarten data were gathered from the Indiana Family and Social Services Administration, which compiles private childcare facilities that include pre-kindergarten programs. Not all private pre-kindergarten groups were represented, due to the lack of a common database that encompasses all subcategories.

### **Data Collection Procedures**

Following the oral proposal of this study, an application was filed with the Institutional Review Board. Once notification of exemption was received, an email inquiry was sent to 291 private and 264 public pre-kindergarten program directors throughout Indiana. This email included an introductory message, which introduced the study and provided a link to the survey. Attached to each survey was a cover letter that described the purpose of the study and brief description of the survey and instructions. The cover letter included language that conveyed confidentiality and anonymity for all survey participants.

### **Instrumentation**

The Survey of Public and Private Pre-Kindergarten Program Directors was used to measure pre-kindergarten quality, based on the perceptions of public and private pre-kindergarten directors in the state of Indiana. The survey was developed after reviewing the

current research on pre-kindergarten quality within the United States, which cited quality indicators of teacher qualifications, length of day, inclusion of curricular standards, access to professional development, class size, and teacher-to-student ratios. Based on the literature, survey questions were developed to correspond to each of the six quality indicators. Public and private pre-kindergarten directors were asked to rate the level of quality of each indicator using a six-point scale. The survey also collected descriptive data such as how long the pre-kindergarten has been established, the background of the director in an early childhood setting, the highest degree obtained by the director, and whether the director is male or female.

### **Method of Analysis**

This quantitative study examined the level of quality among pre-kindergartens within the state of Indiana. The survey developed for this study asked 264 public and 291 private, pre-kindergarten directors to rate six quality indicators on a six-point scale.

Scores from these survey questions were added together to get a composite score for overall pre-kindergarten quality. Respondents were asked to rate their schools on each of the six quality indicators utilizing a six-point scale. Responses were compiled into a composite quality score. This composite score became the dependent variable that was tested against the independent variables of school type (rural, suburban, or urban) and school location (public or private).

The first research question examined descriptive data gathered from the pre-kindergarten program directors, such as sex of the director, level of early childhood background, and educational background. The second research question examined if a significant interaction existed between two independent variables, school type (public and private schools) and school location (rural, suburban, or urban) as it related to the pre-kindergarten quality composite score.

A two-by-three factorial ANOVA was used, because of having one dependent variable (composite school score) with two independent variables (school type and school location).

Research Question 3 examined if a significant difference existed between the dependent variable and school type (public or private). Research Question 4 examined if a significant difference existed between the dependent variable and school location (urban, suburban, and rural).

G\*Power 3.1.3 was used to calculate necessary sample size and to ensure that the design of this study would likely to net sufficient statistical power. For the test of school type, to achieve a power of 0.80 using  $\alpha = .05$  and to detect a medium effect size of 0.25, a total sample size of 128, or 64 of both public and private was desired. For a power of .90, with the same parameters, the sample size needed to be 171. For the test of location and for the test of interaction, to get a power of .80 with the same parameters, a sample size of 158 was needed. A sample size of 206 was needed to hit power of .90 for the test of location and for the test of interaction. Due to this analysis, 264 public and 291 private directors were surveyed, in hopes that the desired sample size would be realized.

### **Summary**

There is mounting research that maintains the importance of quality early childhood programming as an integral part of the overall educational system. This study examined research-based quality indicators in order to gain a greater understanding of the pre-kindergarten quality level that exists in the state of Indiana. The research looked for differences that may or may not exist between school types and school location upon the quality composite score. Last, this study provided a descriptive analysis of pre-kindergarten programs and pre-kindergarten director characteristics within Indiana.

## CHAPTER 4

### DATA FINDINGS AND ANALYSIS

The purpose of this study was to examine the current state of pre-kindergarten classrooms in the state of Indiana through the perspectives of public and private pre-kindergarten program directors. The review of literature in Chapter 2 revealed common quality standards or indicators, as defined by national early childhood organizations. These quality indicators included teacher qualifications, length of day, inclusion of curricular standards, access to professional development, class size, and teacher-to-student ratios. In this quantitative study, pre-kindergarten directors were asked their perceptions of how they viewed the quality of their pre-kindergarten programs. The intention of this study was to also provide a descriptive view of pre-kindergarten programs and characteristics of pre-kindergarten directors within Indiana.

#### **Research Questions**

The following research questions were designed to explore the quality indicators while investigating the current state of pre-kindergarten classrooms within the state of Indiana.

1. What is the reported quality of Indiana pre-kindergartens, based on the perceptions of program directors?
2. Is there a significant interaction between school type and school location on the pre-kindergarten quality composite score?

3. Is there a significant difference between school types on the pre-kindergarten quality composite score?
4. Is there a significant difference between school locations on the pre-kindergarten quality composite score?

### **Study Sample**

On February 15, 2013, the final draft of the research survey (Appendix) was mailed electronically via Survey Monkey to 264 public and 291 private pre-kindergarten directors in the state of Indiana. The sample size was increased slightly from what was purposed in Chapter 3, in an effort to increase the rate of return. A list of participating public and private pre-kindergarten programs, along with the contact information of the perspective directors, was obtained from the Indiana Department of Education website. Contacts were cross-referenced on a database that was shared by Dr. Michael Conn-Powers, professor and researcher at Indiana University and Director of the Indiana Institute on Disability and Community.

Of the 555 surveys that were sent electronically, 71 emails failed to be delivered due to invalid email contact information or difficulties with the recipient's email server. This decreased the number of successfully sent surveys to 484 in all. Of the total surveys sent, 127 (26%) were returned successfully. The following whole sample frequency distributions describe the independent variables of school type (public and private) and school location (rural, suburban, or urban). A review of the returned surveys revealed the following results.

#### **Descriptive Statistics: Whole Sample**

According to the comprehensive results of the frequency distribution relating to school type (public and private pre-kindergarten programs), of the 127 surveys returned, 61 (48%) were designated as public schools, and 66 (52%) were designated as private schools. When looking at

school location (rural, suburban, and urban), rural schools were more prevalent ( $n = 47, 37\%$ ), followed by suburban schools ( $n = 40, 31.5\%$ ), and urban schools ( $n = 40, 31.5\%$ ).

Reflected in the frequency distribution on pre-kindergarten program type, 20 (15.7%) of the survey respondents were in charge of special education pre-kindergarten programs, and more than half of the respondents ( $n = 70, 55.1\%$ ) were exclusively in charge of general education pre-kindergartens. Respondents who were in charge of both special education and general education programs totaled 37 (29.1%).

In an attempt to portray common characteristics of pre-kindergarten directors within the state of Indiana, gender and educational background were investigated. Among the respondents who chose to participate in the study, women outnumbered men roughly 3 to 1. There were 94 (74%) female directors and 33 (26%) male directors who completed the survey. More directors of pre-kindergarten programs within the state in Indiana had a master's degree or other graduate degree ( $n = 103, 81.7\%$ ) than those who had a bachelor's degree ( $n = 19, 15.1\%$ ), some college ( $n = 3, 2.4\%$ ), or simply a high school diploma ( $n = 1, .8\%$ ).

In an attempt to describe what pre-kindergarten classrooms look like throughout the state of Indiana, the survey collected data on the following characteristics: student-teacher ratio, instructional day in minutes, longevity of program in years, and director's tenure in years. The following descriptive statistics reflect the program characteristics for the whole sample.

Examination of the student-teacher ratio among all survey respondents showed an average ratio of 10.81 students to every 1 teacher ( $SD = 3.70$ ), with the smallest student-teacher ratio being 4 to 1 and largest being 24 to 1. An examination of instructional day minutes found that pre-kindergarten students, on average, attended school 239.16 minutes ( $SD = 103.92$ ), or approximately four hours. The shortest reported pre-kindergarten day was 90 minutes (1 hour,

30 minutes) and the longest day reported was 480 instructional minutes (8 hours). Indiana's pre-kindergarten programs have been established for an average of 14.75 years ( $SD = 11.96$ ). The longest running pre-kindergarten reported being in operation for 50 years. Lastly, an examination of the program directors' tenure revealed that the average director had been in charge of his or her program for 5.64 years ( $SD = 4.66$ ), with the longest director tenure reported as 27 years.

After the review of current research on quality pre-kindergarten programming, a survey was developed in order to obtain the desired input on program quality from the sample. Using the Survey of Public and Private Pre-Kindergarten Directors (Appendix), participants were asked to provide not only descriptive data, as shown above, but also to rate the perceived quality of six areas, as well as an overall quality rating, using a 6-point scale. These areas and the corresponding survey values are as follows: director background (1 = *very little or no background*, 6 = *extensive background*); teacher background (1 = *very little or no background*, 6 = *extensive background*); length of instructional day (1 = *not enough time*, 6 = *sufficient time*); inclusion of standards (1 = *does not implement*, 6 = *fully implemented*); professional development of teachers (1 = *no participation*, 6 = *high level of participation*); class size (1 = *not appropriate*, 6 = *ideal*); student to teacher ratio (1 = *not appropriate*, 6 = *ideal*); and overall quality (1 = *lowest quality*, 6 = *highest quality*). These values provided insight into the perceived quality of pre-kindergarten programs and the personnel. The overall composite score reflects the average of the seven different survey questions as presented in Table 4.



Table 4

Descriptive Data for Survey Responses on Quality Indicators: Whole Sample

Quality Indicators	<i>M</i>	<i>SD</i>
Director Background	3.94	1.62
Teacher Background	4.98	1.27
Instructional Time	4.95	1.38
Inclusion of Standards	5.13	1.27
Professional Development	5.13	1.37
Class Size	5.13	1.17
Student–Teacher Ratio	5.16	1.11
Overall Quality	5.34	.94
Composite Score	4.97	.91

As evident in Table 4, director and teacher background reported the lowest means of the eight reported categories. When looking at the three indicators that directly relate to instructional practice (instructional time, inclusion of standards, and professional development), inclusion of standards and access to professional development reported the highest mean values. In the examination of indicators that relate to physical class attributes (class size and student–teacher ratio), student–teacher ratio reported the highest mean value compared to all other quality indicators. As shown above, the director’s background reported the lowest mean, and overall program quality reported the highest mean.

### **Descriptive Statistics: School Type (Public, Private) and School Location (Rural, Suburban, Urban)**

In the first section of Chapter 4, reported data examined descriptive statistics of the whole sample. In order to gain further insight into the quality of pre-kindergarten programming, the data were split so that each level of the independent variables (public, private, rural, suburban, and urban) could be examined. The following tables (Tables 5, 6, and 7) describe public schools as they relate to school location.

Table 5

Frequency Distribution of School Location: Public Schools

<u>Demographic Setting</u>	<u><i>N</i></u>	<u>Percent</u>
Rural	25	41.0%
Suburban	14	23.0%
Urban	22	36.0%

According to the comprehensive results of the frequency distribution relating to school location of public pre-kindergarten programs within the state of Indiana, there were more rural public pre-kindergarten programs than suburban or urban as reported in Table 5. When comparing this to the whole sample distribution found early in Chapter 4, both rural and urban showed percentage increases, and reported public suburban schools showed a decrease in percentage.

Table 6

## Frequency Distribution of Pre-Kindergarten Program Type: Public Schools

Program Type	<i>N</i>	Percent
Special Education	20	32.8%
General Education	12	19.7%
Both Special Education and General Education	29	47.5%

According to the comprehensive results of the frequency distribution relating to program type of public pre-kindergarten programs within the state of Indiana, there were more schools that provide both special education and general education programs, as displayed in Table 6. When comparing this to the whole sample distribution, general education programs showed a decrease in percentage, and programs that offer both special education and general education pre-kindergarten and those who exclusively offer special education programs showed an increase in percentages. Notably, public pre-kindergarten programs that offer special education programs exclusively showed a 17.1% increase against the whole sample. Table 7 reflects the targeted characteristics (gender and educational background) of pre-kindergarten program directors within the *public* school programs within the state of Indiana.

Table 7

## Frequency Distribution of Director's Gender: Public Schools

Gender	<i>N</i>	Percent
Male	23	37.7%
Female	38	62.3%

Within public pre-kindergarten programs in Indiana, there were more female directors than there were male directors, as shown in Table 7. There was a slight increase in the overall percentage of male directors in public schools, as compared to the whole sample. Conversely, there was a decrease in the percentage of female directors as compared to the whole sample.

Displayed in Table 8, more directors of public pre-kindergarten programs within the state in Indiana held a Master's degree or other graduate degree than those who held a bachelor's degree. There were no public pre-kindergarten directors who reported having only some college. Reported educational background of public school directors was reflective of the whole sample distribution, pointing to more directors holding at least a Master's degree. Table 9 reflects public pre-kindergarten program characteristics, as reported for the whole sample above.

Table 8

## Frequency Distribution of Director's Level of Education: Public Schools

Level of Education	N	Percent
Some College	0	0.0%
Bachelor's Degree	8	13.3%
Master's Degree or Other Graduate Degree	52	86.7%

Table 9

## Descriptive Data of Public Pre-Kindergarten Programs in Indiana

Program Characteristics	<i>M</i>	<i>SD</i>	Range
Student–Teacher Ratio	11.39	4.12	4 - 20
Instructional Day Minutes	220.26	91.04	140 - 430
Program Longevity	10.67	8.32	1 - 49
Director’s Tenure	5.23	4.13	1 - 18

As evident in Table 9, student–teacher ratio among public pre-kindergarten survey respondents revealed an average ratio of approximately 11.39 students to every one teacher. This ratio mean showed an increase when compared to the whole sample mean of 10.81 students to every one teacher. An examination of instructional day minutes found that public pre-kindergarten students, on average, attend school 220.26 minutes, or approximately 3.67 hours. This is a decrease from the whole sample average of approximately 4 hours. Indiana’s public pre-kindergarten programs have been established for an average of 10.67 years. This was a shorter amount of time than the whole sample, which reported an average of 14.75 years. Last, an examination of the program directors’ tenure revealed that the average public director had been in charge of his or her program for 5.23 years, with the longest public director tenure reported as 18 years. This mean score was a slight decrease from the whole sample mean of 5.64 years.

Table 10 presents the quality indicators as rated by public pre-kindergarten directors. A comparison to the whole sample is made.

Table 10

## Descriptive Data for Survey Responses on Quality Indicators: Public Schools

Quality Indicators	<i>M</i>	<i>SD</i>
Director Background	3.85	1.45
Teacher Background	5.02	1.31
Instructional Time	4.44	1.48
Inclusion of Standards	5.18	1.22
Professional Development	4.80	1.58
Class Size	4.67	1.34
Student-Teacher Ratio	4.67	1.33
Overall Quality	5.11	1.10
Composite Score	4.82	1.12

As evident in Table 10, public director background reported the lowest mean of the eight reported categories and was lower than the director background of the whole sample. Public teacher background reported a slightly higher mean compared to the whole sample teacher background category. When looking at the three indicators that directly relate to instructional practice (instructional time, inclusion of standards, and professional development), inclusion of standards reported the highest mean within the public sector. This differed from the whole samples highest reported means, which were inclusion of standards *and* professional development. In the examination of indicators that relate to physical class attributes, class size and student–teacher ratio showed decreased means, as compared to the whole sample. As reflected in the whole sample, the public director’s background reported the lowest mean. Public

schools rated the inclusion of standards as their highest quality indicator, and the whole sample rated their student–teacher ratio as the highest of the seven quality indicators. Tables 11, 12, 13, and 14 present a closer look at the private schools within the sample. In order to gain deeper insight, this section examined how the breakdown of private pre-kindergarten data compares to the whole sample.

Table 11

## Frequency Distribution of School Location: Private Schools

Demographic Setting	<i>N</i>	Percent
Rural	21	32.3%
Suburban	26	40.0%
Urban	18	27.7%

According to the comprehensive results of the frequency distribution relating to school location of private pre-kindergarten programs within the state of Indiana, there were more suburban private pre-kindergarten programs than rural or urban as reported above in Table 11. When comparing the private school sample to the whole sample distribution, rural and urban both showed percentage decreases and reported suburban schools increased.

Table 12

## Frequency Distribution of Pre-Kindergarten Program Type: Private Schools

Program Type	<i>N</i>	Percent
Special Education	0	0.0%
General Education	57	87.7%
Both Special Education and General Education	8	12.3%

According to the comprehensive results of the frequency distribution relating to program type of private pre-kindergarten programs within the state of Indiana, there were more schools that provide general education pre-kindergarten programs as displayed in Table 12. When comparing private to the whole sample distribution, general education programs showed a drastic increase, and programs that offered both special education and general education pre-kindergarten and those who offered special education programs only showed a noticeable decrease in percentages. No private pre-kindergarten programs reported having programming for the sole purpose of special education. The following frequency distribution tables reflect targeted characteristics (gender and educational background) of private pre-kindergarten program directors within the private school programs in the state of Indiana as presented in Table 13.

Table 13

## Frequency Distribution of Director's Gender: Private Schools

Gender	<i>N</i>	Percent
Male	9	13.8%
Female	56	86.2%

Within private pre-kindergarten programs in Indiana, there were more female directors than male directors, as shown in Table 13. When comparing to the whole sample results, there was an increase in the percentage of female directors within private pre-kindergarten programs and a decrease in the percentage of male directors.



Table 14

## Frequency Distribution of Director's Level of Education: Private Schools

Level of Education	<i>N</i>	Percent
Some College	3	5.1%
Bachelor's Degree	10	16.9%
Master's Degree or Other Graduate Degree	46	78.0%
High School Diploma	1	1.5%

As shown in Table 14, more directors of private pre-kindergarten programs within the state in Indiana had a master's degree or other graduate degree. This was reflective of the whole sample, which also reported more directors in the master's or above category. Respondents in the private sector who reported having some college or high school diploma, were reported in both the private sector and the whole sample, indicating that all respondents in these categories were exclusively part of the private sector. Private directors who reported having bachelor's degrees increased slightly, as compared to the whole sample, and those who had obtained master's degrees or other graduate degrees showed a slight decrease.

Table 15 reflects *private* pre-kindergarten program characteristics. A whole sample comparison was also conducted.

Table 15

## Descriptive Data of Private Pre-Kindergarten Programs in Indiana

Program Characteristics	<i>M</i>	<i>SD</i>	Range
Student–Teacher Ratio	10.29	3.24	4 - 24
Instructional Day Minutes	257.53	112.77	90 - 480
Program Longevity	18.67	13.53	1 - 50
Director’s Tenure	6.04	5.14	1 - 27

As evident in Table 15, student–teacher ratio among private pre-kindergarten survey respondents revealed an average ratio of approximately 10.29 students to every one teacher. This mean ratio was reflective of the whole sample distribution. An examination of instructional day minutes found that private pre-kindergarten students, on average, attend school 257.53 minutes, or approximately 4.26 hours. This was a slight increase from the whole sample average of 4 hours and an increase when compared to the public sample at 3.67 hours. Indiana’s reported private pre-kindergarten programs were established for an average of 18.67 years. This is a longer amount of time than the whole sample, which reported an average of 14.75 years. Lastly, an examination of the program directors’ tenure revealed that the average private director had been in charge of their program for 6.04 years, with the longest public director tenure reported was 27 years. This mean score was higher than the whole sample score of 5.64. In summary, the mean for student–teacher ratio decreased slightly when only viewing private schools in comparison to the whole sample. However the three other variables showed increases compared to the whole sample.

Table 16

## Descriptive Data for Survey Responses on Quality Indicators: Private Schools

Quality Indicators	<i>M</i>	<i>SD</i>
Director Background	4.02	1.78
Teacher Background	4.97	1.24
Instructional Time	5.41	1.11
Inclusion of Standards	5.12	1.31
Professional Development	5.45	1.06
Class Size	5.54	.81
Student–Teacher Ratio	5.61	.60
Overall Quality	5.55	.73
Composite Score	5.21	.68

As evident in Table 16, private directors' early childhood background reported the lowest mean of the eight reported categories but was slightly higher than the director background mean of the whole sample. Private program directors' background mean was reported higher than the public school program directors' mean, as well. Private teacher background reported essentially the same mean as the whole sample teacher background category. When looking at the three indicators that directly relate to instructional practice (instructional time, inclusion of standards, and professional development), access to professional development reported the highest mean within the private sector. This differed slightly from the whole samples highest reported means of professional development *and* inclusion of standards and the public samples highest reported mean of inclusion of standards. In the examination of indicators that relate to physical class

attributes, class size and student–teacher ratio showed increased means, as compared to the whole sample. As reflected in the whole sample and the public sector, the private director’s background reported the lowest mean of the quality indicators. Private schools rated their student–teacher ratio as the highest of the seven quality indicators, which was reflective of the whole sample. In summary, teacher background and inclusion of standards reported close to the same means, where all other variables showed increases compared to the whole sample.

In order to gain a better understanding of pre-kindergarten programming in various geographical settings, the following tables take a closer look at the rural, suburban, and urban schools that include pre-kindergarten programming within the sample. The first section looked at how the breakdown of the rural data compared to the whole sample.

According to the comprehensive results of the rural schools frequency distribution relating to school type (public and private pre-kindergarten programs), there were more public rural schools than private rural schools, as shown in Table 17. When compared to the whole sample, rural public schools showed an increased percentage, and the rural private percentage decreased when compared to the whole sample.

Table 17

Frequency Distribution of School Type: Rural Schools Only

School Type	<i>N</i>	Percent
Public	25	54.3%
Private	21	45.7%

According to the comprehensive results of the frequency distribution relating to program type of rural pre-kindergarten programs within the state of Indiana, there were more rural schools that provide general education programs. This representation can be found in Table 18. When comparing rural to the whole sample distribution found earlier in the chapter, special education programs and those that offered general education exclusively showed a slight increase in percentage, but programs offering both special education and general education pre-kindergarten programs showed a decrease in percentage. The following frequency distribution tables (Tables 19 and 20) reflect targeted characteristics (gender and educational background) of pre-kindergarten program directors within the rural school programs within the state of Indiana.

Table 18

Frequency Distribution of Pre-Kindergarten Program Location: Rural Schools

Program Type	<i>N</i>	Percent
Special Education	9	19.1%
General Education	26	55.3%
Both Special Education and General Education	12	25.5%

Table 19

Frequency Distribution of Director's Gender: Rural Schools

Gender	<i>N</i>	Percent
Male	13	27.75
Female	34	72.35

Within rural pre-kindergarten programs in Indiana, there were more female directors than there were male directors as shown in Table 19. When comparing to the whole sample results, there was a slight decrease in the percentage of female directors and a slight increase in the percentage of male directors. Male directors were more common among rural settings than in other settings.

Table 20

## Frequency Distribution of Director's Level of Education: Rural Schools

Level of Education	<i>N</i>	Percent
Some College	1	2.2%
Bachelor's Degree	7	15.2%
Master's Degree or Other Graduate Degree	38	82.6%

As shown in Table 20, more directors of rural pre-kindergarten programs within the state of Indiana had master's degrees or other graduate degrees. This was reflective of the whole sample for both public and private samplings. Rural directors who reported having bachelor's degrees and some college decreased slightly in percentage, as compared to the whole sample. Those who had obtained master's degrees or other graduate degrees showed a slight increase in percentage in this comparison. Table 21 reflects rural pre-kindergarten program characteristics.

Table 21

## Descriptive Data of Rural Pre-Kindergarten Programs in Indiana

Program Characteristics	<i>M</i>	<i>SD</i>	Range
Student–Teacher Ratio	11.04	3.77	5 - 18
Instructional Day Minutes	214.36	96.56	90 - 420
Program Longevity	15.36	11.03	2 - 49
Director’s Tenure	5.81	4.38	1 - 21

As evident in Table 21 above, student–teacher ratio among rural pre-kindergarten survey respondents revealed an average ratio of approximately 11.04 students to every 1 teacher. This mean ratio was slightly higher than the whole sample distribution of 10.81 to 1. An examination of instructional day minutes found that rural pre-kindergarten students, on average, attend school 214.36 minutes, or approximately 3.57 hours. This was a slight decrease from the whole sample’s average of approximately 4 hours. Indiana’s reported rural pre-kindergarten programs had been established for an average of 15.36 years. This was an increase compared to the whole sample program longevity mean of 14.75. Lastly, an examination of the program directors’ tenure revealed that the average rural director had been in charge of their program for 5.81 years, with the longest public director tenure reported as 21 years. This mean score was slightly higher than the whole sample score of 5.64. In summary, the mean for instructional minutes decreased in percentage when only viewing rural school pre-kindergarten programming, and the other three variables showed an increase in percentages, compared to the whole sample.

As evident in Table 22, rural director early childhood background reported the lowest mean of the eight reported categories but was slightly higher than the director background of the

whole sample. Rural teacher background mean reported higher than the whole sample teacher background category. When looking at the three indicators that directly relate to instructional practice (instructional time, inclusion of standards, and professional development), instructional time, and professional development reported a slightly higher mean than the inclusion of standards. This was similar to the whole samples highest reported means of professional development and inclusion of standards. In the examination of indicators that relate to physical class attributes, class size, and student–teacher ratio showed increased means as compared to the whole sample. As reflected in the whole sample for public and private sectors, the rural directors’ background reported the lowest mean. Rural schools rated their student–teacher ratios as the highest of the seven quality indicators which was reflective of the whole sample. When making comparisons to the whole sample, all quality indicator categories showed increased means. The overall quality mean for rural schools was the second highest falling after the private schools overall quality mean of 5.55.



Table 22

## Descriptive Data for Survey Responses on Quality Indicators: Rural Schools

Quality Indicators	<i>M</i>	<i>SD</i>
Director Background	4.06	1.69
Teacher Background	5.06	1.17
Instructional Time	5.17	1.31
Inclusion of Standards	5.15	1.05
Professional Development	5.19	1.26
Class Size	5.28	1.07
Student–Teacher Ratio	5.30	1.04
Overall Quality	5.53	.65
Composite Score	5.09	.71

Tables 23, 24, 25, and 26 reflect a closer look at the suburban schools within the sample.

In order to gain deeper insight, this section looked at how the breakdown of suburban data compares to the whole sample.

Table 23

## Frequency Distribution of School Type: Suburban Schools Only

School Type	<i>N</i>	Percent
Public	14	35.0%
Private	26	65.0%

According to the comprehensive results of the suburban schools frequency distribution relating to school type (public and private pre-kindergarten programs), there were more private suburban schools than public suburban schools, as shown in Table 23. Compared to the whole sample, suburban public schools showed a percentage decrease and suburban private percentage increased.

Table 24

Frequency Distribution of Pre-Kindergarten Program Location: Suburban Schools

Program Type	<i>N</i>	Percent
Special Education	3	7.5%
General Education	23	57.5%
Both Special Education and General Education	14	35.0%

According to the comprehensive results of the frequency distribution relating to program type of suburban pre-kindergarten programs within the state of Indiana, there were more suburban schools that provide general education programs. This representation can be found in Table 24. When comparing suburban to the whole sample distribution found early in the chapter, special education programs showed a decrease in percentage, and programs that offered both special education and general education pre-kindergarten and those who offered general education programs exclusively both showed increased percentages. Table 25 reflects targeted characteristics (gender and educational background) of pre-kindergarten program directors within the suburban school programs within the state of Indiana.

Within suburban pre-kindergarten programs in Indiana, there were more female directors than male directors as shown in Table 25. When comparing to the whole sample results, there

was an increase in the percentage of female directors and a decrease in the percentage of male directors within the suburban sector.

Table 25

*Frequency Distribution of Director's Gender: Suburban Schools*

Gender	<i>N</i>	Percent
Male	8	20.0%
Female	32	80.0%

More directors in suburban pre-kindergarten programs within the state of Indiana had master's degrees or other graduate degrees as shown in Table 26. This was reflective of the whole sample. Suburban directors who reported having bachelor's degrees, some college, or at least high school diplomas increased in percentage against the whole sample, and those who obtained master's degrees or other graduate degrees showed a slight decrease in percentage.

Table 27 reflects suburban pre-kindergarten program characteristics.

Table 26

*Frequency Distribution of Director's Level of Education: Suburban Schools*

Level of Education	<i>N</i>	Percent
Some College	2	5.1%
Bachelor's Degree	6	15.4%
Master's Degree or Other Graduate Degree	30	76.9%
High School Diploma	1	2.6%

Table 27

*Descriptive Data of Suburban Pre-Kindergarten Programs in Indiana*

Program Characteristics	<i>M</i>	<i>SD</i>	Range
Student–Teacher Ratio	9.25	2.91	5 - 16
Instructional Day Minutes	236.55	101.34	150 - 450
Program Longevity	13.98	12.89	1 - 50
Director’s Tenure	5.18	3.93	1 - 18

As evident in Table 27, student–teacher ratio among suburban pre-kindergarten survey respondents revealed an average ratio of approximately 9.25 students to every 1 teacher. This mean ratio was lower than the whole sample distribution of 10.81 to 1 and was the lowest mean ratio found when comparing all independent variable groups of public, private, rural, suburban, and urban. An examination of instructional day minutes found that suburban pre-kindergarten students, on average, attend school 236.55 minutes, or approximately 3.94 hours. This was a very slight decrease from the whole sample’s average of approximately 4 hours. Indiana’s reported suburban pre-kindergarten programs had been established for an average of 13.98 years. This was slightly less than the whole sample program longevity mean. Lastly, an examination of the program directors’ tenure revealed that the average suburban director had been in charge of his or her program for 5.18 years, with the longest suburban director tenure reported at 18 years. This mean score was slightly lower than the whole sample director tenure score of 5.64. In summary, the mean for all four of the variables discussed in this paragraph showed slight decreases compared to the whole sample.

Suburban director background reported the lowest mean of the eight reported categories, as seen in Table 28, but was higher than the director background mean of the whole sample. Suburban teacher background mean reported lower than the whole sample teacher background mean of 4.98. When looking at the three indicators that directly relate to instructional practice (instructional time, inclusion of standards, and professional development), professional development reported the highest mean within the suburban sector. This was similar to the whole sample, which reported both professional development and inclusion of standards as the highest means within this grouping. In the examination of indicators that relate to physical class attributes, class size and student–teacher ratio showed increased means as compared to the whole sample. As reflected in the whole sample and all other breakout groups, director’s background reported the lowest mean compared to all other quality indicators. Suburban schools rated access to professional development as the highest of the seven quality indicators. When making comparisons to the whole sample, all quality indicator categories showed increases, except for teacher background.

Table 28

*Descriptive Data for Survey Responses on Quality Indicators: Suburban Schools*

Quality Indicators	<i>M</i>	<i>SD</i>
Director Background	4.13	1.59
Teacher Background	4.95	1.11
Instructional Time	5.00	1.28
Inclusion of Standards	5.15	1.23
Professional Development	5.40	1.01
Class Size	5.30	1.02
Student–Teacher Ratio	5.38	.74
Overall Quality	5.33	.83
Composite Score	5.08	.63

Tables 29, 30, 31, and 32 contain statistics of the urban schools within the sample. In order to gain deeper insight, this section looked at how the breakdown of urban data compared to the whole sample. According to the comprehensive results of the urban schools frequency distribution relating to school type (public and private pre-kindergarten programs), there were more public urban schools than private urban schools as presented in Table 29. Compared to the whole sample, urban public schools showed a percentage increase, and the urban private percentage decreased.

Table 29

*Frequency Distribution of School Type: Urban Schools Only*

School Type	<i>N</i>	Percent
Public	22	55.0%
Private	18	45.0%

According to the comprehensive results of the frequency distribution relating to program type of urban pre-kindergarten programs within the state of Indiana, there were more schools that provide general education programs. This representation can be found in Table 30. When comparing urban to the whole sample distribution found at the beginning of the chapter, special education programs showed an increase in percentage, and programs that offered both special education and general education pre-kindergarten and those who offered general education programs exclusively, both showed a decrease in their percentages. Tables 31 and 32 reflect targeted characteristics (gender and educational background) of pre-kindergarten program directors within the urban school programs in the state of Indiana.

Table 30

*Frequency Distribution of Pre-Kindergarten Program Location: Urban Schools*

Program Type	<i>N</i>	Percent
Special Education	8	20.5%
General Education	20	51.3%
Both Special Education and General Education	11	28.2%

Within urban pre-kindergarten programs in Indiana, there were more female directors than male directors as shown in Table 31. When comparing to the whole sample results, there was a decrease in the percentage of female directors and an increase in the percentage of male directors within the urban sector.

Table 31

*Frequency Distribution of Director's Gender: Urban Schools*

Gender	<i>N</i>	Percent
Male	12	30.0%
Female	28	70.0%

More directors in urban pre-kindergarten programs within the state of Indiana had master's degrees or other graduate degrees as shown in Table 32. This was reflective of the whole sample. Urban directors who reported having master's degrees showed an increased percentage when compared to the whole sample, and those who reported having bachelor's degrees or some college showed a decrease in percentage. Table 33 reflects urban pre-kindergarten program characteristics.

Table 32

*Frequency Distribution of Director's Level of Education: Urban Schools*

Level of Education	<i>N</i>	Percent
Some College	0	0.0%
Bachelor's Degree	6	15.0%
Master's Degree or Other Graduate Degree	34	85.0%



As evident in Table 33, student–teacher ratio among urban pre-kindergarten survey respondents revealed an average ratio of approximately 12.13 students to every 1 teacher. This mean ratio was higher than the whole sample distribution of 10.81 to one. An examination of instructional day minutes found that urban pre-kindergarten students, on average, attend school 272.40 minutes, or approximately 4.54 hours. This was an increase from the whole sample’s average of approximately 4 hours. Indiana’s reported urban pre-kindergarten programs had been established for an average of 15.15 years. This was a slight increase from the whole sample program longevity mean of 14.75. Last, an examination of the program directors’ tenure revealed that the average urban director had been in charge of their program for 6.04 years with the longest urban director tenure reported as 27 years. This mean score was higher than the whole sample director tenure score of 5.64. In summary, the means for all urban program characteristics increased compared to the whole sample.

Table 33

*Descriptive Data of Urban Pre-Kindergarten Programs in Indiana*

Program Characteristics	<i>M</i>	<i>SD</i>	Range
Student–Teacher Ratio	12.13	3.88	4 - 24
Instructional Day Minutes	272.40	109.21	150 - 480
Program Longevity	15.15	12.26	1 - 50
Director’s Tenure	6.04	5.63	1 - 27

Urban director background reported the lowest mean of the eight reported categories, as seen above in Table 34 and was lower than the director background of the whole sample. Urban teacher background mean reported lower than the whole sample teacher background of 4.98.

When looking at the three indicators that directly relate to instructional practice (instructional time, inclusion of standards, and professional development), inclusion of standards reported the highest mean within the urban sector. This was similar to the whole sample, which reported access to professional development *and* inclusion of standards as its highest means within this grouping. In the examination of indicators that relate to physical class attributes, urban class size and student-teacher ratio showed decreased means as compared to the whole sample. As reflected in the whole sample and all other breakout groups, director's background reported the lowest mean compared to all other quality indicators. Urban schools rated inclusion of standards as the highest of the seven quality indicators. When making comparisons to the whole sample, all quality indicator categories showed decreases along with the overall quality mean.

Table 34

*Descriptive Data for Survey Responses on Quality Indicators: Urban Schools*

Quality Indicators	<i>M</i>	<i>SD</i>
Director Background	3.63	1.56
Teacher Background	4.90	1.53
Instructional Time	4.63	1.53
Inclusion of Standards	5.08	1.54
Professional Development	4.77	1.75
Class Size	4.75	1.37
Student–Teacher Ratio	4.75	1.39
Overall Quality	5.10	1.26
Composite Score	4.70	1.01

### Testing for Null Hypotheses

The remainder of this chapter focuses on providing answers to the inferential research questions provided within this study. Tables 35 and 36 contain statistics of public and private schools based on school location. Table 37 shows statistical data that reflects the 2X3 Factorial AVOVA that was conducted.

Table 35

*Sample Size, Mean, and Standard Deviation of Public Pre-Kindergarten Programs Based on School Location*

School Location	<i>N</i>	<i>M</i>	<i>SD</i>
Rural	25	5.11	.852
Suburban	12	5.14	.807
Urban	17	4.18	1.399

Table 36

*Sample Size, Mean, and Standard Deviation of Private Pre-Kindergarten Programs Based on School Location*

School Location	<i>N</i>	<i>M</i>	<i>SD</i>
Rural	19	5.21	.582
Suburban	24	5.31	.564
Urban	16	5.42	.821

Each assumption for a 2 X 3 factorial ANOVA was examined to determine the validity of the inferential test results. The assumption of normality was violated with significant Shapiro-Wilk test ( $p < .05$ ). This indicated that the data's distribution was not equal to a normal distribution. The assumption of homogeneity of variance was violated with a significant Levene's test of error,  $F(5, 107) = 6.327, p < .001$ .

Due to the violations of the assumption of normality and the assumption of homogeneity of variance, the dependent variable (composite score) was transformed using a logarithmic transformation. This transformation was the appropriate choice because the dependent variable was strongly negatively skewed. To apply a logarithmic transformation, the largest composite score was found within the data set (6.0) and then added 1 to its value. Each score then needed to be subtracted from this value and the square root of the scores taken, in order to stabilize the variance. This allowed for the factorial ANOVA to be conducted without the potential of type 1 error rate inflation occurring due to the above assumption violations. After the transformation was completed, the assumption of normality and assumption of homogeneity of variance were both met. The Shapiro-Wilk test and Levene's test both had  $p > .05$ . As determined in Chapter 3, if significance was determined for Null Hypothesis 1, the second and third null hypotheses tests would not be conducted. The reason for not running the test of main effects was due to significant interaction indicating that the impact that one factor had on the dependent variable depended on the level of the other factor.

Table 37

*2 x 3 ANOVA Values, Significance Levels, and Effect Size*

	<i>F</i>	Sig	Partial Eta Squared
School Type	7.412	.008	.065
School Location	1.107	.334	.020
School Type*School Location	4.702	.011	.081

The null hypothesis that examined whether significant interaction between school type and school location, on the composite score of quality, was rejected with  $F(2, 113) = 4.702$ ,  $p = .011$ , two-tailed, partial eta squared = .081, as displayed in Table 37 above. This meant that the effect of school type on composite score depended on school location. The partial eta-squared demonstrated the effect size the independent variables had on the dependent variable by examining the proportion of the effect plus error of variance that was attributed to the effect. Through examination of an interaction graph, it was evident that significant interaction had occurred as lines were disordinal.

In order to determine where the significant differences laid, the tests of simple main effects of school type (public, private) and simple main effects of school location (rural, suburban, or urban) were run. Due to multiple post-hoc tests being run within each of these tests, the Bonferroni adjustment was utilized to reduce a potential increase in type I error rate inflation that is often associated with running multiple post-hoc tests. Within the simple main effects of school type, public rural and public suburban scored significantly lower on the composite score than public urban with  $p = .012$  and  $p = .036$ . Both tests were two-tailed. Within the test of

simple main effects of school location, urban public pre-kindergarten programs scored significantly higher on the composite score than urban private schools with  $p < .001$ , two-tailed.

### **Emergent Question**

During the examination of the descriptive data from this sample, an emergent question became apparent within this study. Do teacher–student ratio, length of instructional day, pre-school type (public/private), or school location (rural, suburban, or urban) serve as predictors of the quality composite score? The assumptions for multiple regression needed to be examined to ensure that the data gave accurate information. The assumption of linearity was met in the regression with the residuals forming horizontal bands after plotting the studentized residuals against the unstandardized predicted values. The assumption of no multicollinearity was met due to the tolerance levels for all of the predictors falling well above the .20 minimum that was needed for this assumption. The tolerance levels for the predictors in this regression ranged from .932 to .970, which were all well above the .20 level.

During the examination of the assumption of independence of observations, there was no evidence of a violation due to a Durbin-Watson score of 1.851, which was near the acceptable value of 2.0. The normal probability plot provided no evidence of a violation of the assumption of normality as the distribution of residuals were normally distributed. The assumption of homoscedasticity was met as the residuals were equal for all values on the predicted dependent variable, as evident through examination of the studentized residuals against the unstandardized predicted values plot. The residuals on this plot were equally spread over the predicted values of the dependent variable.

The multiple correlation coefficient ( $R = .326$ ) demonstrated a moderate relationship between the criterion variable and the predictor variables. The coefficient of multiple

determination ( $R^2 = .106$ ) indicated that 10.6% of the variance within the quality composite score could be explained by the group of predictors. The adjusted coefficient of multiple determination (Adjusted  $R^2 = .073$ ) indicated that 7.3% of the variance within quality composite score could be explained by the set of predictors, when sample size and number of predictors were accounted for. The standard error of the estimate demonstrated the variability within the model by examining the average residual distance from the line of best fit. At least one of the predictors within the regression model had a strong enough linear relationship with the quality composite score to serve as a predictor, as evident in the ANOVA model statistics with  $F(4, 108) = 3.206, p = .016$ .

After examination of the unstandardized and standardized partial regression coefficients found in Table 38, it was determined that student–teacher ratio ( $t = -2.11, p = .037$ ) and school type ( $t = -2.24, p = .027$ ) both served as significant predictors of the quality composite score. The unstandardized partial regression coefficient showed that for every one student increase in that ratio, it was expected to decrease the quality composite score by .010, holding all other variables constant. Also, there was a predicted decrease of .075 when moving from public to private school type, when holding all other variables constant. The standardized partial regression coefficient (beta weight) allowed the demonstration of the impact each predictor variable had on the criterion variable through the use of  $z$  scores, which put each predictor variable on the same metric. School type, with the standardized partial regression coefficient of .201, had the largest impact on the quality composite score with student–teacher ratio being the only other significant predictor having a beta weight of -.195.

Table 38

*Coefficients for Pre-Kindergarten Program Quality Indicators*

Independent Variables	<i>B</i>	<i>SE</i>	$\beta$	<i>t</i>	Sig.
What is the student–teacher ratio in your prekindergarten program?	.010	.005	-.195	-2.111	.037
What is the length of your pre-kindergarten’s instructional day?	.000	.000	-.008	-.080	.936
What type pre-kindergarten are you considered? (Public/Private)	.075	.034	.201	-2.241	.027
Which demographic area is your pre-kindergarten located within? (Rural, Suburban, Urban)	.023	.20	.107	1.143	.256

**Summary**

In summary, the inferential testing concluded that urban public pre-kindergarten schools scored significantly higher on the composite score than urban private pre-kindergarten schools. Also, in public schools, rural and suburban schools scored significantly less than urban schools on the composite score. In the emerging question, it was determined that student–teacher ratio and pre-kindergarten type (public/private) served as significant predictors of the pre-kindergarten composite score. The implications, recommendations, and suggestions for further research are contained in Chapter 5.



## CHAPTER 5

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The final chapter of this study is divided into four sections: summary, results, conclusions, and recommendations for further study. The summary section includes the purpose of the study, how the design of the study was formulated, and who might benefit from the results. The results section provides a summary of the data as reported in Chapter 4. The conclusion section provides an interpretation of the data results. Last, the recommendation section provides suggestions for further research on this topic.

#### **Summary**

The purpose of this study was to examine the current state of pre-kindergarten classrooms in the state of Indiana through the perspectives of public and private pre-kindergarten program directors. This study explored six quality standards or indicators as defined by national organizations. These quality indicators included teacher qualifications, length of day, inclusion of curricular standards, access to professional development, class size, and student–teacher ratios. The survey also gathered information on director qualifications and overall program quality. The directors were asked their perceptions as to how they view the quality of their pre-kindergarten program based on these indicators. The study was conducted to investigate the following questions:

1. What is the reported quality of Indiana pre-kindergartens, based on the perceptions of program directors?
2. Is there a significant interaction between school type and school location on the pre-kindergarten quality composite score?
3. Is there a significant difference between school types on the pre-kindergarten quality composite score?
4. Is there a significant difference between school locations on the pre-kindergarten quality composite score?

Research supports that quality pre-kindergarten programming can provide vast benefits for a society, including increased academic success, decreased drop-out rates, and long-term benefits such as reduction in crime rates and increased earning potential (Frede & Barnett, 2011). However, not all states within our nation have chosen to institute this potentially vital programming. In 2011, only 39 of the 50 states provided some type of state-funded pre-kindergarten (Barnett et al., 2011). Although this is a step in the right direction, the literature revealed that the quality of programming can vary greatly throughout these states. Indiana is one of the 11 states that have not provided state-funded pre-kindergarten to date. As this topic continues to gain esteem in both social and political circles, this study sought to provide insight into the pre-kindergarten programs that do exist in Indiana and what quality factors may be encompassed within them through the perspectives of program directors. This study also sought to examine pre-kindergarten types (public/private) and locations (rural, suburban, and urban) and how these variables may or may not impact perceived program quality.

As Indiana continues to explore the possibility of state-funded pre-kindergarten, this research may benefit policymakers in understanding what quality measures should be present

and how quality is perceived within the State. The study results may also be useful to current pre-kindergarten program directors and elementary school principals who seek to improve or expand their current pre-kindergarten programming options. The overarching purpose of this study was to provide an awareness of the potential benefits that quality pre-kindergarten programming could yield for the future citizens of Indiana as a whole and if perceived quality exists to some degree.

### **Results**

The research questions and corresponding statistical findings from this study can be found in Chapter 4. The first research question (What is the reported quality of Indiana pre-kindergartens, based on the perceptions of program directors?) was designed to gather a descriptive snapshot of pre-kindergarten programming within Indiana. The first cluster of questions within the survey, which were driven by quality indicators, pointed to the director's level of education and the level of early childhood background attained by both the director and his or her teaching staff. The data revealed that the vast majority of pre-kindergarten directors in Indiana have at least master's degrees or other graduate degrees. This is encouraging news and points to a highly educated populace of pre-kindergarten leaders. When considering the public versus private directors' level of education, public directors had more advanced degrees (81.7%) than private directors (78.0%). This may be due, in part, to the *highly qualified* accountability measures placed on public school entities. The state of Indiana, at this time, does not regulate qualifications for private setting directors. Although educational requirements vary by state, most employers look for "candidates who have a minimum of a bachelor's degree in early childhood education or a related field" (Educational Portal, 2013, para. 1). Early education degree programs and continuing education opportunities continue to be vital as pre-kindergarten

expansion continues. In fact, according to the U.S. Bureau of Labor Statistics (2013), “employment of preschool and childcare center directors is expected to grow by 25% from 2010 to 2020, faster than the average for all occupations. Continued demand for preschool programs and childcare is expected to contribute to [this] growth” (para. 1).

Although the pre-kindergarten leaders who responded to the survey had a high level of education, they consistently rated their early education background as the lowest mean score compared to all other reported quality measures. When examining the independent variables of school type (public/private) and school location (rural, suburban, and urban), the directors who rated their early education background the lowest were located in urban and public settings. One reason for this may be that public program directors also play the role of elementary principal or district program director. In both cases, an early childhood background is not a requirement for job attainment. These directors may find themselves directing pre-kindergarten programs by default or in addition to their primary roles.

Just as consistently, directors rated their pre-kindergarten teaching staff with a higher level of early childhood background. Although the director may not have a strong background in early childhood education, a priority may be placed on hiring those who do have a strong background in working with young children within the classroom. Also, federally funded programs require highly qualified, certified classroom teachers within the public school systems. Many pre-kindergartens in Indiana are funded through these federal sources, such as Title I and IDEA.

Pre-kindergarten directors in the state of Indiana were primarily women, according to this sample. Within the whole group sample of surveyed participants, there was a near 3 to 1 ratio of female versus male directors. One interesting dynamic was the fact that there are a higher

percentage of male directors in the public versus the private setting. Conversely, there are a higher percentage of female directors in private versus the public settings. Once again, this may be due to the high percentage of male public elementary principals who oversee pre-kindergarten programming within their buildings. This finding supports the literature found in Chapter 2 where Kagan et al. (2008) gave a detailed picture of the early childhood teaching workforce, describing it as “predominately White women in their late 30s and early 40s” (p. 23).

The second cluster of survey questions gathered data on program dynamics such as student–teacher ratio, instructional minutes, program longevity measured in years, and the director’s tenure measured in years. When comparing these characteristics between public and private school settings, it was revealed that private student–teacher ratios are smaller and instructional days are longer. The private programs have been established for a longer period of time and the private director’s tenure was longer than that of the public director. One explanation for this depiction may be due to the role the private sector has played in the past in providing early childhood education in our communities. It is just in recent years that public schools began playing a larger role in offering pre-kindergarten services, especially for general education purposes. Private schools, such as faith-based establishments, have played a pivotal role in educating our young children in the past, which supports the longevity reported within our sample data. Many private settings also provide child-care options for children, which may account for the longer instructional day. According to Hustedt and Barnett (2011), private pre-kindergarten programs continue to play a large role in providing services for various states and are even beginning to receive some state funding sources.

Private providers have played the vital role of expanding access in states that have established rapid timelines for pre-k implementation or expansion, such as New Jersey

(to comply with a court order) and Florida (to comply with a constitutional amendment).

In such cases, high rates of participation by private providers enabled states to increase the number of children attending state pre-k by using existing facilities and staff and taking advantage of the private sector's ability to grow quickly. (Hustedt & Barnett, 2011, para. 3)

Additionally, the study looked at the type of programming Indiana's pre-kindergarten classrooms provide. Program type was described as general education, both general education and special education, or programs that offer special education programming exclusively. It was revealed that most private pre-kindergartens offer general education pre-kindergarten programs only and public entities include more programs for only special education populations. In fact, no private school reported providing programming exclusively for special education students. This is reflective of the fact that public schools provide special education programming to private schools, as directed by the national legislation known as the Individuals with Disabilities Education Improvement Act (Indiana Administrative Code, 2012b). As pre-kindergarten continues to evolve and expand in the next decade within Indiana, this distinction may be blurred somewhat due to the potential of private schools receiving state and federal dollars as a subsidy to stimulate greater pre-kindergarten access.

The last three research questions for this study reflected inferential hypotheses. Following a significant interaction among school type and location within a 2 x 3 factorial ANOVA, the test of simple main effects were run. Within the test of simple main effects of school type (public/private), public rural and public suburban scored significantly lower than public urban on the composite score. Within the test of simple main effects of school location (rural, suburban, and urban), urban public pre-kindergarten programs scored significantly higher

on the composite score than urban private schools. This translated to directors of public urban schools reported a higher quality rating than suburban and rural pre-kindergarten programs based on the quality composite score. When looking at current public urban schools, one possible explanation for these results is the amount of federal dollars that flow into these schools for the purpose of turnaround reform. Many research studies and literature reviews point to the fact that urban schools have a higher percentage of poverty. Federal programs, such as Title I: Improving the Academic Achievement of the Disadvantaged, provide the highest level of funding to public schools that have a high rate of poverty. Common programs that are developed with the use of this money include early intervention programming, such as pre-kindergarten. Because these high poverty schools are awarded a significant amount of funding resources, they are able to employ highly qualified pre-kindergarten teachers as well as instructional support positions such as literacy coaches.

Another factor that may affect the perceived high quality of urban public schools is the amount of *state* dollars that are awarded to high poverty, public urban districts within the state of Indiana. Within the current funding formula that is utilized to calculate per pupil funding designations, otherwise known as average daily membership (ADM) funding calculations, there is a built-in mechanism that grants high poverty, urban districts more allotted dollars per student within Indiana. A similar argument can be made that more dollars can fund highly qualified teachers, instructional support personnel, lower class sizes, and other factors that could impact the perceived higher quality composite score rating.

This research study revealed that public urban pre-kindergarten programs had, on average, a longer instructional day measured in minutes. When you compare the length of day mean of the urban settings to that of rural and suburban, urban children are going, on average,

almost one-hour more than rural students and approximately one half hour more than suburban students. As presented in the literature review, national experts identify pre-kindergarten *length of day* as a quality predictor for pre-kindergarten programs. This points to another possible justification for the higher quality rating within the public urban setting.

When examining the descriptive data from this sample, an emergent question became apparent within this study. Do student–teacher ratio, length of instructional day, pre-school type (public/private), or school location (urban, suburban, and rural) serve as predictors of the quality composite score? For this research question, a multiple regression model was utilized to determine the impact of the predictor variables. It was determined that student–teacher ratio and school type (public/private) both served as significant predictors of the quality composite score. This tells the reader, as student–teacher ratio increases, the perceived pre-kindergarten quality decreases. These results confirm the perception that many educators have regarding student-teacher ratios. Lower class sizes or lower student–teacher ratios are often times associated with a more conducive environment for learning because of the one-on-one attention that can be given to students. This is especially important when working with young students who require more adult interaction. This research finding is supported by the directors’ comments provided within the open-ended section of this research survey. Some of these key quotes are provided.

Respondent #118 said,

We feel as though 15 students to one teacher and one assistant allows the best one to one time from an adult, takes care of personal growth needs, and allows for quality time for assessment and small group instruction. Fifteen to one maintains teacher sanity too where little bodies are rambunctious!!



According to respondent #79, “We have 20 students and 1 teacher and 1 IA (instructional assistant). The students have increased skills in multiple areas. Any more students and I feel that all would suffer.” Respondent #110 provided, “I would prefer to have class size of 12 students (maximum). This would better help us to ensure that we are able to provide more individualized instruction for students who require more intensive intervention.”

Although many state-funded pre-kindergarten programs do not mandate class size or student–teacher ratios, many attempt to follow the guidelines set forth by the American Public Health Association (APHA), the American Academy of Pediatrics, and the recommendations of the National Association for the Education of Young Children for 3- and 4-year-olds. Class sizes of no more than 20 children and ratios of no more than 10 students per teacher are recommended (Barnett, Schulman, & Shore, 2004). Several research studies have been conducted on preschool class size and student-teacher ratios.

In sum, preschool research strongly indicates that smaller class sizes are associated with greater educational effectiveness and other benefits. Even within studies that focus only on preschool children, the effects of class size have been found to be larger for younger children. Moreover, only those programs with small effective class sizes (15 or fewer) and high ratios of teachers to children have been found to produce very large educational benefits. (Barnett et al., 2004, p. 5)

Within the multiple regression output used in this study, it was also revealed that the composite scores showed a decrease when moving from the public to private school variable. This tells the reader that the pre-kindergarten director’s perceived quality is less within the private setting than in the public setting, based on the composite quality score. One rationale

behind this could be that public schools are held accountable to a different degree under the current No Child Left Behind regulations set forth by the U.S. Department of Education. Public schools are in tune to the importance of quality indicators such as *inclusion of standards*, *teacher quality*, and access to *professional development*. Public school directors may rate their programs higher due to the increased attention placed on these measures within their school improvement goals. There is little research that supports higher quality within the public pre-kindergarten setting over a private setting. What research does support is that quality matters. Although access to pre-kindergarten is on the rise within the United States, Barnett et al. (2011) reminded leaders that the “research clearly shows that only high-quality pre-k programs significantly help prepare children for school” (p. 4). As states continue to gain ground in providing equal access to pre-kindergarten education, researchers agree that quality measures should be in place to ensure the return on the investment is realized (Wesley & Buysse, 2010).

### **Conclusions**

There are many valuable conclusions that can be derived from this research study. One notable finding is the high percentage of pre-kindergarten program directors who have obtained at least master’s degrees or other graduate degrees. This points to a highly educated and capable group of early childhood educational leaders. The state of Indiana should be proud that these individuals not only chose to dedicate their careers to early learners, but also to hold themselves to a high standard within the realm of development and professional growth.

Although pre-kindergarten program directors are highly educated in general, they consistently rated their own background knowledge of early childhood education as one of the lowest ratings amongst all other survey categories. This points to a need for increased professional development and continuing education courses for pre-kindergarten program

directors, especially in the public settings where many elementary principals find themselves leading newly launched pre-kindergarten programs with no additional training. As shown in Chapter 2, organizations such as NAESP recognize this need and have attempted to provide resources that help to ensure quality programming and interagency connections within the public school setting. Moving forward as a state and nation in providing quality programming for our youngest learners, educational leaders, higher education institutions, and political leaders should consider raising the minimum qualifications for those leaders of early education programming. Also found in the literature review section of this study, federally-funded Head Start programs do not require their leaders to have bachelor's degrees in the field of early education. Legislators are encouraging that by September 30, 2013, all education coordinators within nationwide center-based Head Start programs must have baccalaureate or advanced degrees in early childhood education or baccalaureate or advanced degrees in any subject and coursework equivalent to a major relating to early childhood education with experience teaching pre-kindergarten-age children (U.S. Department of Health and Human Services, n.d.). Although this is a step in the right direction, training focused on leading early learners within all public and private settings should remain a priority in order to elevate this nation's overall pre-kindergarten program quality.

Another notable finding within this research study was the perceived level of *overall* program quality. Directors across variable groups consistently rated overall program quality as one of their highest categories. Average scores ranged for 5.10 to 5.55 on a 6-point scale across groups. Respondents commented on this perception with quotes such as

- Students are very prepared for kindergarten and the program is a highly sought after program in our area. (Respondent #60)

- Preschool [has a] literacy based curriculum that promotes language development and literacy skills among preschool children. All three teachers have early childhood education degrees and two have special education degrees. Our preschool classrooms stress the importance of teaching the whole student, social and emotional development, teacher-child relationships, and home-school connections. (Respondent #88)
- Our children are well prepared for starting kindergarten, as stated by our district's kindergarten center. Parents are required to participate in a home visit and Family Literacy Night, which alternate monthly. Teachers have 4-year degrees in early childhood education and/or elementary education. Aides are well trained and highly motivated. The program director is also a certified school counselor and works frequently with families. (Respondent #54)
- Children are learning and have basic skills needed to be successful in kindergarten. (Respondent #93)

I feel that the perception of overall quality could be verified or strengthened by a prospective accreditation process, such as those offered by the National Association for the Education of Young Children (NAEYC). Only one respondent out of the 127 collected surveys referred to accreditation status. “[The program is] accredited by NAEYC; PTQ (Pathways to Quality) level 4; (Quality is also measured by) annual survey results from families of children who’ve graduated and are kindergartners (and) academic success of former students” (Respondent 98). I recommend that the state of Indiana find ways to encourage pre-kindergarten programs to go through an accreditation process in order to strengthen awareness and verify the perceptions of high quality programming.

Last, it is worthy to once again highlight the finding on the impact student-teacher ratios had on the measurement of quality. I feel that it is important to strongly consider this structural consideration during the development phase of new programs. As endorsed by national researchers, it is important to consider the physical attributes of a classroom, such as class size, student-teacher ratio and physical space. As programming strives to improve or expand within the state of Indiana, it is imperative that these dynamics be considered and not overlooked in an effort to cut corners with funding. “Common sense suggests that smaller classes and higher staff to child ratios are better for young children, allowing more individual attention, reducing the time and effort devoted to classroom management, and reducing the number of stressful interactions” (Barnett et al., 2004, p. 1).

### **Recommendations for Further Study**

This study attempted to gather data on Indiana pre-kindergartens through the perspectives of public and private pre-kindergarten directors. One recommendation for further research would be to conduct a study on pre-kindergarten quality from the perspectives of the pre-kindergarten classroom teachers and possibly the parents of pre-kindergarten students. A comparison to the results of this study may be advantageous in strengthening the true picture of pre-kindergarten quality within Indiana. Other valuable studies might include those on perceived pre-kindergarten quality based on the perspectives of elementary school personnel, such as kindergarten teachers and elementary school principals who receive pre-kindergarten students from outside facilities or programs. Some elementary schools do not include pre-kindergarten programming, which often creates disconnect between early childhood programs and the K-12 public or private systems. A study such as this may reveal areas of strength and areas of needed improvement through the eyes of kindergarten teachers and their administrators.

This study was a quantitative study that strived to gain a descriptive and inferential understanding of pre-kindergarten programs in Indiana. A recommendation for further study would also include studies of a qualitative nature. I believe that rich data could be gathered through observations and interviews within the pre-kindergarten classrooms throughout the state. Once again, qualitative data could strengthen the validity and reliability of the director's perceived quality gathered in this study.

Last, further research is recommended on the potential impact that pre-kindergarten programming may have on children's later academic success, within the state of Indiana as compared to other states. Furthermore, is it sufficient for Indiana to allow the private and federally funded institutions to primarily fill this role, or would a comprehensive state funded program garner greater results? This research could explore both quantitative and qualitative measures that may reveal the true impact of today's Indiana pre-kindergarten programming.

As early childhood education continues to be in the forefront of national interest and debate, I recommend that additional studies be conducted at the national level or within individual states. Since the literature points to *quality* as the essential factor for impactful pre-kindergarten programs, further studies should be conducted that measure these quality indicators so that the maximum cost-to-benefit ratio can be realized.

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## APPENDIX: SURVEY OF PUBLIC AND PRIVATE PRE-KINDERGARTEN PROGRAM

## DIRECTORS

1. What is the student-teacher ratio in your pre-kindergarten program?

\_\_\_\_\_ Teacher(s) \_\_\_\_\_ Students

2. What is the length of your pre-kindergarten's instructional day?

\_\_\_\_\_ Hours \_\_\_\_\_ Minutes

3. How long has your pre-kindergarten been established?

\_\_\_\_\_ Years

4. Which type of pre-kindergarten are you considered?

Public

Private

5. How long have you been in charge of this program?

\_\_\_\_\_ Years

6. Which demographic area is your pre-kindergarten located within?

Rural

Suburban

Urban

7. Are you male or female?

Male

Female

8. What is the highest level of education you have completed?

- High School  
 Some College  
 Bachelor's Degree  
 Master's Degree or Other Graduate Degree

9. What is your background in early childhood education?

(6 = extensive background; 1 = very little or no background)

6      5      4      3      2      1

10. My teachers have an extensive background in early childhood education.

(6 = extensive background; 1 = little or no background)

6      5      4      3      2      1

11. The length of my instructional day is sufficient to accomplish our pre-kindergarten curriculum.

(6 = sufficient time; 1 = not enough time)

6      5      4      3      2      1

12. My teachers implement the State of Indiana Pre-K curriculum standards.

(6 = fully implement; 1 = does not implement)

6      5      4      3      2      1

13. My teachers participate in professional development.

(6 = participates in many PD opportunities; 1 = does not participate in any PD)

6      5      4      3      2      1

14. My Pre-K class size(s) are appropriate to meet the needs of my students.

(6 = ideal; 1= not appropriate)

6      5      4      3      2      1

15. My Pre-K student to teacher ratio is appropriate to meet the needs of my students.

(6 = ideal; 1= not appropriate)

6      5      4      3      2      1

16. How would you rate the overall quality of your Pre-K program?

(6 = highest quality; 1= lowest quality)

6      5      4      3      2      1

17. Please give the basis for your rating on question #16: