

EARLY CHILDHOOD EDUCATION: IT'S LONG-TERM IMPACT ON SOCIAL COMPETENCE

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The following faculty members have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirement for the degree of Master of Education, with a major in Educational Psychology.

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DEDICATION

I dedicate this to my husband, my son, my granny, and my guardian angel in heaven.

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I am grateful to all my family and friends that made up a remarkable support system through my thesis writing and graduate school experience. Thank you to Dr. Linda Bakken, my thesis chair advisor, for always finding time for me and especially for reminding me to not forget my jump drive. To my thesis committee, Dr. Randy Ellsworth and Dr. Patricia Purvis, thank you for your time and help.

ABSTRACT

A majority of support for early childhood interventions comes from the strong evidence of the positive impact of rigorous evaluations of three comprehensive programs: the Abecedarian project, High Scope Perry Preschool, and the Chicago Child-Parent Centers (Issacs, 2008). There has been no major study of the long-term impact of preschool education since the 1970s. Thus, the purpose of the following study was to look at graduates from The Opportunity Project (TOP) program, a current preschool program in Wichita, Kansas and follow them through their first two years of school in the Derby USD 260 system. The study addressed social interactions of emotional maturity, social competence, and behavioral competence. The findings indicated that TOP second graders had the highest scores in all three areas. This indicated that second graders used behavior competence, social competence, and emotional maturity skills more than 75 percent of the time. The study also assessed teacher ratings of TOP graduates rank on social skills compared to other children in the classes. The findings show that the difference between TOP graduates and the rest of the class is significant for second graders in behavioral competence, social competence, and emotional maturity scores. This study found that these data begin to indicate a positive difference in social skills in program children than non-program children.

TABLE OF CONTENTS

Chapter	Page
I. The Problem	1
Definitions	2
Purpose	3
II. Literature Review	4
Poverty and Preschool	4
Preschool Programs	7
Head Start	7
Early Head Start	10
Other Preschool Programs	11
Long-term Research on Preschool Programs	13
High/Scope Perry Preschool	14
Carolina Abecedarian Project	16
Chicago Child Parent Center	18
Costs and Benefits	19
Limitations of Research on Preschool Programs	21
The Opportunity Project Program	22
Summary	27
III. Methodology	30
Participants	30
Instruments	31
Parent Survey	31
Social Competence Questionnaire	31
Procedures	32
IV. Results	34
V. Discussion	39
References	44
Appendices	47
A. TOP Evaluation Project Consent Form	48
B. Parent Survey	49

TABLE OF CONTENTS (continued)

Chapter	Page
C. Social Competence Questionnaire	50
D. Letter to Teacher	53

LIST OF TABLES

Table	Page
1. Frequencies, Standard Deviations, and Mean Scores for Behavioral, Emotional, and Social Competence for Kindergarten, First Grade, and Second Grade	35
2. Single Sample <i>t</i> Tests Indicating Comparisons of TOP Graduates Mean Rating with Rating of Equally Competent with Non-TOP Students in Behavioral Competence, Social Competence and Emotional Maturity	37

CHAPTER 1

Statement of the Problem

In recent years, policymakers and economists appear captivated by estimates suggesting a high rate of return in early childhood education (e.g.; Temple & Reynolds, 2007). As new evidence has appeared, there has been growing reliance on results of cost-benefit analysis in early childhood research. According to Zigler, Gilliam, & Jones (2006), significant research over the past 40 years has demonstrated the positive effects of high-quality preschool programs. Benefits have included improved school readiness, reduced grade retention, reduced need for costly remedial and special education services, increased high school graduation rates and postsecondary education, increased employment rates and family income, reduced criminal activity and likelihood for incarceration, and reduced dependence on welfare. These findings have been found in studies of model early intervention programs serving high-risk children from low-income families. These programs will be discussed in greater detail later.

Duncan and Magnuson (2003) reported recent experiments and many non-experimental studies suggest that economic deprivation during the preschool years is harmful to children's development. Intervention research indicates that early childhood may be a particularly fruitful time for additional investments in educational programs if family and neighborhood environments fail to ensure that children are ready for school. As a whole, the study of early childhood suggests that policies should treat the preschool years as a distinct period and recognize that poor families often have difficulty meeting some early childhood needs (Duncan & Magnuson, 2003).

Definitions

Poverty is not randomly distributed; race, gender, family structure, and parental education all have a significant effect on the likelihood of experiencing poverty (Seccombe, 2000). Minority groups are also significantly more likely to live in deep poverty, defined as families with cash incomes less than 50% of the poverty line (Seccombe, 2000). Poverty is usually depicted statistically. Statistical data are important because they allow us to compare the vulnerability of different groups within the population and to assess the ways in which poverty expands or contracts, or which groups are becoming relatively more or less vulnerable (Seccombe, 2000). Being poor involves more than simply having a low *income* (Campbell & Ramey, 1994). Poverty affects one's total existence. It can impede adults' and children's social, emotional, biological, and intellectual growth and development.

Defining preschool can be a very difficult task. One simple definition was offered by Kichura (2007) in which she suggests that it is preschool that teaches children to control their behavior to understand problem solving and to learn basic rules of integrity. Young children can attend a complex patchwork of public and private programs that can go by a variety of names including preschool, prekindergarten, 4 year-old Kindergarten, Head Start, Early Head Start, child care, day care, and nursery school. According to the National Institute for Early Education Research, preschool education is increasingly seen as a middle income essential. In 2005, two-thirds of 4-year-olds and about 40 percent of 3-year-olds were enrolled in a preschool education program. This represents a substantial increase over earlier decades.

Preschool education in this country is sharply divided into public and private systems (Duncan & Magnuson, 2003). Federal law (cited in Duncan & Magnuson, 2003) dictates that states make public programs available to all preschoolers with disabilities. Many children in the

United States enter Kindergarten without prior experience in preschool (Scrivner & Wolfe, 2003). Typically, three-year-olds were far less likely to attend; only 39 % were enrolled in preschool, and more than half of these were in private programs. Preschool, Pre-Kindergarten (Pre-K), and nursery school programs may offer two or three hours per day, for two or three days a week of educational programming. The many names for programs young children attend reflect the diverse auspices and dual purposes of pre-K programs (Issacs, 2008.)

Purpose

As a whole, the study of early childhood suggests that policies should treat the preschool years as a distinct period and recognize that low-income families often have difficulty meeting some early childhood needs (Zigler & Styfco, 2004). Three well known studies in the 1960's and the 1970's (Schweinhart et al., 2005) focused on early intervention serving economically disadvantaged children. Nothing of the magnitude of these three studies has been implemented since the 1970's.

The purpose of this study is to look at the graduates from The Opportunity Project (TOP) program, a current preschool program in a mid-sized Midwestern city, and follow them the first two years of school to look at their social interactions, emotional maturity, and behavior competence. Also teachers were asked to rate the TOP graduates on these three social skills in comparison to the remainder of children in the teachers' classes. Chapter 2 provides a literature review of previous research based on preschool programs. Chapter 3 discusses information on the sample, instruments, procedures and data analysis used to conduct the research. Chapter 4 presents the data results. Chapter 5 discusses the results. This study will add to the body of literature on the benefits of preschool intervention by exploring growth in social competence, emotional maturity, and behavioral competence.

CHAPTER 2

Literature Review

Early childhood education is receiving widespread attention as one of the most effective ways to promote children's educational success. This chapter will review preschool research literature by covering the following: poverty and preschool, preschool programs, research on preschool programs, and costs and benefits and limitations of research on preschool programs. Chapter 2 will conclude with a discussion of The Opportunity Project (TOP) as a recent early education program that will provide data for this study.

Poverty and Preschool

There is general agreement among experts in child development and early education that four-year-olds gain from being in a stimulating environment with other students (e.g., Gormley, Gayer, Phillips, & Dawson, 2005). The years from birth to age five are becoming viewed more as a critical period for establishing the foundations of thinking, behaving, and emotional well-being. Scrivner and Wolfe (2003) cite research literature that shows that during these years children develop linguistic, cognitive, social, emotional, and regulatory skills that predict their later functioning in many domains. However, students who are disadvantaged have limited readiness for school activities in both quantitative and qualitative ways (Brophy, 2006). Students of poverty have less access to books and educational games and toys in the home and less exposure to out-of-home educational experiences such as a vacation or trips to zoos or museums. Brophy indicated that children from advantaged circumstances typically accumulate much richer and more varied background experiences than disadvantaged children.

In addition to these quantitative limitations in disadvantaged students' background experiences, there are gaps and qualitative limitations in their development of cognitive and metacognitive tools for processing and making sense of their experience, transforming and storing information, and accessing and applying it in relevant future situations. Brophy (2006) suggested that certain cognitive and linguistic capacities tend to develop universally and automatically in all cultures and family environments, but development of other cognitive and linguistic capacities is much more dependent on exposure to particular kinds of modeling and experience. Brophy suggests that the term *disadvantaged* implies two things about a child's family background: (a) poverty and (b) gaps and limitations in the cognitive environment in the home. Children who are disadvantaged tend to have fewer interactions with family members to develop and exercise their capacities to use thought and language-building knowledge. Most children from advantaged homes begin school already familiar with, and positively oriented toward, the process of reading; thus, they are prepared to engage in this activity comfortably and efficiently when it is introduced. For these children, reading activities are inviting opportunities rather than a threatening challenge.

Literature (e.g., Liang, 1998) investigating family-level factors that influence child care focuses on the influence of family social class and poverty, examining factors such as household income and maternal education. Liang cites a substantial amount of research that has shown that poverty or low income is a major factor placing children at risk for educational failure. Drop-out rates are much greater for children from low-income families than from families with more economic resources.

Hofferth and Wissoker (1992) directly examined income and childcare using data from the 1985 National Survey of Youth from the University of Ohio. These researchers examined the

relative demands of households among four alternative child care arrangements: child care centers or nursery centers, care by a family member, care by a sitter, and care provided by the father (if present). Hofferth and Wissoker found that higher prices significantly lowered the probability of parents choosing a particular mode, relative to other modes of child care. Mothers who earned more per hour and families who had higher incomes were more likely to select center care over other modes. Advantaged families have the option to purchase childcare and their utilization rate of center-based childcare programs is high. In contrast, working-class and middle-income families appear to have a lower likelihood of using centers, due to the lack of either subsidies or sufficient income to pay for center-based childcare programs.

Campbell and Ramey (1994) suggest family income can substantially influence child and adolescent well being. Impoverished parents need and want economic independence, but along with the need to work goes the need for child care. Research from Brooks-Gunn and Duncan (1997) has shown that family income seems to be more strongly related to children's ability and achievement-related outcomes than to emotional outcomes. In fact, Brooks-Gunn and Duncan indicate that children living below the poverty threshold are 1.3 times as likely as non-poor children to experience learning disabilities and developmental delays. Zigler and Styfco (2004) state young children in the United States are more likely to experience poverty than are their counterparts in other developed countries.

A growing body of research (e.g., Schweinhart et al., 2005) has led to the conclusion that children living in poverty who attend preschool programs experience a series of primary and secondary positive effects that stretch the improvements in early childhood intellectual performance and disposition towards (a) learning, (b) reduced need for placement in special education classes in later childhood, (c) higher school achievement and commitment in early

adolescence, (d) lower rates of high school dropout, arrests, and welfare assistance, and (e) higher earnings and wealth in later adolescence and early adulthood. Early childhood programs have been developed for economically disadvantaged children targeting the low income family by providing children with early education in preschool settings. These programs have been a focus of social policy and research since the 1960s.

Preschool Programs

Since the 1960's preschool education participation in the United States has steadily increased. According to the National Institute of Early Education Research (Barnett & Yarosz, 2007) over the past half century, the way America educates its young children has changed substantially. In 1965, only 60 % of 5-year-olds were in school. This rose to 85 % by 1980 and reached the low 90's by 2005. Participation of younger children was far lower in 1965: only 5 % of 3-year-olds and 16 % of 4-year-olds were enrolled. These percentages have increased rapidly through 1980 and have continued to increase since.

In recent decades kindergarten has been widely seen as the first year of school. The 200 U.S. Bureau of the Census (cited in Barnett & Yarosz, 2007) has documented this trend, but still classifies kindergarten as *preprimary education*. The National Institute for Early Education Research (Barnett & Yarosz, 2007) shows that two-thirds of today's children begin school at age 4, although the vast majority do not attend a public school. At both 3 and 4 children attend a complex patchwork of public and private programs that go by a variety of names including: preschool, prekindergarten, 4 year-old Kindergarten, Head Start, Early Head Start, child care, day care, and nursery school.

Head Start. The Federal Government provides Head Start to children in poverty. Considered the nation's largest and oldest early intervention program for young children and

families in poverty, Head Start began in 1965 (Zigler & Styfco, 1996). The vision of Head Start was to offer children from economically impoverished homes some of the learning opportunities enjoyed by their more advantaged peers prior to entering public school. Zigler and Styfco indicate that, in the early 1970's the Office of Child Development (OCD) (the government agency responsible for Head Start) began a concerted effort to redefine ways to measure Head Start's success. The OCD formally adopted social competence as a suitable term for the overarching goal of Head Start. Head start was initially conceptualized as a 6- or 8- week program for low-income children the summer before they started Kindergarten. The program has evolved to the point where Head Start can be part-day or full-day year round. Some Head Start Centers also offer WRAP Around Child Care for families whose parents are working, attending school or who are in job training. WRAP provides child care that "wraps around" the school day schedule. It enables parents who are working to receive care for their children that fit the routine workday schedule (Zigler & Styfco, 2004).

Head Start currently serves about 900,000 children, the vast majority at ages three and four. It serves 12% of children at age four, and serves just over half of those children for two years starting at age three (Henry, Gordon, & Rickman, 2006).

Head Start's continued support and longevity are dependent on whether policy makers believe that taxpayer's dollars are being used effectively (Zigler & Styfco, 2004). According to the National Head Start Association (Zigler & Styfco, 2004), research shows that Head Start is a wise investment for society. According to UCLA/Johnson and Johnson Institute (Gabbe & Robinson, 2007) Medicaid costs can shrink significantly when Head Start parents are trained to be better informed about their children's health. The Institute's goal was to train approximately 12,000 Head Start families Nationwide in 1995. The preliminary results of a randomly selected

longitudinal study of more than 600 Head Start graduates in San Bernardino County, California, showed that society receives nearly \$9 in benefits for every \$1 invested in these Head Start children. These benefits include increased earnings, employment, and family stability, and decreased welfare dependency, lower crime costs, fewer grade repetitions, and fewer special education designations. The Institute's results show that properly trained Head Start parents can decrease Medicaid costs by \$198 per family.

A national random-assignment evaluation of Head Start (Issacs, 2008) found small to moderate effects for children assigned to Head Start compared to a control group of children not assigned to the program. There was a small to moderate positive impact for children assigned to Head Start in pre-reading, pre-writing, vocabulary, and literacy skills. There was little impact on children's behavior or social skills. There was a small reduction in problem behavior among certain subgroups of Head Start enrollees. Three-year-olds assigned to Head Start were less likely to exhibit behavior problems, such as hyperactive behavior one year later than children in the control group. Head Start four-year-olds had fewer behavior problems than control group children, although this reduction was limited to those from English-speaking families.

In addition, some recent historical data (Issacs, 2008) suggest that Head Start has had a long-term positive impact on education and crime, with some impact varying by race. Whites who participated in Head Start in the 1970's were 22 % more likely to finish high school and 19 % more likely to attend college than siblings who were not in Head Start. Black young adults who participated in Head Start did not see the same educational impact, but were about 12 % less likely to have been booked or charged with a crime than non-participating siblings. Ludwig's and Phillips (2007) presented a study that provided new evidence on the long-term effects of Head Start by exploiting a natural experiment generated by how the Head Start program was

launched by the Office of Economic Opportunity (OEO). The heart of Ludwig's and Phillip's design was to examine whether discontinuities in Head Start funding at the OEO cutoff are mirrored by discontinuities in other outcomes. This study found that educational attainment of both Blacks and Whites ages 18 to 24 increased by a half year in counties with higher levels of Head Start funding in the 1960s and 1970s.

The Head Start Impact Study (cited in Zigler & Styfco, 2004) found a more positive impact for children assigned to Head Start at age three than at age four, based on observations one year after enrollment. Larger effects were found for children whose primary language was English than children whose primary language was Spanish. For English-speaking children, there was a positive impact in all areas (cognitive, socio-emotional, health outcomes, and parental behavior). There was more evidence of a positive impact on African-American and Hispanic children than for White/Other children, particularly for those assigned to Head Start at age three.

Early Head Start. Early Head Start provides child development services to low-income pregnant women and families with young children under the age of three (Issacs, 2008). This is an extension of Head Start implemented in 1994. The goal of the program is to promote healthy prenatal outcomes; the health, cognitive and language development and socio-emotional well-being of infants and toddlers; and family development and a supportive parent-child relationship. Early Head Start offers services in centers and through home visits, with some programs combining both center-based and home-based approaches. In 2006, the program served an estimated 61,647 children, at an estimated annual federal cost of about \$10,500 per child.

There has been a large-scale, random assignment evaluation of Early Head Start (Issacs, 2008) that found the program had a positive impact on many dimensions of parenting and child development at ages two and three years. Early Head Start children scored higher on

standardized assessments of cognitive development and language development than a control group of children not assigned to the program. Early Head Start children also engaged their parents more, were less negative to parents, and were more attentive to objects during play. Early Head Start children were also less aggressive than the control group of children not assigned to the program. A more positive impact on socio-emotional development was observed at age three than at the age two.

There was a more positive impact for African American and Hispanic families than for White families. Early Head Start brought African American children and families closer to the levels of other racial groups in developmental outcomes. Impact varied by program type, depending on whether services were offered through a center-based program, a series of home visits, or a mixed approach of center-based and home-based services. Mixed-approach programs had the strongest impact, with a wide range of results across cognitive and socio-emotional development, and parenting behaviors.

Other preschool programs. Issacs (2008) goes on to report about other State and local education agencies that offer preschool and prekindergarten programs. State Pre-Kindergarten programs provide state-funded, classroom-based educational services to young children. Typically these state programs serve primarily four-year old children, although some states enroll three-year old children. States are in different phases of implementation, with only a few states providing services statewide. In 2006-2007, 38 states had some form of state pre-kindergarten or preschool program, serving just over one million children in 2006-2007. State spending averaged about \$3,600 per child in 2006-2007; total spending, including spending from federal and local sources, was estimated to be at least \$4,100 per child.

According to the National Institute of Early Education Research (Barnett & Yarsoz, 2007), private-for-profit, nonprofit, and faith-based organizations can operate programs under these previously mentioned names. These programs can serve both educational and care purposes. Programs that serve both educational and long hours of care can be expensive. Programs called child care and day cares are generally designed to meet the needs of working parents, providing as many as 10 hours per day and some weekend and evening hours. Preschool, Pre-Kindergarten (Pre-K), and nursery school programs may offer two or three hours per day, for two or three days a week of educational programming.

The National Institute of Early Education Research (Barnett & Yarsoz, 2007) indicates that, in pre-K participation rates from 1991 to 2005, African American children have the highest Pre-K participation rates among the three largest ethnic groups. Statistical analyses indicate that parental education, income, employment, family structure, and region explain much of the difference in pre-K participant rates between Hispanics and other ethnic groups. A survey of 1,000 Hispanic families suggested that inadequate access is the biggest explanation for low rates of Hispanic Pre-K participation.

Henry, Gordon, and Rickman (2006) agree that pre-Kindergarten programs are effective at their stated goal of improving children's readiness to learn. Some studies (e.g., Zigler, Gilliam, & Jones, 2006) suggest that pre-Kindergarten programs have a large impact on cognitive skills. The long-term effects of intervention are accounted for primarily by the initial improvement in children's cognitive development which enables them to do better when they start school and provides cumulative advantages over time.

Issacs (2008) reviewed three recent well-designed pre-Kindergarten studies and concluded that children attending state pre-Kindergarten programs gain in cognitive skills. All

three of these evaluations used study designs to isolate the effects of pre-Kindergarten from many other differences among children enrolled in such programs, including differences in the family's motivational levels, as well as more readily observed differences in family income, parental education, maternal employment status, etc.

Universal pre-Kindergarten in Oklahoma had a large impact on children's abilities to identify letters and pronounce words, as well as a medium-sized impact on both math and spelling skills, according to a well-regarded study of pre-Kindergarten in Tulsa (Issacs, 2008). Similar patterns were found in a five-state study of pre-Kindergarten programs in Michigan, New Jersey, Oklahoma, South Carolina, and West Virginia (Issacs, 2008). Most state pre-Kindergarten programs are targeted at disadvantaged children, but six states have established programs that might be described as universal. Gormley et al. (2005) report on the school readiness of children who attended the universal pre-Kindergarten program in Tulsa, Oklahoma during the 2002-2003 school year. They estimated the overall effects of exposure to pre-Kindergarten for children varying in race, ethnicity, and income and for children in full-day and half-day programs. The pre-Kindergarten program was found to benefit children from all racial-ethnic groups comprising substantial portions of the Tulsa population: Hispanics, Blacks, Native Americans, and Whites. The pre-Kindergarten program was also found to benefit children from diverse income brackets, including children eligible for a full-price lunch, a reduced-price lunch, and no lunch subsidy at all.

Long-term Research on Preschool Programs

The most widely known long-term evidence concerning the efficacy of early intervention comes from the Consortium for Longitudinal Studies formed by leaders of 11 programs collectively serving economically disadvantaged children between 1962 and 1973 (Campbell &

Ramey, 1994). From among these 11, the following three are the most accepted: The High/Scope Perry Preschool study, the Carolina Abecedarian Project study, and the Chicago Child-Parent Centers study. These three studies have been commended for their duration and methodological quality (Schweinhart et al., 2005).

High/Scope Perry Preschool. Schweinhart et al. (2005) suggest that The High/Scope Perry Preschool Study is one of the most convincing studies of the long-term benefits of good preschool programs for young children living in poverty. This study examined the lives of 123 African Americans born in poverty and at high risk for failing school. The study identified both the short- and long- term effects of a high quality preschool education program for young children living in poverty. The children were selected because their parents had low educational attainment (high school graduation or less), low occupational status (unemployed or unskilled), and their homes had fewer than 3 rooms per person. These families were of lower socioeconomic status than most U.S. residents at that time.

Schweinhart et al. (2005) summarize the longitudinal results of the High/Scope Perry Preschool project. For four years, Weikart and his colleagues in the Ypsilanti, Michigan, school district implemented the High/Scope Perry Preschool Program. Fifty-eight out of the 123 identified children were assigned to a program group. Each year, children were assigned to groups by forming pairs of individuals with similar IQs at study entry, then randomly assigning pair members to groups, with exchanges between groups to equate their percentages of girls and boys and average economic status (Schweinhart et al., 2005). These children received a high-quality preschool program at ages 3 and 4; the other 65 received no preschool program. Data were collected annually on both groups at age 3 through 11 and again at age 14, 15, 19, 27, and 40. The program group significantly outperformed the no-program group on highest level of

schooling completed (65% vs. 45% graduating from regular high school) (Schweinhart et al., 2005). By age 40, 77% of the program group compared to 60% of the no-program group had graduated from high school in some way. A significantly smaller percentage of the program group than the no-program group received special education for mental impairment (15% vs. 35%)

Significantly more of the program group than the no-program group were employed at age 40 (76% vs. 62%), which continues the trend from age 27 (69% vs. 56%). At age 40, more program-group males than no-program group males were employed (70% vs. 50%), although at age 27 more program-group females than no-program group females were employed (80% vs. 55%). The program group also had significantly higher median annual earnings than the no-program groups at ages 27 and 40 and higher median monthly incomes at both ages.

The program group had significantly more stable dwelling arrangements at ages 27 and 40. They owned their own home rather than renting, receiving subsidy, living with others, or being in prison. Significantly more of the program group than the no-program group owned a car at age 40 (82% vs. 60%), especially males (80% vs. 50%), as they had at age 27 (73% vs. 59%). At age 40, significantly more of the program group than the no-program group had savings accounts (76% vs. 50%), especially males (73% vs. 36%).

By age 40, fewer members of the program group than the no-program group reported receiving social services at some time in their lives (71% vs. 86%), which is not statistically significant. The only significant difference between the program group and the no-program group involved family counseling at ages 34 to 40 (13% vs. 24%) and general assistance from ages 23 to 27 (10% vs. 23%).

Research (Schweinhart et al., 2005) evaluating the Perry Preschool Program has presented strong evidence that the program played a significant role in reducing overall arrests and arrests for violent crimes as well as property and drug crimes and subsequent prison or jail sentences over study participants' lifetimes up to age 40. The program group had significantly fewer lifetime arrests than the no-program group (36% vs. 55% arrested 5 or more times) and significantly fewer arrests for violent crimes (32% vs. 48% ever arrested), property crimes (36% vs. 58% ever arrested), and drug crimes (14% vs. 34% ever arrested). The program group was sentenced to significantly fewer months in prison or jail by the age of 40 (28% vs. 52% ever sentenced). Specifically from ages 28 to 40, the program group was sentenced to significantly fewer months in prison for felonies (7% vs. 25%) and had served significantly fewer months in prison overall (9% vs. 21% ever served). More program than no-program males raised their own children (57% vs. 30%) and had second marriages (29% vs. 8%).

Carolina Abecedarian Project. The Carolina Abecedarian Project (Campbell & Ramey, 1994) was based on the General Systems Theory, in which developmental outcomes are viewed as a result of transactions between systems at many levels, ranging from that of the child, the parents, the school, the community, and society as a whole. This theory looks at a child's development within the context of the system of relationships that form his or her environment. Bronfenbrenner's (1979) theory defines complex layers of environment, each having an effect on a child's development. Bronfenbrenner recently renamed his theory to the *bioecological systems theory* to emphasize that a child's own biology is a primary environment fueling his or her development. The interaction between factors in the child's maturing biology, his or her immediate family/community environment, and the societal landscape fuels and steers this development. Changes or conflict in any one layer will ripple throughout other layers. To study a

child's development then, we must look not only at the child and her immediate environment, but also at the interaction of the larger environment as well.

The Carolina Abecedarian Project began in 1972. The researchers randomly assigned 111 infants, averaging 4.4 months of age from poor families, to a special program group (n=57) or a typical child care group (n=54) that used the child care arrangements in homes and centers that were typical in the 1970s (Schweinhart et al., 2005). The special program was a full day, full-year, day-care program that lasted 5 years, from birth to elementary school. The special program's goal was to enhance children's cognitive and personal characteristics so they would achieve greater school success. Infants and toddlers were offered optimal stimulation of adult-child interaction and a variety of playthings and opportunities to explore them. Both groups received nutritional supplements during the first few years of life, and social services referrals when needed throughout the first eight years of life. The 54 assigned to the control group received no educational intervention.

The Carolina Abecedarian Project was the first study to find preschool program benefits throughout participants schooling on their intellectual performance and academic achievement. Mean IQs of program and no-program groups were 101 vs. 84 at age 3, 101 vs. 91 at age 4.5, 96 vs. 90 at age 15, and 89 vs. 85 at age 21; achievement scores at age 15 were 94 vs. 88 in reading and 94 vs. 87 in mathematics. By age 15, 31% of the program group vs. 55% of the no-program group had been retained one grade, and 25% vs. 48% had received special education services. At age 21, 70% of the program group vs. 67% of the non-program group had graduated from high school or received a GED certificate. By age 21, 35% of the program group vs. 14% of the no-program group had attended a 4-year collage. As teens, 26% of the program group and 43% of

the no-program group had become parents. The program group and no-program groups did not differ significantly in arrests by age 19.

Chicago Child-Parent Center. The Chicago Child-Parent Center program provided comprehensive educational and family-support services to economically disadvantaged children and their parents beginning at age 3 and continuing until third grade for up to 6 years of intervention (Temple & Reynolds, 2007). The Chicago Child-Parent Center program began in 1985 and examined the effects of the Chicago Child-Parents (CPC) program. This program was city-wide and was much larger in scale than the research programs for the High/Scope Perry Preschool and Abecedarian studies. The study sample consisted of 1,539 low-income children (93% African Americans, 7% Hispanic) enrolled in 25 schools, 989 who had been in the CPC program and 550 who had not. Children were not randomly assigned to groups. Preschool program group members attended a part-day preschool program when they were 3 and 4 years old, while the no-preschool program children did not. The comparison group did not attend the CPC program; instead they participated in an all-day Kindergarten program for children at risk in five randomly selected schools. The CPC program involved family-support services and preschool education. Parent outreach was provided by a family-support coordinator and a parent-resource teacher.

The preschool-program group did significantly better than the no-preschool group in educational performance and social behavior, with lower rates of grade retention (23% vs. 38%) and special education placement (14% vs. 25%) followed by higher rates of high school completion (50% vs. 39%), more years of education (10.6 vs. 10.2), and lower rates of juvenile arrests (17% vs. 25%), and school dropout (47% vs. 55%). High school completion rates were 43% for program males vs. 29% for no-program males, but 57% for program females vs. 48%

for no-program females; this was the reverse of the preschool experience by gender pattern of the High/Scope Perry Preschool study.

Costs and Benefits

According to Reynolds, Temple, Robertson and Mann (2002) early childhood programs are believed to be cost effective because they can improve children's educational and socioeconomic prospects. The annual cost to the nation (due to school dropout and crime in the United States) was estimated to be \$350 billion in 1998. It is hypothesized that the identification of cost-effective prevention programs can reduce public expenditures devoted to later treatment and remedial services.

The estimated economic return to society for the High/Scope Perry Preschool Project was \$258,888 per participant on an investment of \$15,166 (a savings of \$17.07 per dollar invested). Of that return, \$195,621 (\$12.90 per dollar invested) went to the general public and \$63,267 went to each participant. Of the public return, 88% came from crime savings, and 1% to 7% came from either educational savings, increased taxes due to higher earnings, or welfare savings; thus, 93% of the public return was due to males because of the program's large reduction in male crime.

Analysis of cost benefits of the Abecedarian program indicates that, in 2000 dollars discounted at 3% annually, the program cost \$34,476 per child (\$13,362 per child per year) and yielded benefits to society of \$130,300 a \$3.78 return per dollar invested. Most of the benefits came from mothers' earnings (54%), participants' earnings (28%), and health improvement due to less smoking (13%).

Reynolds, et al. (2002) indicate that cost-benefit analyses show promising evidence that early childhood interventions can be efficient use of public resources. Reynolds and colleagues

estimated the value of the Chicago Child-Parent Center Program benefits in 1998 dollars for five main categories: (a) reductions in expenditures for school remedial services, including special education and additional schooling required for retained students, (b) reductions in criminal justice expenditures for both juvenile and adult arrest and treatment, (c) reductions in child welfare expenditures, (d) averted tangible expenditures to crime victims of child maltreatment, and (e) increases in projected earnings of program participants and tax revenues as a result of higher rates of high school completion. They distinguished between three types of benefits: benefits to participants, benefits to the general public, and benefits to society.

Analysis of the costs and benefits of the Chicago Child-Parent Centers program indicates that in 2000 dollars discounted at 3% annually, the program cost \$6,956 per child participating 1.5 years and yielded benefits of \$49,564 per participant, a \$7.10 return per dollar invested. Benefits to the general public were \$26,637 per participant, \$3.83 per dollar invested, with the largest benefits coming from more taxes paid on higher earnings (28%), reduced crime victim costs (18%), and reduced costs of school remedial services (18%).

The evidence base for these three programs is quite strong, particularly for the Abecedarian and Perry Preschool programs, where children were randomly assigned to either a program participation group or a control group of non-participants (Gormley & Phillips, 2005). The third program, the Chicago Child-Parent Centers, has a somewhat weaker design, relying on a matched comparison group rather than random assignment. All three evaluations, however, are highly regarded and measure outcomes based on data collected over a long period of time.

According to Zigler, et al. (2006), there are some methodological concerns for all three projects, most notably the small sample sizes in the Abecedarian and Perry Preschool studies and

the lack of random assignment in Chicago Child-Parent Centers. These programs were implemented in the 1970's. Would they be effective if implemented today?

Limitations of Research on Preschool Programs

Some fear that children are being pushed too hard, too soon. According to Zigler, et al. (2006), one criticism of preschool is that children acquire the most important skills for kindergarten readiness “best by experiencing the first years of their life in a loving home environment where they receive individual attention and nurturing from a parent rather than in a preschool classroom with other children and strangers” (p.69).

Zigler and colleagues (2006) argue that, in the past four decades, hundreds of studies have documented the links between preschool participation and child development outcomes, but three limitations reduce the usefulness of the findings for social policy construction. First, most of the evidence for the positive, long-term effects of preschool on children's well-being comes from model demonstration programs rather than large-scale public programs run by human service agencies and schools. More evidence from mainstream programs is needed to assess the relative effectiveness of current state and federal programs.

A second limitation of existing research is that until recently, cost-benefit analysis had been conducted for only the High/Scope Perry Preschool. Although policy makers commonly cite the High/Scope findings as proof that preschool has substantial economic benefits, no large-scale public program has been studied for cost-effectiveness. This limitation is important given the wealth of outcomes potentially impacted by preschool and the policy significance of cost-effectiveness data. This evidence is important and needed to compare the benefits of prevention programs and treatment programs.

Another limitation of the research is that preschool programs may have different effects on different students, and it is not well understood who benefits most from attendance. Do programs serving middle income families have the same magnitude of effect on child outcomes as programs serving low-income families? Do children experiencing a large number of risk factors benefit more from participation than those with few risks?

The High/Scope Perry Preschool study, Abecedarian study, and Chicago Child-Parent Center Program implemented in the 1960's and the 1970's focused on early intervention serving economically disadvantaged children. Nothing of the magnitude of these three studies has been implemented since the 1970's.

One current program is The Opportunity Project (TOP). TOP is a charitable organization in Wichita, Kansas; it is privately funded and operated. The goals of the TOP program are to reach all preschool children who need an early stimulation environment (Gormley, et al. 2005). It is an attempt to repeat the High/Scope Perry Preschool Study on a much a larger scale and to follow these children through their early adult lives.

The Opportunity Project Program

TOP offers a wide array of learning opportunities to children in the Wichita community, enrolls children ages 12 months to 5 years, and is operated from 7:30am to 5:30pm 5 days a week. Children who attend TOP are offered breakfast, lunch, and a snack each day. There are two facilities (TOP North and TOP South). The program has a teacher-to-student ratio of 1-5 for 12 months to 2 ½ years, 1 to 10 for 2 ½ to 3 years, and 1 to 12 for 3-5 years. Each TOP classroom includes a lead teacher and an assistant teacher. Enrollment at TOP is based upon financial need and ability to qualify for local, state, or federal assistance. One hundred and seventy six students were enrolled at TOP South in April 2008 with an equal proportion of male

and female students. Of the total student population 58 (33%) were Caucasian, 54 (31%) Hispanic, 29 (16%) Multi-Racial, 19 (11%) African American, and 16 (9%) Asian. Of the total student population 137 (78%) qualified for free lunch, 28 (16%) were full pay, and 11 (6%) received a reduced lunch. Out of the total student population 158 (90%) of the children were without IEP's and 18 (10%) had IEP's.

The Opportunity Project (TOP) is an early childhood program for children from infancy to five years of age. The program is designed to provide opportunities for children to reach their full potential in all areas of learning and development (TOP curriculum, 2003). The National Association of the Education of Young Children (NAEYC) guides the philosophies, goals, objectives, and methods of the TOP program. These guidelines for program development are based on the work of child development/learning theorists (including Piaget and Vygotsky), as well as current research in education, human growth/development, and brain development. The following are several key concepts recommended by the NAEYC: (a) whole child philosophy and child-centered curriculum, (b) an integrated curriculum, (c) children's needs and interests, and (d) the knowledge base of the disciplines.

The following are principles in implementing curriculum for the TOP program (TOP Curriculum, 2003):

1. The domains of children's development physical, social, emotional, and cognitive are all interrelated.
2. Development occurs in relatively orderly sequence, with later abilities, skills and knowledge building on those already acquired. Development proceeds in predictable directions toward greater complexity, organization and internalization.

3. Development proceeds at varying rates from child to child as well as unevenly within different areas in child's functioning.

4. Early experiences have both cumulative and delayed effects on individual children's development. Optimal periods exist for certain types of development and learning. Current research demonstrates that social and sensorimotor experiences during the first three years directly affect neurological development of the brain, with important and lasting implications for children's capacity to learn. The early years are especially optimal for the development of language, motor, and social skills.

5. Development and learning occur in and are influenced by multiple social and cultural contexts. Children's development occurs within the socio-cultural context of the family, educational setting, community and broader society.

6. Children are active learners, drawing on direct physical and social experiences as well as culturally transmitted knowledge to construct their own understandings of the world around them.

7. Development and learning result from interaction with biological maturation and the environment, which includes both physical and social worlds that children live in. Learning new skills is influenced by environmental factors including opportunity and encouragement.

8. Play is an important vehicle for children's social, emotional, and cognitive development, as well as a reflection on their development.

9. Children develop and learn best in the context of a community where they are safe and valued, their physical needs are met, and they feel physically and psychologically secure. Children's development is influenced by their ability to establish and maintain positive, consistent primary relationships with adults and other children. Also development is a reciprocal,

give-and-take process between a child and significant adults. Through interaction, each person influences the behavior and development of the other.

The TOP program guidelines are based on three components: (a) what is known about child development and learning; (b) what is known about the individual child: the strengths, interests and needs of each child in the group to be able to adapt for and be responsive to individual variation; and (c) what is known about the social and cultural context of the child. The TOP program goals and curriculum address domains including emotional, social, cognitive, and physical development. The TOP program goals provide opportunities for children in the following areas; self-esteem/autonomy, social, cultural, literacy, creative expression, critical/creative thinking, math, science, physical (gross/fine motor), and health and safety.

In the area of self-esteem/autonomy the TOP program helps the children to develop autonomy, personal initiative, curiosity, self-confidence, self-esteem, positive attitude towards learning, a sense of self, and a sense of belonging. In the area of self competence the TOP program goal is to help children to develop relationships of mutual trust and respect with adults and peers, understand perspectives of other people, negotiate and apply rules to group living, develop an understanding, respect and appreciation for social and cultural diversity, know about the community and social roles, develop an empathy for feelings, beliefs and welfare for others. In the area of culture the TOP program goals are to foster each child's construction of a knowledgeable, confident self-identity, understand, respect and appreciate individual, social and cultural diversity in themselves and others, foster each child's comfortable, empathetic interaction with diversity among people, and to foster critical thinking about bias. The TOP program curriculum includes multi-cultural, anti-bias content integrated into aspects of day-to-day activities (TOP Curriculum, 2003).

The TOP program Curriculum (2003) states that these goals should be accomplished by using the following methods. Learning about diversity should be integrated and developmentally appropriate and should be integrated into all aspects of the daily program. The climate and tone of the classroom should reflect a sense of community, where all members are respected and appreciated for the individuality that they bring to the group. Classrooms should have resources and materials in all areas to make the environment culturally rich. Multicultural books should be used, and added to the book center, including books about sharing, caring, teaching respect, and differences/similarities among people. The housekeeping and dramatic play area should include dress-up clothes, dolls, tools, and cooking utensils from different cultures. Pictures of families from different cultures, people with disabilities, and people in non-traditional career roles should be in the classroom.

The Opportunity Project plans to have five preschool sites (they currently have two) which will enroll children from 12 months to 5 years, providing them with a stimulating environment (Gormley, et al., 2005). This environment stresses social skills, primarily social competence, behavioral competence, and emotional maturity. Past studies (Campbell & Ramey, 1994; Reynolds, et al., 2002; Schweinhart, et al., 2005), indicated that longest term benefits of quality preschool programs were in the area of social skills. The TOP organization plans to follow the children longitudinally from Kindergarten to twelfth grade throughout young adulthood. This study will measure grade retention, school absences, special education placement, and eventually juvenile adjudication, and high school graduation rates. However, the most important measurement will be those of social skills based on the results of earlier studies. The study began with TOP South (the first site) following TOP graduates from the first graduating class in 2006. Students from TOP South attend elementary schools in Wichita and

one of its larger suburbs of Derby. Top North had its first graduates in 2008 almost all of these students attend public school in Wichita. The current study will address those TOP graduates from TOP South who attend the Derby public elementary schools.

Summary

A majority of support for early childhood interventions comes from the strong evidence of impact gathered from rigorous evaluations of three comprehensive programs: the Abecedarian project, High Scope/Perry Preschool, and the Chicago Child-Parent Centers (Isaacs, 2008). The Abecedarian project, Perry, and Chicago Child-Parent Centers all had strong effects on school-outcomes, including reductions in special education placement, grade retention, and increases in high school graduation.

Special education placements fell dramatically, from 48 % to 25 % for the Abecedarian participants and from 22 % to 12 % for participants at the Chicago Child Parent Centers (Issacs, 2008). Grade retention rates also fell for children enrolled in the three programs, with a particularly large decline for participants of the Abecedarian program (from 55 % to 31 %). The likelihood of either being placed in special education or being held back a year fell by more than half for Perry Preschool children, from 38 % to 17 %. The model programs had positive long-term effects on criminal activity, teen childbearing, and other social behaviors (Isaacs, 2008).

All three programs have had long-lasting effects on participants' education, earnings, criminal activity, and other behaviors, according to the lengthy follow-up data tracking participants to age 21 and older. High school graduation rates increased under all three programs. Labor force performance also was higher for participants in early childhood interventions as measured by higher earnings (Perry and Abecedarian), higher employment rates (Perry age 40), higher rates of placement in high-skilled jobs (Abecedarian, at age 21) and marginally higher

rates of full-time employment or college attendance (Chicago Child-Parent Centers, at age 24). Preschool attendance reduced criminal activity under two of the model programs: Perry preschoolers were less likely than non-preschoolers to be arrested as adults and students in Chicago Child-Parent Centers had lower rates of both juvenile and adult criminal activity. Teen parenting rates among females fell. There also was some evidence of other long-term effects on social and health behaviors, including less receipt of welfare. All three programs were found to return overall benefits that exceeded program costs.

All three programs served predominately African-American children from low-income families. The evaluation of the Chicago Child-Parent Centers has found larger impacts for children with more years of participation. The evidence base for these programs is strong, particularly for the Abecedarian and Perry Preschool programs, where children were randomly assigned to either a program participation group or a control group of non-participants. The Chicago Child-Parent Centers has been criticized for having a somewhat weaker design, relying on a matched comparison group rather than random assignment (Issacs, 2008).

Past preschool studies have indicated the greatest long-term impact is in the area of social interactions, and the TOP Early Learning Project stresses social interactions as important components of their curriculum. Thus, this research project is concerned with the long-term development of the TOP graduates on three dimensions: behavioral competence, social skills, and emotional maturity. This particular portion of the study will address TOP graduates as they progress through Derby Public Schools. This phase of the research will cover the first two years of the longitudinal research project. The research questions will be the following.

1. What are TOP graduates behavioral competence scores as measured by the Social Competence Questionnaire?

2. What are TOP graduates social skills scores as measured by the Social Competence Questionnaire?
3. What are TOP graduates emotional maturity scores as measured by the Social Competence Questionnaire?
4. Do TOP graduates increase significantly in their behavioral competence scores, social skills scores, and emotional maturity scores as they age from (a) Kindergarten to first grade, and (b) from first to second grade?
5. Do TOP graduates receive significantly higher ratings on behavioral competence (as measured by their teachers) than the *standard* or *average* on the Social Competence Questionnaire?
6. Do TOP graduates receive significantly higher ratings on emotional maturity (as measured by their teachers) than the *standard* or *average* on the Social Competence Questionnaire?
7. Do TOP graduates receive significantly higher ratings on social competence (as measured by their teachers) than the *standard* or *average* on the Social Competence Questionnaire?

CHAPTER 3

Methodology

This study includes the first two years of data for TOP graduates who attend Derby public schools (USD 260). Data were gathered for the 2007/2008 academic year and were gathered again for the 2008/2009 academic year.

Participants

The parents of TOP children who graduated in May 2006 and 2007 were asked to participate in a longitudinal study (see Consent Form, Appendix A). In order to be included in the following study participants had to have attended TOP for a minimum of 8 consecutive months. Of the 30 TOP graduates for 2006 who attended USD 260, 19 parents responded for a response rate of 63%. Of these 19, 11 were male and 8 female. Ages ranged from 6 to 7 years of age. There were 8 European Americans, 1 African American, 3 Asian Americans, 8 Hispanics, and 1 Multiracial child. Of the 43 TOP graduates for 2007 who attended USD 260, 20 parents responded for a response rate of 48%. Of these 20, 11 were males and 9 female. Ages ranged from 5 to 6 years of age. There were 6 European Americans, 1 African American, 2 Asian Americans, 7 Hispanics, 2 Multiracial, and 2 other. Data were gathered for these two groups in the Spring of 2008. The 2006 graduates were in first grade for the first year of the study, and the 2007 graduates were in Kindergarten for the first year of the study.

For the 2008 TOP graduates permission forms were obtained from the parents before the May graduation; thus there was a 94% response rate. Thirty-three of the 115 children attended Derby schools for the 2009 year. Of these 33, 18 were males and 15 female. Ages ranged from 5 to 6 years of age. There were 8 European Americans, 3 African Americans, 5 Asian Americans, 11 Hispanics, and 6 other.

Data were gathered again in Spring of 2009 for the 2006 graduates who were now in second grade, for the 2007 graduates who were in first grade, and for the 2008 graduates who were now in Kindergarten.

The Institutional Review Board (IRB) of Wichita State University and the Derby School District granted permission to conduct the following study.

Instruments

Parent Survey. A brief questionnaire was sent to each participant's parent (see Appendix B). The questionnaire is available in Spanish or English. The parent questionnaire was constructed by a team of TOP evaluators: Dr. Ruth Hitchcock, Dr. Charles Romig, and Dr. Linda Bakken. The 10-item questionnaire addressed the following areas: social competence, emotional maturity, and behavioral competence. The parent survey scores could range from 0-20. Four items assessed social competence (e.g., has friends and socializes with others: 0-8 points); three items assessed emotional maturity (e.g., usually gives reasons for his/her actions: 0-6points); and three assessed behavioral competence (e.g., asserts his/her rights and needs appropriately, 0-6 points). Parents completed the questionnaire by circling yes or no for the included ten items.

Social Competence Questionnaire. The second instrument used in the study was a social competence questionnaire (see Appendix C.) This questionnaire was developed by the three researchers and was based on the TOP curriculum. The questionnaire addressed the same areas as the parent survey: social competence (11 items), emotional maturity (12 items), and behavioral competence (12 items). Answers were scored on a Likert-type scale, ranging from 1 (never or rarely or less than 25% of the time) to 4 (almost or always true or greater than 75% of the time). Thus, social competence scores ranged 4-44, emotional maturity scores ranged 4-48,

behavioral competence scores ranged from 4-48. This questionnaire was filled out by the elementary school teachers of the TOP graduates.

In addition, teachers were asked five questions comparing TOP students with the remaining students in their class. These five questions also assessed: social competence, emotional maturity, and behavioral competence. Two assessed social competence, one assessed emotional maturity, and two assessed behavioral competence. These items were listed as “below the other children” (score=1), “on an average with the other children” (score=2), and “above the other children” (score=3). Thus, social competence scores could range from 2-10, behavioral competence scores could range from 2-10, and emotional maturity scores could range from 1-3.

Procedures

Letters of consent were sent out to all of the parents of children in the Top program for 2006 and 2007 (see Appendix A). The consent forms and parent surveys were sent in English and Spanish. Parents were offered a 25-dollar gas card for participating in this study. Only children whose parents signed the consent form and returned the parent surveys were then part of the study. Almost all parents rated their children as socially adept in all three areas; thus, the parent surveys were not used in the analysis.

In the 2008/2009 academic year the first round of surveys was sent to the first grade teachers of the 19 TOP students (TOP 2006 graduates) and the Kindergarten teachers of the 20 TOP students (TOP 2007 graduates).

E-mails were sent to teachers of all TOP participating children from the 2006 and 2007 classes with the social competence questionnaire sent as an attachment. As part of the email the project was explained to the teachers (see Appendix D), and they were offered a gift certificate

worth 35 dollars for participating. By returning the attachment filled out parents indicated their consent for participation.

For the 2008/2009 academic year the 2006 graduates were second graders; two had moved, and there were now 17 TOP graduates. The second grade teachers of the 17 TOP graduates were sent Social Competence Questionnaires. The TOP 2007 graduates were now first graders, three had moved, and there were now 17 TOP graduates. The TOP 2008 graduates were now Kindergarteners and there were 3. The teachers of the Kindergarteners were sent Social Competence Questionnaires.

CHAPTER 4

Results

The results address data analyses for the seven research questions. First a descriptive analysis for the first three questions will be presented this will be followed by statistical analysis for the fourth through seventh questions.

Descriptive Analysis

The first three research questions consist of the following: (a) what are TOP graduates behavioral competence scores as measured by the Social Competence Questionnaire? (b) What are TOP graduates social skills scores as measured by the Social Competence Questionnaire? and (c) What are TOP graduates emotional maturity scores as measured by the Social Competence Questionnaire? The first two years of data were combined for Kindergarten children (n=52), first grade children (n=37), and one year of 2nd grade children (n=22). The frequencies of scores indicate how often children exhibit the three dimensions of social skills (behavioral competence, emotional maturity, and social competence). A “4” indicates that children exhibit the behavior 75 % or more of the time; a “3” indicates that children exhibit the behavior between 50 % and 75 % of the time; a “2” indicates that the behavior is exhibited for 25 % to 50 % of the time; a “1” indicates that the behavior is exhibited for 0% to 24% of the time. No children scored at the “1” level. Frequencies of scores are reported for each grade level for behavioral competence, emotional maturity, and social competence (see Table 1.) Table 1 also reports the means and standard deviations for each variable and grade level. Second graders have the highest number of scores of “4” in all three areas.

Table 1

Frequencies, Standard Deviations, and Mean Scores for Behavioral, Emotional, and Social Competence for Kindergarten, First Grade, and Second Grade.

Social Ability/Grade	4 % (n)	3 % (n)	2 % (n)	M (sd)
Behavioral Competence				
Kindergarten (n = 52)	60 (31)	37 (19)	02 (2)	3.44 (.49)
First Grade (n = 37)	46 (17)	51 (19)	03 (1)	3.34 (.44)
Second Grade (n = 22)	73 (16)	23 (5)	04 (1)	3.60 (.48)
Emotional Maturity				
Kindergarten (n = 52)	52 (27)	33 (17)	15 (8)	3.50 (.73)
First Grade (n = 37)	35 (13)	46 (17)	16 (7)	3.08 (.67)
Second Grade (n = 22)	64 (14)	27 (6)	09 (2)	3.71 (.66)
Social Competence				
Kindergarten (n = 52)	52 (27)	42 (22)	06 (3)	3.55 (.56)
First Grade (n = 37)	41 (15)	51 (19)	08 (3)	3.36 (.55)
Second Grade (n = 22)	64 (14)	27 (6)	09 (2)	3.82(.66)

According to Table 1, over 90% of the children who are TOP graduates, in all three grades, use behaviorally competent and socially competent skills more than 50% of the time. In fact, at least 64% of the second-grade children use all three social skills appropriately 75% or more of the time.

Statistical Analysis

A paired samples *t-test* was used to answer research question 4: Will TOP graduates increase significantly in their behavioral competence scores, social competence scores, and emotional maturity scores as they move from Kindergarten to first grade or from first to second grade? No significant difference was found between Kindergarten and first grade, nor was there

a significant difference between first and second grade. One reason could be that many of the children are already using social skills in Kindergarten and first grade.

The last three research questions consisted of the following: (a) Do TOP graduates receive significantly higher ratings on behavioral competence (as measured by their teachers) than the *standard* or *average* on the Social Competence Questionnaire; (b) Do TOP graduates receive significantly higher ratings on emotional maturity (as measured by their teachers) than the *standard* or *average* on the Social Competence Questionnaire; and (c) Do TOP graduates receive significantly higher ratings on social competence (as measured by their teachers) than the *standard* or *average* on the Social Competence Questionnaire.

Because the teachers made the comparisons of the TOP graduates on the social skills to an *average* score for the class (the average indicating *equally competent*), a single sample t-test was used to answer these research questions. An analysis was utilized for each grade level: Kindergarten, first grade, and second grade. Behavioral competence and social competence had two questions with a possible score of 6. The *average* score was 4 (which indicates that TOP children are equally competent with their non-TOP peers); therefore 4 was the standard score used to compare with TOP graduates' scores. Emotional maturity had one question and the *average* score was 2 and this was used as the standard score with which to compare the TOP graduates' scores.

Table 2

Single Sample *t* Tests Indicating Comparisons of TOP Graduates Mean Rating with Rating of Equally Competent with Non-TOP Students in Behavioral Competence, Social Competence and Emotional Maturity

Social Skills	Kindergarten (N=52)		
	<i>df</i>	<i>t</i>	<i>p</i>
Behavioral Comp	51	1.02	.31
Social Comp	51	1.86	.07
Emotional Maturity	51	0	1.0
	First Grade (N=37)		
	<i>df</i>	<i>t</i>	<i>p</i>
Behavioral Comp	36	2.76	.00
Social Comp	36	4.54	.00
Emotional Maturity	36	1.96	.06
	Second Grade (N=22)		
	<i>df</i>	<i>t</i>	<i>p</i>
Behavioral Comp	21	4.18	.00
Social Comp	21	2.94	.00
Emotional Maturity	21	3.63	.00

Kindergarten scores were not significant in any of the three measured areas. Social competence indicated a trend toward differences; a larger sample size might show significant differences. First graders scores were significant in behavioral competence and social competence scores. Emotional maturity scores came in very close to significance; again, a larger sample size might provide significant difference. This significance indicates that TOP children use significantly greater social skills than non-TOP first graders. The findings show that the difference between TOP graduates and the rest of the class is significant for second graders in behavioral competence, social competence, and social maturity scores. These cross sectional data

indicate a greater difference in social skill use in TOP children than in children who did not attend the TOP program.

The findings indicated that kindergarten scores were not significant in any of the three areas measured. First grade score were significant in the areas of behavioral competence and social competence. Second graders were significant in all three areas.

CHAPTER 5

Discussion

The purpose of this study was to begin addressing the long-term development of TOP graduates in three dimensions of social skills: Behavioral competence, social competence, and emotional maturity. This phase of research covered the first two years of the longitudinal research project for the children who attend the Derby public schools. The methodology was adapted from several other longitudinal studies implemented in the 1970's. The most widely known long term evidence concerning the efficacy of early intervention comes from the Perry Preschool Study, the Carolina Abecedarian Project study, and the Chicago Child-Parent Centers study discussed in great detail in previous chapters.

Early childhood education has received widespread attention as one of the more effective ways to promote children's educational success. The early vision of Head Start was to offer children from economically impoverished homes learning opportunities their more advantaged peers had prior to entering public school (Zigler & Styfco, 2004). A national random assignment evaluation of Head Start (Issacs, 2008) found small to moderate effects for children assigned to Head Start compared to a control group of children who were not assigned to the program. Some recent historical data (Issacs, 2008) suggest that Head Start has had a long-term positive impact on education and crime. Due to a large amount of people interested in early childhood education and a lack of funding for Head Start programs, some states started their own version of a program for students from low-income families.

The Perry study (Schweinhart et al., 2005) looked at the effects of the preschool program on children through age 10 and found that fewer children who had been enrolled in the program were held back a grade or placed in special education than were children who had not been

enrolled in the program. This principal finding along with consistent, nearly significant program effects on achievement test scores from first through fifth grades inspired researchers to collect data from 14- and 15-year-olds who had been enrolled in the program, hoping to find even longer-term effects. The long-term study became a lifelong study. The Chicago Child-Parent Center study's results also showed that the preschool-program group did significantly better than the no-preschool group in educational performance and social behavior, with lower rates of grade retention, lower special education placements, higher rates of high school graduation, more years of education, lower rates of juvenile arrests, and fewer school dropouts. The Carolina Abecedarian Project study results reflected lower grade retention rates and fewer special education referrals among program group children.

The evidence base for these three programs is quite strong. The biggest methodological concern for the three studies comes from the small sample sizes (i.e., the Perry Preschool study and the Carolina Abecedarian Project study). Also, these three studies were implemented in the 1970s. This is one reason why the present study was implemented. The results of this study could help with the question: Would these programs still be effective if implemented today? Thus, five years ago the TOP program was implemented to meet the needs of children at risk in Wichita.

The first three research questions analyzed scores of the TOP graduates in the three dimensions of behavioral competence, social competence, and emotional maturity as measured by a Social Competence Questionnaire. The fourth research question analyzed scores in all three dimensions as the TOP graduates moved from Kindergarten to first grade and from first grade to second grade. The last three research questions analyzed scores of the TOP graduates compared to non-TOP children in their class in the three dimensions described earlier.

The results from the first three research questions indicate that the highest scores came from the second graders in all three areas. This indicates that second graders use behavioral competence, social competence, and emotional maturity skills more than 75 percent of the time. Some possible explanations for this finding might include more opportunities to use social skills (e.g., group activities and higher expectations from parents and teacher among the second graders). These results are consistent with previous studies. Previous studies (e.g., Perry Preschool study, the Carolina Abecedarian Project study, and the Chicago Child-Parent Center study) also documented that children enrolled in preschool environments showed better use of social skills than non-preschool enrolled children.

The last three research questions indicating comparisons of TOP graduates mean rating with rating of equally competent with non-TOP students in behavioral competence, social competence and emotional maturity showed significance in all three dimensions among second graders. These same results were not seen among Kindergarteners and first graders. One possible explanation for this might be the already high rates of social skill use among the Kindergarten and first grade students. Previous studies have documented that these trends continue well beyond school age well into adulthood. Results when examining scores of TOP graduates in all three dimensions as they aged from Kindergarten to first grade and first grade to second grade showed no statistical significance.

Limitations

The results of this study should be interpreted with some limitations in mind. Limitations of this study include small sample sizes, no control group, and no random assignment. The first limitation is the small sample size. A larger sample size would help provide a certain level of confidence that the selected sample comes as close as possible to truly mirroring the population.

As previously mentioned the Perry Preschool study and the Carolina Abecedarian Project studies were also scrutinized due to their small sample sizes.

The second limitation in the present study was the lack of a randomized control group. A control group is very important to experimental research and is critical in evaluating the pure effects of the independent variable on the measured responses of the participants. A control group of non-TOP children in this study would have created a stronger research design and increased the validity of the present study. Chicago Child-Parent Centers study also had a somewhat weaker design relying on a matched comparison group rather than random assignment. In a true experiment, the researcher should create equivalent groups of subjects through the process of random assignment to the treatment conditions. This is somewhat controversial in preschool research. The positive effect of early childhood education research is the reason why random assignment has been seen as controversial in preschool studies. Who do you deny these positive effects of preschool education and who is included in the control group?

The fourth limitation of the present study comes from the research design itself. Attrition may be a major threat to the validity of the results in longitudinal research. Attrition was present in all three preschool experiments; the Perry Preschool study, Carolina Abecedarian Project, and the Chicago Child-Parent Centers study, and may also be a factor in the current study.

Future Research

Future research might focus on a more socio economic diverse sample. This would help answer the question; do programs serving middle income families have the same magnitude of effect on child outcomes as those programs serving low-income families? Future research could also concentrate on the use of a bigger sample including the use of a control group to help measure the effects of preschool programs on social skills.

Another area of future research might be the effects of early childhood education on children's intellectual performance. The Carolina Abecedarian Project was the first study to find preschool benefits throughout participant's schooling on their intellectual performance and academic achievement.

The last area of future research might be the effects of early childhood education on social behavior including crime and employment in adulthood. Research evaluating the Perry Preschool Program found that adults at age 40 who had the preschool program had higher earnings, were more likely to hold a job, had committed fewer crimes, and were more likely to have graduated from high school than adults who did not have preschool.

In conclusion, the current study found that these data begin to suggest a greater difference in social skill use in TOP than in non-TOP children. This phase of research covered only the first two years of the longitudinal research project. It will be important to see if this present trend can continue to be seen as these children progress through the education system.

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APPENDIXCES

Appendix A

TOP Evaluation Project
Consent Form
Spring, 2008

Your child is invited to participate in an important study. We hope to learn how being a student at TOP Learning Centers improves a child's chance for success in elementary school. In order to learn as much as we can, it would be best to have all TOP students involved in the study. The information we learn will be used to improve TOP Learning Centers and other preschools. With the results, TOP Learning Centers would like to help the State of Kansas offer all 3 and 4-year old children the chance to attend preschool and prepare them to succeed in school.

If your child participates in the study, it means you agree to:

- 1) Allow your child's teacher to complete a survey once a year asking questions about your child's progress and behavior in class.
- 2) Agree to complete a brief parent survey, when requested, which will ask questions about how you think your child is doing in school and at home.
- 3) Give TOP administrators permission to look at your child's permanent student file from Kindergarten through 5th grade.

Any information collected about your child will remain confidential and will be disclosed only with your permission. This consent form does not give TOP Learning Centers permission to release any information about your child by name. Study results may be published but no individual study participants will be identified.

You are under no obligation to allow your child to participate. You may withdraw your child from this study at any time. Your decision whether or not to allow your child to participate will not affect your future relations with TOP Learning Centers, public school systems or Wichita State University.

If you have any questions about this study, you may contact Janice Smith or linda.bakken@wichita.edu. If you have questions about your child's rights as a study participant, or about a study-related injury, you may contact the Office of Research Administration at Wichita State University, Wichita, KS 67260-0007, (316) 978-3285.

Your signature on this consent form indicates that you have read the information above and voluntarily agree to have your child participate in this study. You will be given a copy of this consent form to keep.

Signature of Parent or Legal Guardian

Date

Print Name

Phone Number

Janice Smith, TOP Learning Center Executive Director
Date

Appendix B

Child's Name _____

Gender M F

Child's Birth Date _____

Child's School _____

Parent Survey

My Child

- | | | | |
|-----|--------------------------------------------------------------------|-----|----|
| 1. | Has friends and socializes with others | Yes | No |
| 2. | Cares about others | Yes | No |
| 3. | Takes turns and shares fairly easily with others, most of the time | Yes | No |
| 4. | Communicates well with others | Yes | No |
| 5. | Usually gives reasons for his/her actions | Yes | No |
| 6. | Asserts his/her rights and needs appropriately, most of the time | Yes | No |
| 7. | Expresses frustration and anger appropriately, most of the time | Yes | No |
| 8. | Usually tells the truth | Yes | No |
| 9. | Is succeeding in school | Yes | No |
| 10. | Usually follows rules and behaves appropriately | Yes | No |

Appendix C

Social Competence Questionnaire

Definitions for responses:

- 1 = never or rarely (less than 25% of the time)*
- 2 = sometimes true (between 25% and 50% of the time)*
- 3 = often true (between 50% and 75% of the time)*
- 4 = almost or always true (greater than 75% of the time)*

The child

1	Is accepted rather than neglected by other children.	1	2	3	4
2	Is invited by other children to join them in play, friendship and work.	1	2	3	4
3	Approaches others positively.	1	2	3	4
4	Expresses wishes and preferences clearly and gives reasons for his/her actions.	1	2	3	4
5	Asserts his/her own rights and needs appropriately.	1	2	3	4
6	Expresses frustration and anger effectively and without harming others, him/herself or property.	1	2	3	4
7	Takes turn fairly easily.	1	2	3	4
8	Negotiates and compromises with others appropriately.	1	2	3	4
9	Accepts and enjoys peers and adults of diverse background or ethnic groups other than his/her own.	1	2	3	4
10	Is verbally abusive.	1	2	3	4
11	Will have all necessary materials needed.	1	2	3	4
12	Remembers routine daily schedule.	1	2	3	4
13	Attends class on time.	1	2	3	4
14.	Responds to changes without outbursts.	1	2	3	4
15.	Disrupts class.	1	2	3	4
16.	Completes individual and/or group tasks.	1	2	3	4
17.	Fulfills responsibilities with minimal supervision.	1	2	3	4
18.	Appears alert and able to focus attention.	1	2	3	4

19. Waits for his/her turn without intervention. 1 2 3 4

The child

20. Does not comply with teacher's directions 1 2 3 4

21. Fulfills classroom job responsibilities. 1 2 3 4

22. Complies with procedures in group situations. 1 2 3 4

23. Demonstrates problem solving with assistance. 1 2 3 4

24. Maintains self-control when faced with disappointment. 1 2 3 4

25. Is physically abusive. 1 2 3 4

26. Demonstrates knowledge of and works toward future rewards. 1 2 3 4

27. Uses personal skills to solve problems most of the time. 1 2 3 4

28. Responds when angry without hitting. 1 2 3 4

29. Spontaneously participates in classes. 1 2 3 4

30. Destroys property. 1 2 3 4

31. Will submit completed homework within designated time limits. 1 2 3 4

32. When approached by a familiar person, child will verbally greet the other person appropriately. 1 2 3 4

33. In either a group situation or one-on-one conversation, child will look at the person who is speaking to her or him. 1 2 3 4

34. When presented with a goal that cannot be reached, child will remain calm and begin a new activity. 1 2 3 4

35. When strong feelings are evoked, child will control his temper and verbalize his/her feelings appropriately. 1 2 3 4

Compared to the other children in the class,

36. This child's organizational skills are Below average Average Above average
37. This child's ability to follow rules are Below average Average Above average
38. This child's interactions with his/her peers are Below average Average Above average
39. This child's interactions with adults are Below average Average Above average
40. This child's ability to manage his/her emotions is Below average Average Above average

Appendix D

Dear Teacher:

As Part of the Opportunity Project Longitudinal Study Team, I am pleased to announce that TOP Early Learning Centers will be conducting a study to document the success of students who graduated from our program, which includes a student in your class. As you know, national studies show that children who experience an early childhood education, such as the one children received at TOP, begin school better prepared to learn and often experience lifelong benefits.

Therefore, we invite you to participate in a long-term study to document the experiences of children who graduate from TOP. This study would allow TOP, Derby Public Schools, and Wichita State University's Department of CESP, to follow these children's progress through school. We are interested in following students' academic performance, behavior patterns and successes. By participating in this study, you will help us evaluate the success of the TOP Early Learning Centers.

We would like you to fill out a short survey that would address the social, emotional, and behavioral patterns of children in your class who have graduated from TOP. For completing the surveys, we will send you a gift card in the amount of \$35.00 for Superior School Supplies that you may use in purchasing items for your use in teaching. The student in your class is Timothy Rogers. I am attaching a survey for Timothy. I truly would appreciate your returning the survey. If you have any questions, please feel free to e-mail me or call me (687-9402).

The children's names and personal records will be kept strictly confidential and not released as part of this study. Neither will your name be associated with the research project. The information gathered will be reported based on groups of children, such as a graduating class, not by individual child. Thank you for taking the time to consider participating in this important study. With your help we can make a difference in the lives of Kansas children.

Linda Bakken
Research Team
TOP Longitudinal Study