

Lindenwood University

Digital Commons@Lindenwood University

Dissertations

Theses & Dissertations

Spring 5-2009

A Study of Student Achievement in Missouri School Districts that Maintain a Preschool Program

Rebecca L. Bernard
Lindenwood University

Follow this and additional works at: <https://digitalcommons.lindenwood.edu/dissertations>



Part of the [Educational Assessment, Evaluation, and Research Commons](#)

Recommended Citation

Bernard, Rebecca L., "A Study of Student Achievement in Missouri School Districts that Maintain a Preschool Program" (2009). *Dissertations*. 560.

<https://digitalcommons.lindenwood.edu/dissertations/560>

This Dissertation is brought to you for free and open access by the Theses & Dissertations at Digital Commons@Lindenwood University. It has been accepted for inclusion in Dissertations by an authorized administrator of Digital Commons@Lindenwood University. For more information, please contact phuffman@lindenwood.edu.

Running head: Student Achievement and Preschool

A Study of Student Achievement in Missouri School
Districts that Maintain a Preschool Program

Rebecca L. Bernard

May, 2009

A dissertation submitted to the Education Faculty of
Lindenwood University in partial fulfillment of the
requirements for the degree of
Doctorate of Education
School of Education

DECLARATION OF ORIGINALITY

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


Full Legal Name: Rebecca L. Bernard

Signature: Rebecca L. Bernard Date: 7/3/09

A STUDY OF STUDENT ACHIEVEMENT IN MISSOURI SCHOOL DISTRICTS
THAT MAINTAIN A PRESCHOOL PROGRAM

Rebecca L. Bernard

This dissertation has been approved as partial fulfillment
of the requirements for the degree of
Doctor of Education
at Lindenwood University by the School of Education.



Dr. Terry Reid, Dissertation Chair

July 2, 2009
Date



Dr. Dennis Cooper, Committee Member

July 2, 2009
Date



Dr. Kevin Kopp, Committee Member

6-29-09
Date

ACKNOWLEDGEMENTS

I would like to thank the following people who have guided me academically and emotionally throughout this entire process: Dr. Terry Reid, Dr. Sherry Devore, Dr. Dennis Cooper, and Dr. Kevin Kopp. A special thank you also goes to my dissertation comrades for their support and guidance: Lisa Christiansen, Kathy Grover, and Richard Henson.

I would also like to thank the entire wonderful faculty and staff whom I have been blessed to work alongside. Without their continued encouragement, positive support, and simple prayers, I would not have accomplished this monumental task.

Finally I would like to thank my family: Christopher, Sarah and Jeremy, Abbi and Scott, and the puppies: your love and patience have made me everything I am today.

ABSTRACT

The availability of pre-kindergarten education has increased over the last few years, but public schools often lack consistency in providing a preschool program. In this quantitative study, the Missouri Assessment Program (MAP) scores of schools that offer an in-district preschool program were compared to those schools that do not offer an in-district preschool program. A Null Hypothesis was proposed: the presence of a preschool facility provided by a school district will not affect scores on standardized achievement tests. The percentage of those students who scored advanced or proficient on the MAP test in the areas of Math or Communication Arts for 2006-2008, in schools that do maintain a preschool facility, was compared to students who scored likewise, in schools that do not maintain a preschool facility. The purpose of that comparison was to determine if statistical significance exists that shows that the combined percentage of students who were tested in schools that did maintain a preschool facility in-district were significantly greater than the scores of those students in districts that do not maintain an in-district preschool. The analysis was repeated with the reporting districts sorted by student enrollment in

grades K-12 upon completion of the t-test comparison. In analyzing the data, the null hypothesis was accepted in 28 of 30 statistical analyses. Based on the overwhelming evidence of this study, the conclusion must be drawn that the presence or absence of a preschool has no effect on the percentages of students scoring at the advanced or proficient levels in the content areas of Communication Arts and Math on the MAP test for the testing sessions during the 2005-2006, 2006-2007, and 2007-2008 school years. Furthermore, the same conclusion can be drawn when the school districts are sorted by enrollment of fewer than or equal to 500, 501 to 1000, 1001 to 5000, and over 5000 enrolled K-12 students.

TABLE OF CONTENTS

LIST OF TABLES viii

KEY TO ABBREVIATIONS x

CHAPTER ONE - INTRODUCTION 1

 Background of the Problem 2

 Theoretical Framework 4

 Statement of the Problem 5

 Purpose of the Study 6

 Independent Variable 7

 Dependent Variable 7

 Null Hypothesis 8

 Research Questions 8

 Design of the Study 10

 Sample Population 11

 Data Analysis 11

 Limitations of the Study 13

 SUMMARY 14

CHAPTER TWO- REVIEW OF LITERATURE 16

 Introduction 16

 Evolution of Preschools 17

 Preschool Effectiveness 38

 Preschools as a Public Concern 46

 Qualities of an Exceptional Preschool 49

Summary	53
CHAPTER THREE- METHOD	58
Introduction	58
Purpose of the Study	59
Research Questions	60
Subjects and Sampling Procedure	62
Design of the Study	64
Sample Population	65
Data Collection	66
Data Analysis	66
Design Procedure	67
Instrumentation	68
Administration Procedures	70
Treatment of the Data	72
Summary	73
CHAPTER FOUR- RESULTS	75
Introduction	75
Results and Analysis of Data	76
T Test Analysis by MAP Score	78
MAP Math 2006	79
MAP Math 2007	80
MAP Math 2008	81
MAP CA 2006	83
MAP CA 2007	84

MAP CA 2008	85
T Test Analysis by Enrollment	86
MAP Math- Less than 500 Students	87
MAP Math- 501 to 1000 Students	89
MAP Math- 1001 to 5000 Students	92
MAP Math- over 5000 Students	94
MAP CA- Less than 500 Students	97
MAP CA- 501 to 1000 Students	100
MAP CA- 1001 to 5000 Students	103
MAP CA- over 5000 Students	106
Deductive Conclusions	110
Summary	111
CHAPTER FIVE- DISCUSSION	113
Introduction	113
Implications for Effective Schools	120
Recommendations	123
Summary	125
REFERENCES	128
VITA	137

LIST OF TABLES

Table 1. *Total MAP Percentage Proficient and Advanced by
No Preschool vs Preschool- 2006 Math* 79

Table 2. *Total MAP Percentage Proficient and Advanced by
No Preschool vs Preschool- 2007 Math* 80

Table 3. *Total MAP Percentage Proficient and Advanced by
No Preschool vs Preschool- 2008 Math* 81

Table 4. *Total MAP Percentage Proficient and Advanced by
No Preschool vs Preschool- 2006 CA* 83

Table 5. *Total MAP Percentage Proficient and Advanced by
No Preschool vs Preschool- 2007 CA* 84

Table 6. *Total MAP Percentage Proficient and Advanced by
No Preschool vs Preschool- 2008 CA* 85

Table 7. *2005-2008 Total Math MAP Percentage Proficient
and Advanced for Enrollment less than 500 by No
Preschool vs Preschool* 87

Table 8. *2005-2008 Total Math MAP Percentage Proficient
and Advanced for Enrollment 501 to 1000 by No
Preschool vs Preschool* 89

Table 9. *2005-2008 Total Math MAP Percentage Proficient
and Advanced for Enrollment 1001 to 5000 by No
Preschool vs Preschool* 92

Table 10.	<i>2005-2008 Total Math MAP Percentage Proficient and Advanced for Enrollment over 5000 by No Preschool vs Preschool</i>	94
Table 11.	<i>2005-2008 Total CA MAP Percentage Proficient and Advanced for Enrollment less than 500 by No Preschool vs Preschool</i>	97
Table 12.	<i>2005-2008 Total CA MAP Percentage Proficient and Advanced for Enrollment 501 to 1000 by No Preschool vs Preschool</i>	100
Table 13.	<i>2005-2008 Total CA MAP Percentage% Proficient and Advanced for Enrollment 1001 to 5000 by No Preschool vs Preschool</i>	103
Table 14.	<i>2005-2008 Total CA MAP Percentage Proficient and Advanced for Enrollment over 5000 by No Preschool vs Preschool</i>	106

KEY TO ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
CA	Communication Arts
CIERA	Center for the Improvement of Early Reading Achievement
MA	Math
MAP	Missouri Assessment Program
DESE	Department of Elementary and Secondary Education
MPP	Missouri Preschool Project
NAEP	National Assessment of Educational Progress
NCLB	No Child Left Behind
PAT	Parents as Teachers
SES	Socioeconomic Status

CHAPTER I

INTRODUCTION

Background of the Problem

Three fourths of the children in the United States, ages 3 to 4, are involved in a preschool program (Barnett & Hustedt, 2003). In response to a growing area of concern in our country, nearly one billion additional tax dollars will be added to state budgets that specifically address the need for early-childhood education (Goldsmith & Meyer, 2006). Although research supports early intervention as precursor for later school success, many states, while subsidizing early childhood education, still offer the majority of that education in the form of mixed-delivery programs (Barnett & Hustedt). These programs consist of a combination of public and private childcare in settings that range from the home to site-licensed businesses to churches to the public school setting (Barnett & Hustedt).

The National Assessment of Education recently reported that only 30% of the nation's fourth graders, on average, showed proficiency in the area of reading achievement (National Assessment of Educational Progress [NAEP], 2007) as far back as 1992. In response to this concern and other

similar achievement statistics, the No Child Left Behind (NCLB) act was signed into law in 2001 (United States Government, 2001). The text of this law suggested that these poor academic scores were a reflection of poor academic skills (United States Government). Further research indicated that academic skills, if both learned and practiced in lower grades, resulted in a positive effect on academic success in later years (United States Government). As a result, the Reading Excellence Act was replaced by two initiatives, Reading First and Early Reading First, as two components of the No Child Left Behind act (United States Government). The Early Reading First program had been designed to support early learning skills, including those of language, literacy, phonemic awareness, and pre-reading development, with an emphasis on those children from low income families, but the purpose of the program as stated is to "prepare young children to enter kindergarten with the necessary language, cognitive, and early reading skills to prevent reading difficulties and ensure school success" (United States Government, 2006, ¶1). This population of students had been identified through research from the National Assessment of Educational Progress 2001 which stressed that the scores of

America's lowest performing students had continued to decline (NAEP, 2007).

In the past, the United States, among other countries, had historically resisted the idea that the early years of education, even prior to Kindergarten entrance, might significantly impact school success (Kagan & Hallmark, 2001). Such a suggestion might even have implied failure on behalf of the family unit (Kagan & Hallmark). As a result, the idea of governmental intervention in regard to preschool education had been resisted on the grounds that, ideologically speaking, the government had no right to intervene in family affairs (Kagan and Hallmark). Kagan and Hallmark further stated that any attempt at government-sanctioned day care was dismissed as sub par, as was any suggestion of day care or preschool related to the public school system. Parents resisted the idea of lower quality care, while at the same time, suggested that the government should reduce the tax burden on families and thus allow them to stay at home and take care of their own families, (Bracey & Stellar, 2003). The government on the other hand, continued to bemoan the fact that many children enter formal K-3 reading instruction programs without the necessary pre-literacy skills to truly benefit from structured reading instruction (NAEP, 2007). The idea of a

sound preschool education is therefore a response to needs identified on the familial level, as well as on the governmental level (Bracey and Stellar). As a result, the focus on the education of a child prior to Kindergarten entrance has taken on a new importance: the quality of public schooling of preschool-aged children (Early Reading First, 2007).

Theoretical Framework of the Study

Early education opportunities have the potential to be invaluable to the educational success of children in the state of Missouri (Parents as Teachers, 2007). Providing a preschool opportunity within the context of the public school setting may prove to be a necessity, if student scores in schools with preschool programs in place consistently show positive gains (Barnett & Hustedt, 2003). If the presence of a preschool program has value to public schools, then school systems may choose to provide educational resources to children from the first contact with those children, through the Parents as Teachers program which serves children through age 3, past the present day gap in intervention of the 4 and 5-year old child to kindergarten entrance (Swim, 2007). However, if the presence of a preschool program has no effect on student gains in subsequent grades, then valuable funding

may need to be redirected to those programs that have a known positive effect on achievement test scores. To encourage the success of any child, the public school system should consider requiring the provision of any program, preschool or not, that provides a significant positive impact to these scores (Carter, 2002). Future examination of Missouri Assessment Program (MAP) indices in districts where successful programs are already in place can provide valuable direction (DESE, 2007).

Statement of the Problem

Goldsmith and Meyer (2006) reported that the benefits of providing early-childhood education are not issues for debate. They further stated that it is not understandable why only 20 states are moving toward the idea of a *universal preschool*- a program that requires the school to provide preschool educational services to all 3 and/or 4-year olds. Although every state provides some form of funding for early education, there remains no uniformity or "best practice" in place for providing these services with consistency and quality (Barnett & Hustedt, 2003). In Missouri, preschools may be operated with Title I funds on the federal level, with Missouri Preschool Project (MPP) grants on the state level, or with a purely tuition-based program on the district level, or a combination of all

three (Department of Elementary and Secondary Education [DESE], 2005). As a result the guidelines and accountability for each program are widely different.

While the availability of pre-kindergarten education has increased over the last few years, public schools in states like Missouri lack consistency in providing a preschool program within the school district (Barnett & Hustedt, 2003). In Missouri, school accreditation is based on student achievement, as measured by the Missouri Assessment Program (MAP), a reform that was generated as a result of the Outstanding Schools Act of 1993 (DESE, 2007). Additionally, schools must also adhere to similar educational reforms, as dictated by the No Child Left Behind Act of 2001 (NCLB), that set higher standards for student achievement (United States Government, 2001). As a result, a state that is focused on ever higher student achievement will mandate services and provide practices that have a potentially positive effect on student achievement (Swim, 2007).

Purpose of the Study

The purpose of this study was to determine if the existence of a preschool program within a public school district impacts MAP test scores. Furthermore, the question arises as to whether the presence of that preschool, while

being specifically maintained and operated by the encompassing school district, did indeed cause those scores to increase as a result of the focus on early intervention and preschool services that would result from having a preschool program as a component of the district.

Independent Variable

The independent variable of the study was the presence or absence of a preschool facility located within, and as a part of, the school district. The Department of Elementary and Secondary Education in the state of Missouri requires that each and every accredited school district in the state offer preschool services to parents and/or legal guardians who reside within the boundaries of that particular school (Department of Elementary and Secondary Education [DESE], 2005). However the resource standards listed as a component of the Missouri School Improvement Plan (MSIP) do not require that the district offer a preschool facility (DESE). As a result, not all districts in the state have opted to maintain their own preschool facility.

Dependent Variable

The dependent variable of this study was the MAP scores of those students who were tested in schools that do maintain a preschool as a part of the school district, as

opposed to those schools that do not have a preschool program in place to offer preschool-aged students.

Null Hypothesis

The presence of a preschool facility provided by a school district will not affect scores on standardized achievement tests.

Research Questions

With the understanding that school districts, while offering preschool services, may or may not offer an actual preschool (DESE, 2005), this researcher hopes to find a significant difference in the achievement test scores between those schools that maintain a preschool as a part of the actual district opposed to those that do not. The research questions then arise:

1. Is there a greater percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content area of Math, for the testing years of 2005-2006, 2006-2007, and 2007-2008, in schools that maintained a preschool that was operated as a part of the district than that of students in schools that did not operate a preschool on site as part of the district?

2. Is there a greater percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content area of Communication Arts, for the testing years of 2005-2006, 2006-2007, and 2007-2008, in schools that maintained a preschool that was operated as a part of the district, than that of students in schools that did not operate a preschool on site as part of the district?
3. Is there a greater percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content area of Math, for the testing years of 2005-2006, 2006-2007, and 2007-2008, as compared by student enrollment in grades K-12, in schools that maintained a preschool that was operated as a part of the district than that in schools that did not operate a preschool on site as part of the district?
4. Is there a greater percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content area of Communication Arts, for the testing years of 2005-2006, 2006-2007, and 2007-2008, as compared

by student enrollment in grades K-12, in schools that maintained a preschool that was operated as a part of the district than that in schools that did not operate a preschool on site as part of the district?

Design of the Study

In this quantitative study, the MAP scores of schools that offer an in-district preschool program and those schools that do not offer an in-district preschool program were compared, using the statistics program, Analyse-it. The data was disaggregated by combining the percentage of those students who scored advanced or proficient on the MAP test in the areas of Math or Communication Arts, in 2005-2006, in schools that do maintain a preschool facility, and comparing them to students who scored likewise in schools that do not maintain a preschool facility. The combined data were finally compared, using a paired t-test, to determine if statistical significance exists that shows that the combined percentage of students who scored advanced or proficient on the MAP test in the areas of Math or Communication Arts, who were tested in schools that did maintain a preschool facility in-district, was significantly greater than the scores of those students in districts that do not maintain an in-district preschool.

This t-test was repeated for the testing results of the years 2006-2007 and 2007-2008.

Upon completion of the t-test comparison above, the analysis was repeated with the reporting districts sorted by student enrollment in grades K-12: those reporting student enrollment of fewer than 500 students, 501-1000 students, 1001-5000 students and finally, those with over 5000 students. Again, the t-test analysis, using the statistics program Analyze-it, was repeated for each of the reported enrollment groups.

Sample Population

The population was limited to all third grade students in the state of Missouri who have taken the MAP test in the areas of Communication Arts and Math over the past three years. The scores were sorted into two categories: those from public schools that offer in-district preschool programs and those that do not. Further analysis sorted these groups of students based on district K-12 enrollment: fewer than 500 students, 501-1000 students, 1001-5000 students, and over 5000 students.

Data Analysis

The MAP test data used were taken from the Missouri Department of Elementary and Secondary Education MAP report for the past three years. Specifically targeted were the

Mathematics and Communication Arts scores for all 3rd grade students. The scores from each district in the state of Missouri were gathered and sorted by presence or absence of an in-district preschool program and analyzed, based on the added percentages of those that scored in the areas of advanced or proficient on a statewide level, and then, based on student enrollment in grades K-12.

The scores gathered from each school in the state were sorted into two groups: those that have a preschool program within the district and those that do not. Those data were then analyzed, based on the combined percentages of scores in the advanced or proficient categories. These students were also disaggregated in the areas of mathematics and communication arts and then by pupil enrollment in grades K-12.

Analysis of the test scores was then represented in a graphic form. The statistics program, Analyse-it, was used to determine if the scores reveal that percentages of students scoring in the advanced or proficient categories of the MAP communication arts and math tests, in those schools that have a preschool program within the district, are significantly greater than those students in attendance in schools that do not maintain a preschool facility in-district. This analysis was repeated, based on student

enrollment in grades K-12: fewer than 500 students, 501-1000 students, 1001-5000 students, and over 5000 students.

Limitations of the Study

The major limitations of this study were the confounding variables that have occurred during the time that has passed since the child entered school until testing took place. Those variables may include, but are not limited to, differences in teachers and their relevant teaching styles, curriculum in preschool and primary school settings, individual student potential for achievement as well as socioeconomic factors of the school, community or child. In addition, no data existed to prove whether or not the third grade child was continuously enrolled in said reporting district regardless of preschool offerings. Data do not exist that supported the attendance of the third graders who may have attended private or parochial preschools. In addition, the study was limited to those school districts that are located within one Midwestern state and to those school districts that reported both preschool enrollment data and MAP test scores in the areas of Math and Communication Arts for three consecutive years: 2005-2006, 2006-2007, and 2007-2008. Finally, the study did not include private, parochial, or charter schools and those school districts that, due to poor student

achievement, are not under the direct control of the Department of Elementary and Secondary Education for the state of Missouri.

Summary

A question may be raised as to when effective education takes place, while concern for the need for instilling critical skills at an early age is never debated (Early Reading First, 2006). Nor is the idea that children who read well in the lower grades tend to be more successful in upper grades a new concept (Early Reading First, 2006). Furthermore, no debate disputes the fact that children who fall behind stay behind (NCLB, 2001). However, should the education that children so desperately need begin with a preschool setting, or should a parent or caregiver wait until the child enters a formal kindergarten education to begin such instruction? Could providing a sound preschool setting give children the edge necessary to guarantee that success which could be carried over to the elementary, middle, and upper grades and even eventually the workplace? Research shows that preschoolers during their third and fourth years of age grow very rapidly in the areas of language use and knowledge of reading and writing (Partnership for Reading, 2003). Schools must assume some responsibility in ensuring that these children

have been provided the stimulus needed for their future success (Educational Research Service, 2002). As these same schools continue to be challenged to produce higher and higher test scores in order to maintain their existence, they can no longer afford to ignore this opportunity to start the process (Educational Research Service).

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

The concept of educating the children who are not yet school age is dependent upon the public perception of what exactly the term school-aged means. The current definition defines school-aged as those children who are 5 years old prior to August 1 of their kindergarten year (Department of Elementary and Secondary Education [DESE], 2005). History however, suggests that the main function of kindergarten was to serve the "nature and needs of children from 4 to 6 years of age" (Hill cited by Bloch, 1926/1987, p. 76). The actual beginning of the preschool concept of education originated in Europe during the seventeenth and eighteenth centuries, coupled with the revolutions in the areas of religion, philosophy, science, and industry, that changed the face of the world (Beatty, 1995). It was during this time period that childhood was identified as a "unique life stage" (Beatty, p.i) that, by definition, required specific types of care and child-rearing that focused on a more child-centered approach to education.

Evolution of Preschools

Barbara Beatty (1995) reports that prior to the 18th century, Johann Amos Comenius, a Moravian bishop and author of the first outline of the concept of universal education in his treatise, *Great Didactic*, reflected the increasing focus toward the education of the very young. Deeply affected by the violence of the Thirty Years War, Comenius committed his life to the attainment of peace. He felt that a system of universal education, whereby all children were educated together, regardless of age, would promote social harmony and thus provide the end of political violence. Although he did not advocate a formal education outside the home for children under the age of six, he did advocate a formalized system of instruction for each one (Beatty). Comenius designed a full curriculum for the very young, to be implemented by the mother upon completion of breast feeding, in a healthy environment such as the home (Beatty). This curriculum would be divided into three areas that defined what a child should be able to say, should be able to do and should know (Beatty). Children under the age of six, Comenius relates, should obtain knowledge in each of eight areas: "natural things, optics, astronomy, geography, chronology, household affairs, history and politics" (Beatty, 1995, p. 3). Beatty (1995) also reported

that Comenius felt that children should acquire skills in each of five fields: dialectics, arithmetic, geometry, music, and manual activities. Contrary to the rigorous curriculum that Comenius advocated for the young, he did warn about the potential harm of excessive early education. Like many theorists of the time, Comenius frequently used analogies from nature to warn about the negative effects. Beatty (1995) reports that he warned that a young tree shoot planted too early "grows feebly and slowly" and that a horse put "prematurely to the carriage becomes weak" (p. 92). Regardless, Comenius was credited with the introduction of a naturalistic form of education that was targeted to benefit better healthier young children (Beatty).

In terms of the impact of the evolution of the concept of preschool education in America, British doctor John Locke had a far greater effect (Beatty, 1995). Even though Locke did not advocate the education of children outside the home, he did, however, encourage parents to let children play on their own, set the right example for their children and use reason as a method of discipline (Beatty). Dr. Locke also encouraged parents to begin the education process with their children as soon as they could walk, and to treat that learning process like play (Beatty). Locke's

ideal education for the younger child, that requested that parents include free play, also suggested that parents need to break with the customs of their past child-rearing experiences and trust themselves to look inwards to determine what was really good for their children (Beatty).

Throughout the 19th century, many types of schools included the education of a 4-year old as an accepted portion of the curriculum (Bloch, Seward, and Seidlinger, 2001). Public schools typically served the children, ages 4 and above, from poorer families, in an effort to educate and provide good moral character for those obviously lacking in those skills due to their impoverished background, while children, also from age 4 and above, from wealthier families, were sent to private schools, where they too were expected to learn moral character, values, appropriate and proper behavior and even prereading skills (Bloch, Seward, and Seidlinger). Rural and one-room schools included 4-year olds and often children even younger, whereas urban schools had infant schools modeled after similar settings in Great Britain (Bloch, Seward, and Seidlinger, 2001). In the early 1800's, Robert Owen, a British industrialist and student of social reform, developed and organized infant schools both in Scotland and the United States (Beatty, 1995). He took a personal

interest in the encouragement of these infant schools in the United States, giving speeches to Congress prior to his first school establishment on American soil in New Harmony, Indiana (Beatty). However, financial disputes and theoretical dissensions caused the school to close not long after the infant school project ended (Beatty).

By the mid 1800's, these schools had begun to decline, as experts in education warned that confining children, under the age of eight in schools, might cause precocity, epilepsy, or even insanity (Bloch, Seward, and Seidlinger). In the home, the traditional roles of men, women and children began to change even before the advent of industrialization. Society was moving from the more self-sufficient agrarian lifestyle to a more isolationist/private existence. Fathers worked outside the home, mothers were homemakers rather than producers alongside the husband and children were viewed as dependents rather than contributors to the family (Beatty, 1995). Mintz and Kellogg (Beatty, 1995, p. 21) describe the shift as a "domestic revolution." The fathers' authority in regard to the family declined and the mothers stepped in to become the educators of a new generation of Americans, investing more time in educating themselves in the science of child-rearing (Beatty). The social shift also made an

impact on indigent mothers. They, however, were encouraged to send their children to charity infant schools, where they would be saved from the societal taint of their underprivileged position (Beatty, 1995).

While American society was undergoing momentous change in regard to the family and the education of the child, a new pedagogy that would forever impact the concept of early education of young children in the United States was evolving. Friedrich Froebel had decided on a career change at the age of 22 (Beatty, 1995). Having been a forester all his young life, he was given the opportunity to study at a Johann Heinrich Pestalozzi model school that emphasized the theory of the education of the young including concrete experience, discovery learning and creative play (Beatty). In 1816, Beatty reported that Froebel set up his first school founded on the educational theories that he believed. After nearly 20 years, the institution of his dreams was established in what is now Germany, and where the phrase *kindergarten* or *child garden* was first used to describe Froebel's idea that children learn through play (Beatty, 1995). Although Froebel's system was based on what he termed "natural laws," such as the law of unity, the law of opposites or the law of connectedness, Beatty reported that the use of specified play with Froebel's own "gifts

and occupations," as he called them was the foundation of his educational system (Beatty, 1995, p. 40). Froebel described over 20 gifts and occupations, Beatty reports, that were based on geometric concepts or activities that were designed around a folk craft. Each gift and complementary activity was the product of sound rationale and was considered to be advanced for the mid 19th century, in terms of developmental child philosophy (Beatty). The occupations were modeled after activities that were considered to be common for peasant work, such as weaving and sewing and various other activities that, by today's standards, required fine motor skills that were not yet developed (Beatty). Regardless Froebel made up finger plays, games, songs and outdoor activities to add to his strenuous curriculum, including the motto "Come, let us live with our children" (Beatty, 1995, p. 44). *Mutter- und Koselieder* (1843) or *Mother Play* was the summary of Froebel's philosophy about the importance of play for children (Beatty, 1995). The book, Beatty reported, was filled with poems, finger plays and songs that encouraged developmentally appropriate activities for mothers and those who worked with children on a daily basis. The first section outlined bonding activities for mothers and infants while breast-feeding, as well as activities that included

body awareness and imitation; the second taught numerical concepts and classification, the third introduced abstract knowledge, through drawing attention to distant objects like the sun and moon, while the last section included social games and games with moral themes (Beatty). Froebel believed his book to be a guide that addressed his concern that increasing modernization and urbanization destroyed a child's opportunity to engage in natural play (Beatty). The natural teachers throughout Froebel's teachings were women who he felt, along with children, were "the most oppressed and neglected of all" classes in society (as cited by Beatty, 1995, p. 48). Beatty also reported that Froebel went so far as to state that the root of all social problems could be traced to the under-evaluation of the maternal function of women in society. The solution to this problem, Froebel argued, was to reunite women of all shapes, sizes and walks of life with children (Beatty, 1995). To do so, Froebel suggested the creation of an institution that would successfully rear children from toddlerhood through school age (typically, though not exclusively, defined as ages 4-6)- a universal kindergarten, that the liberalists of German society could embrace (Beatty). However, in 1851, after forty-four kindergartens opened, Beatty reported, the current

political power in Germany declared that kindergarten schools were atheist in nature and encouraged subversion. In 1852, shortly before his death, Beatty shared that Froebel sent an inquiry to his nephew in the United States regarding possible interest in furthering his educational plans abroad, where Americans took up the idea of kindergarten education as an example of educational reform.

Both Lazerson (1970) and Beatty (1995) report that the shift toward Froebelism began to mesh with the present domestic ideology when the first public school kindergarten was started in 1873 in St. Louis, Missouri, the idea of William H. Harris, who later became the U. S. superintendent of public school instruction and an advocate for kindergartens which included the education of the 4-year old child. Kindergartens modeled on the German concept had previously existed but were the products of German immigrants, that provided for their own children rather than the public, and were designed to preserve German culture as well as promote Froebel's ideals (Beatty, 1995). The first actual kindergarten was established in 1856 in Watertown, Wisconsin, by Margarethe Meyer Schurz, who was an advocate of the Froebelian philosophy of education through gifts and occupations (Beatty). Kindergarten programs began surfacing throughout the United States, but

the legacy of the German-American kindergarten made its strongest impact through the publication of how-to guides, one of the most noticeable of which was *The Paradise of Childhood*, written by Edward Wiebe and published by Milton Bradley (Beatty). This text provided a detailed script that told kindergarten teachers and mothers exactly what to say or do to instruct kindergartners in an appropriate manner, using common terms and regularity in all manners of teaching (Beatty). Through the century, the German kindergarten philosophy continued to mesh with the American philosophy. The most influential text for aspiring kindergarten teachers was the *Kindergarten Guide*, written by Maria Krause-Boetle and John Krause and published by Ernst Steiger in 1877, and much admired by Elizabeth Peabody, the staunchest advocate of, and individual most responsible for, the American kindergarten movement (Beatty, 1995). One of Peabody's goals was to overcome public resistance to the concept of educating young (preschool) children (Beatty). In her own version of the book, *Kindergarten Guide*, she stressed the differences between a school designed for school-aged children and a school designed for preschool children (Beatty). She argued that a kindergarten school would be taught by teachers who lovingly led children to learning through the process of

play, and with the understanding that the teacher is expected to play with the children (Beatty). She also stressed the difference in the physical environment of the kindergarten school as opposed to the regular school; the kindergarten school consisted of at least two classrooms that were well-lighted and well-ventilated and that allowed for music, singing and play, as well as quiet time (Beatty). The outdoor area, which surrounded the kindergarten school, should also be very different from the regular school, preferably in a grassy area with an adjoining garden (Beatty). In an effort to delve into a deeper understanding of the concept of kindergarten education, Peabody journeyed to Europe and, after touring several kindergartens in Germany, she returned to the United States and published her second *Kindergarten Guide* (Beatty, 1995). In this book, she repudiated some of her earlier findings, especially those that encourage the kindergarten child to be taught academics (Beatty). Instead, she felt that the true key to kindergartens was to model them on the basis of play, with the realization that this would be the child's most natural form of learning (Beatty). An earlier advocate of public kindergartens, she quickly changed her mind in fear that the wrong type of kindergartens might emerge and became, as a result,

instrumental in the regulation of kindergartens, lending prestige to the process of kindergartning and maintaining a clear distinction between the concepts of elementary schools vs. kindergarten schools (Beatty). An ardent follower of Froebelian kindergartens, Susan Blow, became the next influential force behind the kindergarten movement, aided in no small amount by the aforementioned William Torrey Harris, himself an advocate of Elizabeth Peabody's kindergarten philosophy (Beatty). Harris had been impressed by Miss Blow's teaching ability that he had observed while she was substitute teaching in the St. Louis school while at the same time he had been unimpressed by her use of Froebel's kindergarten theory in her classroom (Beatty, 1995). After Blow traveled to New York and was able to study with Maria Kraus-Boelte, at Harris's own suggestion, she returned to St. Louis, became a salaried employee and started the first public kindergarten school in the 1872-1873 school year (Beatty).

In the late 1870's, another type of kindergarten education began to emerge- a kindergarten based on the concept of educating the poor in charity kindergartens (Beatty, 1995). These kindergartens began to spread all across the east coast, as more and more wealthy, socially-conscious women grasped at the opportunity to be socially

active through the sponsorship of causes related to children and education (Beatty, 1995). A leader in this area, Pauline Shaw, was instrumental in the spread of free kindergartens in the east, particularly in Boston's north end, where the children were the poorest examples of the degraded and overcrowded (Beatty). Others grasped at the importance of her kindergarten programs and as a result, four of the most capable teachers whom Shaw employed in her kindergartens were instrumental in some of the first experiments in child study involving the preschool-aged child (Beatty, 1995). G. Stanley Hall, the first American to study young children in a systematic manner, used these four teachers to survey young students on the content of their knowledge of the natural world (Beatty). The results of his studies were twofold: on the one hand, he was astounded at how little the children he surveyed knew about the natural world, while, on the other hand, he was astounded at the advantage those children who had attended kindergarten- even those considered underprivileged- had over those who did not (Beatty). Although Hall would later be criticized for the limited scope of his studies, his support for kindergarten education was indisputable (Beatty).

In the late 1800's, the kindergarten movement continued throughout the country, expanding from those first public kindergartens in St. Louis to include free kindergartens in the Louisville and Chicago areas (Beatty, 1995). These movements resulted in a Free Kindergarten Association, sponsored by Anna Bryan (Beatty, 1995). These kindergartens, along with those that were established by John Dewey at the University of Chicago Laboratory School and by Jane Addams at Hull House, reported that, among the educational benefits of kindergartens, this type of education could also serve as a preventative measure for urban crime (Beatty, 1995).

From 1873 to 1930, educating the child from ages 4-6 years continued to rise in importance (Lazerson, 1973). Debates ensued concerning the type of education- whether to concentrate on a standardized type of primary curriculum or to move toward a more scientific or professional curriculum that would then prepare the 4- to 6-year-olds for adult life (Lazerson). The reform movement for experimental kindergartens began to manifest itself by promoting such ideas as small group instruction and half-day programs, while the curriculum for 5-year-olds, however, began to evolve into one that closely resembled that of a first grade curriculum (Lazerson). The true kindergarten class

curricula maintained the progressive educational ideas of Dewey and Hill, that concerned the educator with children's physical and emotional development, as well as the importance of social interaction and play with other kindergartners (Bloch, 1987). By 1912, approximately 9 percent of the kindergarten-aged children in the United States were enrolled in kindergarten (Beatty, 1995). The number of public schools offering kindergartens continued to increase, but private kindergartens still maintained the majority of graduating children, although the kindergarten pedagogy now began to address the concern of articulating the curriculum with the regular school-aged curricula already in place in both public and private schools (Beatty, 1995).

In the 1920's a new term began to emerge: "Nursery School," and the use of this term seemed to partner the fact that 4-year olds began to be evicted from the 5-year old, same-age kindergartens that had become the norm (Bloch, 1987, ¶7). Kindergartens had become an established need with articles such as Gard's (1924) *The Influence of Kindergarten on Achievement in Reading*, and were well on their way to public funding (Bloch). In addition, the success that these kindergarten programs enjoyed led educators to experiment with the idea of schooling two,

three and four year old children outside the home (Beatty). Kindergarten funding suffered a tremendous blow during the depression, which also added to a decrease in the education of the four-year olds in kindergarten programs and in the overall number of kindergarten classes (Bloch). As a result, the growth of the nursery school programs met the needs of society for these children at that time (Beatty). These programs, also of European origin, operated quite differently than the kindergartens of that time (Beatty, 1995). The hours were much more varied, rather than the typical morning schools, and served students who were considered normal, as well as problem children (Beatty). The goals of the programs included educating and guiding parents, as well as the children (Beatty).

Bloch shared that, by the late 1940's and 1950's, the post World War II baby boom led to phenomenal increases in the enrollment of 5-year olds in kindergartens (1987). A renewed emphasis on loving and caring for preschoolers at their own homes during that same era, however, continued to cause numbers of 4-year olds in formal education to decline; hence the need for the nursery school to continue to grow, Bloch also reported. Oddly enough, no preconceived ideas were voiced in regard to the positive or negative effect of the nursery school on kindergartens as

the only preschool institutions being offered during the time (Bloch). However, Arnold Gesell is cited in 1927 as describing the nursery school as a project, and explains that it

...represents an effort to blend what is best in day-nursery and kindergarten practice, and to develop an institution which shall function in close physical and personal connection with the home... It may be part of the mission of the nursery school to point a way for the safe and logical development of the day-nursery. It may also be part of the mission of the nursery school movement to indicate new lines of development to the present-day kindergarten. Or is the nursery-school destined to replace the kindergarten? We hope that it will, at least, demonstrate the latent power of the American kindergarten and stir it into larger life. (Gesell cited in Bloch, Seward, and Seldinger, 1989, p. 15).

Gesell, a psychological theorist, is credited with extensive research in regard to the development of children as a contributing factor in their education (Beatty, 1995). Gesell also had completed clinical work that recognized the importance of using child guidance theory as a tool in the educational process for preschool-aged children (Beatty).

Beatty also reports that Gesell attributed failure in school to the developmental *unreadiness* of the child at the time the information was presented (1995). Gesell felt that if a child was found to be developmentally behind others in the class, the obvious answer was to hold that child back until such time as the developmental stages caught up with the academic stages (Beatty, 1995). In addition, Gesell also felt that kindergartners should be encouraged to connect with work that was being done with infant health and child welfare, as opposed to the work being done with older children in primary grades (Beatty). In addition Beatty reports, he proposed that this new concept of kindergarten education should undergo a restructuring that would concentrate on four major areas: developmental education, the education of the parents, provision for the handicapped and regulation of school entrance (1995).

During this controversial time in the evolution of the preschool, President Franklin Roosevelt, in an attempt to aid an emotionally, as well as financially, depressed society, established Works Progress Administration (WPA) nursery schools as a component of his New Deal (Beatty, 1995). These schools were largely for the poor but served to stimulate further nursery school growth outside the public school system (Beatty). The purpose of these

preschools was two-fold: to help both children and the economy (Beatty, 1995). The war effort created federal funding for preschool care for the children of those women involved in the war effort, and thus encouraged some states to provide public funding for nursery schools in public schools, which in turn served to reinforce the idea that preschool education is important for all children, not just the poor and disadvantaged (Goodykoontz et al., 1947). Goodykoontz's report also explained that nursery, primary, and kindergarten professionals gave strong support for public funding for both kindergarten and nursery schools. The report asked such questions as:

1. Are children at two, three, and four ready for formal education?
2. Isn't a home environment best for children of these ages?
3. Does not the public assumption of responsibility for young children deprive parents of their responsibility and of the benefits they would receive from the total care of their children?
4. Are the costs of nursery school and kindergarten prohibitive?
5. Are not children in groups subject to serious health hazards?

6. Isn't care of young children a welfare function, which should be exercised by welfare agencies?

The evolution of the nursery school continued its growth pattern into the early 1950's. Prior to that time, kindergartens had become remarkably similar to nursery schools, in that they were divided into two classes, morning and afternoon (Bloch, 1973). The morning class consisted of 4-year olds, while the afternoon consisted of the 5-year old group; in addition, the description of the 4-year old curriculum corresponded with the traditional nursery school idea- play and socialization-oriented practices for the most part (Bloch).

In the early 1950's, the average enrollment for each session had grown to a student teacher ratio of about 40:1 (Bloch). The need for classroom space and teachers forced schools to prioritize, and 4-year olds began to be excluded from many kindergarten programs, even through several states had passed laws that lowered the school entrance age to allow funding for those under six years of age, and other states continued the trend by passing permissive preschool guidelines (Beatty, 1995). However, 4-year olds continued to be admitted into kindergarten programs up through the 1960's, but many felt that this was due to a fifth birthday shortly after school began (Bloch).

After the succession of Lyndon Johnson to the presidency, the historic "War on Poverty" began, with an embedded emphasis on a targeted welfare service for poor children entitled, Project Head Start (Beatty, 1995, p.194). This model was never intended to emphasize a universal preschool education, a fact reinforced by the members of the guidance team for the program, consisting of male pediatricians, psychologists and federal workers (Beatty). This program was based on the finding of three new studies concerned with psychological research involving boosting the intelligence of the preschool-aged child (Beatty). The first study was based on the works of J. Vicker Hunt and was outlined in his book *Intelligence and Experience*, the premise of which was the importance of early intervention for children (Beatty). The second was based on the work of Benjamin Bloom, the educational psychologist whose works suggested that about half of human intelligence is determined by the time the child is four years old (Beatty). The third study was based on the works of Cornell University psychologist, Urie Bronfenbrenner, who suggested that parental involvement was the most important determiner of intelligence in the preschool-aged child (Beatty, 1995). Not until mid-1965 did the program actually come under the control of true preschool

educators, who at that time were determined that the program should not be considered a downward extension of the public school (Beatty). Rather it was designed as a preschool action program combined with the medical community, to meet the needs of the poor and underprivileged (Beatty). However in the south during the late 1960's the Head Start Program also took on the persona of a reading readiness tool for the black community, due in part to the sponsorship of the Child Development Group of Mississippi (CDGM), a role that set the stage for the argument that programs such as Head Start raise the awareness of the importance of early childhood intervention, which, in turn, could indeed be responsible for raising the I.Q. of the preschool-aged child (Beatty). The success of the Head Start program has impacted later bills that emphasize the importance of education and care of the young such as the Comprehensive Child Development Act of 1971 (Beatty). The emphasis began to shift from the question of whether or not we should educate the young to what components make that preschool education effective. In 2005 alone, twenty United States governors mentioned the need for investment in preschool or early childhood education, in their state of the union addresses, while an additional six more mentioned proposals that would increase

the funding for these programs by an additional \$600 million (Goldsmith & Meyer, 2007). The current Head Start budget has over \$6.8 million appropriated (Goldsmith & Meyer).

Preschool Effectiveness

Historically speaking, the idea of sending a 4-year old to preschool is neither new nor without past debate. Based on the same historical evidence, the concept of a child in preschool is more often the rule rather than the exception, regardless of current public outcry. Why, then, beyond the need for childcare, did we begin educating the child prior to the mandated legal school age? Obviously the answer lies beyond the realm of child care and well within the realm of actual student achievement.

Proponents of equal opportunity preschool education maintain arguments that discredit the equity of educational opportunities and continue to bolster the concern that preschool opportunities should be at the public expense, in a fairer manner than solely based on an obviously unequal opportunity (Bower, 1985). This premise is derived from the concern that low-income, minority, or at-risk students need the extra edge that a preschool education could provide (Bower). Bower also cites further arguments that stress that "catching children early" (p. 24) will not increase

costs to the public school, rather it will decrease costs. In addition Bower also found that advocates suggested that costs for special education would be reduced, as will welfare payments, and even care for juvenile delinquents. Indeed Bower cited that study after study shows instances where intensive preschool experiences prior to formal education have had a positive effect on student achievement specifically in mathematics and reading. Joan Sprigle and Lyn Schaefer of Florida State University cited a marked increase in these scores of black students from Jacksonville, Florida, who had been selected to participate in an intensive preschool education study at the ages of 4 and 5 years (Bower). In addition, Bower also cited that far fewer of these children were held back a grade or had need of additional special education classes (1985). In this particular study, however, researchers were quick to point out that preschool is only one component that leads to school success and that other factors such as parents' education, occupation and presence in the home, as well as the child's birth order must be considered (Bower, 1985). Nonetheless positive results were noted in those children who had attended preschool (Bower).

Three studies provided even further evidence that a high-quality daycare or preschool setting will produce long

term positive outcomes for those children involved. One study, the Abecedarian Project, has been funded through the University of North Carolina since 1972 (Bracey & Stellar, 2003). In this particular study Bracey and Stellar share that children were identified at birth and provided daycare, 50 weeks a year from birth until kindergarten entrance, where adults interacted with the children in an increasingly more concept and skill-oriented manner. As the group became older, group oriented activities were initiated as well (Bracey & Stellar). One group stayed intact until the age of 8, while the control group began to receive the benefits of an enrichment program right after they started school (Bracey & Stellar). Children in both groups were fed an enriched diet to reduce the chances that nutrition might cause differences in brain growth (Bracey & Stellar). Also, should a student show signs of a lag in any developmental areas, he or she was pulled from the study and referred to a relevant social agency while social work and crisis intervention services were constantly available to families in the control group (Bracey & Stellar, 2003). As other preschool opportunities became available in this particular community, some of the children from the control group were sent independently from the group (Bracey & Stellar). The study's results were

noted in a follow-up done 16 years later: members of the project completed more years of schooling, completed higher levels of schooling, and worked at more highly skilled jobs (Bracey & Stellar). In addition Bracey and Stellar reported that the project students were less apt to smoke or use marijuana, but no difference was noted in the use of alcohol or in binge drinking. Higher reading and math skills were noted in the project group, both areas having been tested at ages 8, 12, 15, and 21; overall, the project group fared better (Bracey & Stellar).

The second study of the long-term effects of preschool education was the Chicago Child-Parent Center Program, also reported by Bracey and Stellar (2003). The largest scale of the three tests, these children were not randomly assigned to experimental and control groups and the study took place in 20 different center locations (Bracey & Stellar, 2003). The curriculum was restricted to three major areas: body image and gross motor skills, perceptual/motor and arithmetic skills, and language, with strong parental involvement emphasized by frequent home visits (Bracey & Stellar). In the follow-up study of this project, those subjects at age 21 showed lower crime rates, higher school completion rates, and less retention in grade levels (Bracey & Stellar).

The third study stood as a true landmark for the belief that a high-quality preschool education would have a positive effect on the outcomes of those participating in the program (Bracey & Stellar). The High/Scope Perry Preschool Project was started in the 1960's, when African American children in Ypsilanti, Michigan were randomly assigned to receive the program (Bracey & Stellar). Bracey and Stellar report that this randomization was an effort to decrease systematic bias in the groups, but no guarantee of their sameness can exist. The first group of preschoolers received one year of the program, but latter groups received two (Bracey & Stellar). The first group of children attended the preschool for a half day for eight months, with weekly 90-minute home visits by staff members was an additional requirement of the program (Bracey & Stellar, 2003). The curriculum for the project was based on the teachings of Piaget and other behaviorists who perceived children to be active learners, while the developers of this program identified 10 areas of the preschool experience that must be included: creative representation, language and literacy, social relations and personal initiative, movement, music, classification, seriation (series and patterns), number, space, and time, with an emphasis on constructivist and

cognitive/developmental approaches (Holmann & Weikart , 1995 cited by Bracey & Stellar). In opposition to the predominant preschool theory of direct instruction, the preschool teachers rarely assessed the specific knowledge levels of the children (Bracey & Stellar). Follow-up studies took place with the subjects at the ages of 19 and 27: at 19 years of age, those who had participated in the program had higher graduation rates (specifically females), were less likely to have been receiving special education services and also achieved higher scores on the Adult Performance Level Survey, a test from the ACT (American College Testing) Program that measures responses to real-life problem simulations (Bracey & Stellar). A second study was completed and a higher level of students at 27 years of age from the project group had earned high school diplomas, had a higher average income, owned their own homes, and had longer and more stable marriages, while the control group noted twice as many arrests, and five times as many members of the control group had been arrested at least five times (Bracey & Stellar, 2003).

The studies previously mentioned have shown a marked tendency to identify and serve students who have come from backgrounds that are often economically or socially disadvantaged. That tendency is neither new nor

misdirected. Since the 1960's many federal, state, and local programs have targeted these students, in an effort to equalize a playing field that they were given by birth, rather than by choice (Bracey & Stellar). The emphasis of these programs was often designed to prepare preschool children of low socioeconomic status for the challenges that education in a public school setting will often bring, while other programs tried to further equalize these playing fields by improving the achievement levels of these children through special education programs that provide the attention that might promote success and allow them to rise above their current levels of poverty (Bracey & Stellar, 2003). The numbers of children who existed at these levels of poverty were astounding in a nation of the caliber of the United States (Bracey & Stellar).

The problem that researchers have identified in terms of our impoverished children is that of a nation struggling to keep up with the problem of poverty, without being fully committed to solving it (Renchler, 1993). The United States has had the highest incidence of poverty of the Western nations- a figure that continues to be on the rise. Twenty-five percent of our population was made up of young people while these young people, represent 40% of our poor population. Many of these children were black or Hispanic,

nearly 85%, and nearly 40 % of impoverished children under the age of six live in large cities (Cohen 1993). Cohen further cited several sources that state that low-socioeconomic status (SES) children were more likely to have educationally damaging circumstances in their lives, such as prenatal exposure to drugs and AIDS, low birth weight, poor nutrition, lead exposure, and personal injuries/accidents. Cohen also reported that poor youth from inner-city environments were seven times more likely to be the victims of child abuse or neglect. Consequently the drop-out rate was reflective of these circumstances- as many as one million at-risk students drop out each year; the cost of not assisting these children was phenomenal in terms of lost personal income; dropouts from the class of 1981 yield a loss of more than \$238 billion, not including an additional \$68 billion lost in tax revenues (Renchler, 1993).

Increased concern that the government must now become involved in issues related to work and childcare stemmed from several major changes in our social system, occurring in employment patterns and family organization (Lubeck, 2001). Trends in the economic pattern included the speculation that two incomes are required to maintain a family in comfort (Lubeck). Lubeck suggested that this

change was a result of the fact that the annual wages of over one third of the new jobs created since 1978 pay below the poverty line for a family of four. In addition, Lubeck also reported that well-paying jobs in industry were on the decline, while newer jobs had been created in the service sector, typically lower paying in nature. Women's salaries of the average similar job continued to stay at about 60% of the men's earnings (Lubeck). The author defined families as being "dual-earner" rather than "dual-career" families (Lubeck, 2001, p. 9). An additional factor was the increase in female-headed households- the U.S. Census reports that, while most children live with both parents, the number who live with their mothers alone is steadily increasing (Lubeck, 2001). The final factor, that was previously alluded to, is the number of employed mothers of school-aged children, that forced a heightened need for extrafamilial care (Lubeck). The need for the development or expansion of preschool programs increased with each reported statistic.

Preschools as a Public Concern

A public program for preschoolers could serve all preschoolers or just a targeted population; public servants such as legislators trying to be re-elected lean toward the latter idea. Lubeck (2001) cited two reasons: first, a

case can be made that a particular subgroup might be especially deserving and second, serving *some* is decidedly cheaper than serving *all*. Lubeck further suggested that minority four-year olds from a disadvantaged SES were often the targeted population. Lubeck then posed several questions: are we, in fact, isolating these children and, thereby, fostering income and/or racial segregation? If we were going to fund a public preschool, we should have considered the question of curriculum all together. Will we encourage a traditional preschool premised on the belief that children come to understand and make sense of their world through their own experience or an academic preschool where disadvantaged children are pushed in an effort to "catch-up" with their more socially advantaged peers? Lubeck then summarized that a hybrid form that is a combination of both would be our answer to the perfect, publicly-provided preschool (2001).

Some programs are already in existence for those school age children who are considered at-risk, such as the federally funded Title I programs, but early intervention was repeatedly the key (Lubeck, 2001). Again at the federal level, the Head Start program has made some progress in that area, providing funding for programs that target low-income or limited English speaking children when

no such program has existed to serve all preschoolers (Lubeck). Many repeatedly favor the expansion of public schools as the answer. The argument is made, Lubeck states, that public schools are safe, convenient, and universally available; the preschooler would not be segregated but rather attend school with his/her friends and siblings in his/her own neighborhoods in an equal opportunity-type setting. Public school preschools would have a steady source of income, set teaching standards, programs that are routinely monitored, and staff salaries that could be set and accompanied by benefits (Lubeck, 2001). Lubeck further shares that others argue that there is no such thing as an *equal* school and that more often than not, the preschool would become the victim of a centralized, bureaucratized, and expensive system. Furthermore, the regimented, highly structured education would be inappropriate for the preschooler and, finally, that existing childcare providers would be ousted from their jobs, as schools began to recruit more and more preschoolers to generate additional funds (Lubeck). Goldsmith and Meyer (2005) even suggest that the public school setting might not be ideal, but the effectiveness of early childhood education intervention is without argument. Regardless, Goldsmith and Meyer also report that our ever-

increasing concern with the importance of the issue of early childhood education has already shown to be effective in terms of the educational foundation our children are given. The authors reported that by age 10, the children in the United States have higher reading and math scores than their European counterparts (2007). Regardless of the location of the preschool, researchers agree that no setting would be successful unless certain qualities remain in place (Lubreck).

Qualities of an Exceptional Preschool

The qualities of an exceptional preschool differ very little from those that define a good elementary school. Schwartz (2001) suggested that the program in schools should promote the development of social and school-readiness skills for the child, as well as develop his/her interest in learning and begin the focus toward academic achievement. Hand in hand with the qualities mentioned, was an intense effort to incorporate parental education in such a way as to foster recruitment of the total family unit into the program (Schwartz). Parent education programs, services of social agencies, and even financial support would serve to strengthen the parental commitment to the education of the preschooler; a total family literacy program was suggested (Schwartz). Scherer (2008) stated

that producing long term benefits for the child in preschool must include linking the concepts of the early childhood experience with current brain research.

Terri Jo Swim (2007) suggests that the best preschools link the fundamentals of early childhood developmental theories with developmentally appropriate practices. Swim quotes a 1997 report by Bredekamp and Coople that suggests the 12 principles of child development and learning that should be used to provide the basis for the professional who works with young children. Those principles include:

1. Domains of children's development - physical, social, emotional, and cognitive - are closely related. Development in one domain influences and is influenced by development in other domains.
2. Development occurs in a relative orderly sequence, with later abilities, skills, and knowledge building on those already acquired.
3. Development proceeds at varying rates from child to child, as well as unevenly within different areas of each 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.

5. Development proceeds in predictable directions toward greater complexity, organization, and internalization.
6. Development and learning occur in and are influenced by multiple social and cultural contexts.
7. Children are active learners, drawing on direct physical and social experience as well as culturally transmitted knowledge to construct their own understanding of the world around them.
8. Development and learning result from interaction of biological maturation and the environment, which includes both the physical and social worlds that children live in.
9. Play is an important vehicle for children's social, emotional, and cognitive development, as well as reflection of their development.
10. Development advances when children have opportunities to practice newly acquired skills as well as when they experience a challenge just beyond their level of their present mastery.
11. Children demonstrate different modes of knowing and learning and different ways of representing what they know.

12. 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 psychologically secure (Bredekamp & Coople cited in Swim, 2007, p 1).

These theories are designed to assist teachers when predicting the behaviors of the preschool-aged child, interpreting those behaviors, establishing patterns of behavior, and, finally, when using this information to guide the decision-making practices of the teacher (Swim).

Other studies completed through the CIERA group (Center for the Improvement of Early Reading Achievement) also targeted the homes of those preschoolers, where education may take a back seat to economical concerns. Preschool programs that are especially beneficial to these groups include opportunities to listen, to examine printed materials, to talk about printed materials, to say nursery rhymes, and to begin to write messages (CIERA, 1998). Programs that do not currently offer these skills may be upgraded, researcher Alexandra Starr stated in the April 2002 issue of *Business Week*. Starr questioned whether a universal preschool program would be "worth the cost" and, after declaring yes, identified the need to uplift the teachers' skills as well as the program (p 98). Overall

the need to stress more education and less babysitting seems to be universally accepted. The brain of the child from ages 4-6 is optimum for teaching those skills that will prepare the child to be a good reader (Shaywitz cited by Scherer, 2003). During this time-frame, the neural systems are built that are responsible for fluent reading and the time is, therefore, ripe to teach phonemic awareness (Shaywitz cited by Scherer). At this age, children grow rapidly in terms of language use and the knowledge about reading and writing (p. 6). As a result, the preschool program for the child must be rich with printed materials, books and magazines that children may play with, as well as lots of items that display print such as labels and signs (Partnership for Reading, 2003). There should be many areas that offer opportunities to experience art, science, and even housekeeping (Partnership for Reading). Computers should be offered, as well as manipulative writing tools (Partnership for Reading). Alphabet letters made from many types of tactile materials should be available to help children pretend to read and write (Partnership for Reading).

Summary

Still, some critics have questioned the long-term benefits of a preschool program of any kind (Olsen, 1999).

The higher IQs, higher reading and achievement levels, higher graduation rates, and success in the workplace are either nonexistent or short-term. In addition, many critics feel that the long term benefits of the preschool experience are often phased out by the time the child exits third grade (Center for Mental Health, 2006). However, mounting evidence suggested that, while more research is always needed, preliminary studies do cite consistent success, at least through third grade (CIERA, 1998). However, the greatest successes remained consistent for those students who are economically disadvantaged (Entwisle, 1995). The question remains how to provide and maintain these programs in areas where they are so desperately needed, based on the demographic profiles of the population. The public investment in a preschool education is minimal, when compared to the benefits of such a preschool education in terms of enhanced achievement, fewer problems in the school setting, increased economic productivity and a lower incidence of delinquency and crime (Center for Mental Health).

One of the greatest concerns of those who advocate mandatory preschool for children has been the availability of a preschool facility (Bernard, 2008). Granted those who advocate such an educational opportunity are quick to point

out that the positive effects on student academic success are due, in no small part, to the presence of exceptional programs that provide the type of structured environment, coupled with socialization opportunities, that link participation in a preschool program to achievement (Bernard, 2008). However, the concern quickly arises over the availability of a high quality preschool program for all students (Bernard). Students who live in areas that are considered rural are often denied the privilege of attending a preschool that is staffed by qualified teachers (Smith, Patterson, & Doggett, 2008). Often rural communities lack the tax base to support a high-quality program, and parents in these communities often lack the funds necessary to afford high quality private child care or preschool programs (Smith et al). In addition, children in areas with higher rates of poverty are also often unable to access high quality childcare (Bernard). The question is raised as to whether or not the education of the preschool-aged child should be the responsibility of the public school. If every child is to be offered a high-quality preschool education, regardless of cost, regardless of availability, then the answer must be yes (Bernard). In providing for a preschool education opportunity for children in the public school, the system of educating the

very young would become unified in terms of standards and assessments, with and assurance of the validity and reliability of all instrumentation (Jehl, Patterson, & Doggett, 2008). In addition, adequate resources provided by both state and federal levels of funding would ensure that programs met performance standards that would ultimately result in public preschools with effective curriculum and instruction (Jehl et al). As a result, a continuum would be in place that would insure the alignment of the child's education from preschool to kindergarten through grade 3 (Jehl et al). As it stands right now, current public sponsored programs like Head Start and individually state-mandated universal preschools do not guarantee that children will attend highly qualified programs (Barnett, 2008). Barnett states that the only method for producing an effective preschool program would be through the process of increasing public investment. Indeed, Barnett continues, the most effective programs, in terms of providing the greatest educational, social and economic benefits, have been those provided by state and local programs. However, Barnett also states that similar results are produced by dissimilar programs, when the same resources and standards are available. Barnett concludes that these high quality programs can only be effective if the teachers of such

programs receive extensive supervision, not unlike the process in which those in the public school are routinely involved. Although standards of higher quality do not guarantee student success, regardless of age, Sharon Bergen of the Education and Training for Knowledge Learning Corporation shares that children can be successful with developmental opportunities at a very early age and a sound preschool education, such as one in the public school can combine the opportunity to intertwine learning through direct experience and fun (Bergren cited by Lester, 2008).

CHAPTER III

METHOD

Introduction

A child who attends school, at any age, is faced with innumerable opportunities to make choices that will have an effect on that child's success throughout his or her school career. What if a parent could find a tool that could be used prior to the child's first experiences in the school setting which might provide the jump-start needed to guarantee a greater degree of success for the child? The Marge Scherer (2007) reports that children who enter kindergarten with a basic foundation in early reading and math skills are more likely to be successful in later schools years. In addition, the study's primary researcher, Dr. Greg Duncan, found that these successes tend to be prevalent even in those children who have various social and/or emotional problems (Scherer). The study's findings also indicated that the strongest predictor of success was the knowledge of early math skills, primarily those that involve number understanding,

number order, and rudimentary math concepts (Scherer, 2007). The mastery of these skills alone not only predicted math success but also was found to be a significant predictor of reading success (Scherer). The findings in reading achievement based on math achievement were found to be as reliable as early mastery of vocabulary, letters, and phonetics (Scherer). The purpose of this study was to explore the possibility that the achievement test scores of students who attend a school district with a preschool in place as an extension of the district would be higher than those of students who attend a district that does not offer a preschool program. In fact, this researcher proposes that the percentage of students who score in the top two levels of the MAP test in the state of Missouri (Advanced and Proficient) will be consistently greater than the percentage of students who score in these two leveled areas in schools that do not maintain a preschool as part of the school district.

Purpose of the Study

The purpose of this study will be to determine if the number of students who scored in the advanced and proficient ranges of the MAP achievement test in the content areas of Math and Communication Arts, for the testing years of 2005-2006, 2006-2007, and 2007-2008, was

higher in schools that maintained a preschool that was operated as a part of the district. The hypothesis is that there will not be a greater percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content areas of Math and Communication Arts, for the testing years of 2005-2006, 2006-2007, and 2007-2008. In addition, the question is raised as to whether or not the population of the school district influences the results of that same testing process. In other words, if a school district is broken down into the categories of enrollment size of fewer than or equal to 500 hundred students, 501 to 100 students, 1001 to 5000 students and over 5000 students in grades K-12, will a difference be noted in the percentages of students who scored in the advanced and proficient ranges of the MAP achievement test in the content areas of Math and Communication Arts, for the testing years of 2005-2006, 2006-2007, and 2007-2008?

Research Questions

The following research questions were posed in this study:

1. Is there a greater percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content area of

Math, for the testing years of 2005-2006, 2006-2007, and 2007-2008, in schools that maintained a preschool that was operated as a part of the district than that of those students in schools that did not operate a preschool on site as part of the district?

2. Is there a greater percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content area of Communication Arts, for the testing years of 2005-2006, 2006-2007, and 2007-2008, in schools that maintained a preschool that was operated as a part of the district than that of those students in schools that did not operate a preschool on site as part of the district?
3. Is there a greater percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content area of Math, for the testing years of 2005-2006, 2006-2007, and 2007-2008, as compared by student enrollment in grades K-12, in schools that maintained a preschool that was operated as a part of the district than that of those in

schools that did not operate a preschool on site as part of the district?

4. Is there a greater percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content area of Communication Arts, for the testing years of 2005-2006, 2006-2007, and 2007-2008, as compared by student enrollment in grades K-12, in schools that maintained a preschool that was operated as a part of the district than that of those in schools that did not operate a preschool on site as part of the district?

Subjects and Sampling Procedure

The subjects of this analysis of data were confined to all public school, third grade students in the state of Missouri who were administered the Communication Arts and Mathematics subtests of the MAP achievement test, during the testing windows of the 2005-2006, 2006-2007, and 2007-2008 school years. In addition, the sampling procedure was limited to those public schools that reported MAP data in the areas of Communication Arts and Mathematics for all three years (DESE, 2007). Schools that did not report MAP data for all three consecutive years, by content area, and all private/parochial/charter schools were considered

exempt from the study. Finally, those public schools that, due to poor academic performance, had been placed under the direct supervision of the Missouri Department of Elementary and Secondary Administration were exempt from the sampling process (2007). No sampling procedure from the target population (Creswell, 2008) was necessary, based on the fact that all school districts in the state are required to administer the MAP test, and, thus, the sample was representative of all students. Each school was required to report the results of each test; the number of students who scored in the areas of advanced or proficient was sorted from the rest of the data and compared, based on the presence or absence of a preschool, maintained and located within the district (DESE, 2007). In addition, based on the fact that all students in the state were reported, the concern for external validity did not exist, as no extraneous factors were considered (Creswell). Likewise the concern for a confidence interval did not exist because the sample consisted of the entire population of students taking the MAP test during the testing sessions (Creswell).

In regard to student enrollment, the schools that had reported MAP data for all three consecutive years in both Math and Communication Arts were sorted into the following categories: schools with a K-12 pupil enrollment of fewer

than or equal to 500, schools with a pupil enrollment in grades K-12 of 501 to 1000 students, schools with a K-12 pupil enrollment of 1001 to 5000 students and finally, schools with a pupil enrollment in grades K-12 of over 5000. After each school was sorted by enrollment, the percentages of students scoring in the advanced and proficient levels was sorted from the rest of the data and compared, based on the presence or absence of a preschool, maintained and located within the district.

Design of the Study

In this quantitative study, the MAP scores of schools that offer an in-district preschool program and those schools that do not offer an in-district preschool program were compared, using the statistics program, Analyse-it. The data were disaggregated by combining the percentage of those students who scored advanced or proficient on the MAP test in the areas of Math or Communication Arts in 2005-2006 in schools that do maintain a preschool facility, and comparing them to students who scored likewise in schools that do not maintain a preschool facility. The combined data were finally compared, using a paired t-test as suggested by Jaisingh (2006), to determine if statistical significance exists that shows that the combined percentage of students who scored advanced or proficient on the MAP

test in the areas of Math or Communication Arts, who were tested in schools that did maintain a preschool facility in-district, were significantly greater than the scores of those students in districts that do not maintain an in-district preschool. This t-test was repeated for the testing results of the years 2006-2007 and 2007-2008, using a *p* value to consider significance (Jaisingh).

When the the t-test comparison above was completed, the analysis was repeated, with the reporting districts sorted by student enrollment in grades K-12: those reporting student enrollment of fewer than 500 students, 501-1000 students, 1001-5000 students and finally, those with over 5000 students, as suggested by Creswell (2008). Again, the t-test analysis process, using the statistics program Analyze-it, was repeated for each of the reported enrollment groups (Creswell).

Sample Population

The population was limited to all third grade students in the state of Missouri who have taken the MAP test in the areas of Communication Arts and Math over the past three years. The scores were sorted into two categories: those from public schools that offer in-district preschool programs and those that do not. Further analysis sorted these groups of students based on district K-12 enrollment:

fewer than 500 students, 501-1000 students, 1001-5000 students, and over 5000 students.

Data Collection

The MAP test data used were taken from the Missouri Department of Elementary and Secondary Education MAP report for the past three years. Specifically targeted were the Mathematics and Communication Arts scores for all third grade students. The scores from each district in the state of Missouri were gathered and sorted by presence or absence of an in-district preschool program, and analyzed based on the added percentages of those who scored in the areas of advanced or proficient on a statewide level, and then based on student enrollment in grades K-12.

Data Analysis

The scores gathered from each school in the state were sorted into two groups: those that have a preschool program within the district and those that do not. Those data were then analyzed, based on the combined percentages of scores in the advanced or proficient categories. These students were also disaggregated in the areas of mathematics and communication arts, and then by pupil enrollment in grades K-12.

Analysis of the test scores was then represented in a graphic form. The statistics program, Analyze-it, was used

to determine if the scores reveal that percentages of students scoring in the advanced or proficient categories of the MAP communication arts and math tests in those schools that have a preschool program within the district are significantly greater than those of students in attendance in schools that do not maintain a preschool facility in-district. This analysis was repeated based on student enrollment in grades K-12: fewer than 500 students, 501-1000 students, 1001-5000 students, and over 5000 students.

Design Procedure

This study was designed to determine if the percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content areas of Math and Communication Arts, for the testing years of 2005-2006, 2006-2007, and 2007-2008, was higher in schools that maintained a preschool on site. By definition, this preschool was operated as a part of the district.

In order to compile this data for comparison, a list was gathered of the public school districts in the state of Missouri that administered the MAP test in all three of the years 2005-2006, 2006-2007, and 2007-2008. The testing scores were then compiled by year and sorted, based on two criteria: the presence or absence of a preschool on site

and the number of students who scored in the advanced or proficient categories of the MAP test in the areas of communication arts and mathematics. This procedure was repeated for each of the years 2005-2006, 2006-2007, and 2007-2008.

After this data was compared using a one-tailed t-test, the process was repeated for the school districts, after being sorted by pupil enrollment: fewer than or equal to 500 hundred students, 501 to 100 students, 1001 to 5000 students and over 5000 students in grades K-12 as suggested by Creswell (2008).

Instrumentation

Based on the fact that the data that were analyzed included all of the public schools in that state of Missouri that took the MAP test for the years 2005-2006, 2006-2007, and 2007-2008, the reliability of measurement was quite high. However, as Fraenkel and Wallen (2006) stated, the degree of consistency varied from student-to-student and testing situation-to-testing situation, based on the context of the testing instrument. Even though the sample included every school, the test version varied from year to year (DESE, 2007).

The students' scores from schools that do or do not have a preschool on site had questionable validity, based

on several facts (Jaisingh, 2006). Primarily, the validity differed, based on the fact that many external factors affected the test scores, beyond the presence or absence of the preschool (Creswell, 2008). For example, the environmental factors of the student who took the test will have influenced the final score, regardless of the preschool presence. In addition, the compilation of scores from each year differed, based on the fact that the scores of every test taken varied from year-to-year, due to the profile of students that were tested (DESE, 2007). Furthermore, the preschool data were based on the districts that had reported preschool enrollment (DESE). This did not take into account those districts that may not have reported such data and/or those districts that, while not reporting district preschool data, did not have a majority of students attending a privately maintained preschool.

The student scores listed in this study were first entered into a spreadsheet design that listed the school district by name and sorted by the content areas of Communication Arts and Mathematics. All criteria were then sorted, based on test taking years reported: 2005- 2006, 2006-2007, and 2007-2008. The percentages of the student scores that were listed in the proficient and advanced levels were combined. Each school district was checked for

consistent reporting data for all three years in both content areas. Any school that did not report all three years in both content areas was excluded from the test. The districts were then identified, by year, as those that reported preschool enrollment in a district-maintained preschool and those that did not. The data from each year were then subjected to a one-tailed independent t-test to determine if the null hypothesis might be rejected (Creswell, 2008). This test was repeated by content area for each year.

After the aforementioned data were compiled, the school districts were then sorted based on enrollment in grades K-12: fewer than or equal to 500 hundred students, 501 to 100 students, 1001 to 5000 students and over 5000 students. The one-tailed independent t test was repeated by year for each content area in each subcategory of student enrollment, to determine if the null hypothesis might be rejected (Creswell, 2008). To ensure the anonymity of the students tested, no names were used during the compilation of the data.

Administration Procedures

Data were collected through the simple compilation of scores that are available on the Department of Elementary and Secondary Administration for the state of Missouri

website (DESE, 2007). No student identifiers, as defined by Jaisingh (2006), were used. The data identified the total percentage of third grade students per district tested who scored on the levels of advanced or proficient in the areas of Communication Arts or Math on the Missouri MAP test in the years 2005-2006, 2006-2007, and 2007-2008. After the percentages of students per both levels per year were identified, the schools were then compared on the basis of whether or not a preschool facility was maintained, as part of the school district (DESE). Student scores were then sorted and compared, based on enrollment: fewer than or equal to 500 hundred students, 501 to 100 students, 1001 to 5000 students and over 5000 students in grades K-12.

School districts that were included were required to report MAP data for students who scored in the advanced and proficient levels for all three years in both content areas (DESE, 2007). Schools that did not meet this criterion were not included. However, school districts that did or did not have a preschool, as part of the district, was not a consistent list throughout the 3 years of data gathering as some districts added a preschool service while others chose to discontinue the service (DESE). The enrollment data were representative of those schools that reported MAP data for students who scored in the advanced and proficient levels

for all three years in both content areas (DESE). However, a school was not restricted to an enrollment population subgroup, based on demographic changes in student enrollment data on a year-to-year basis (DESE).

Treatment of the Data

The data that were collected and compiled were entered into the computer analysis software program, Analyse-it for Microsoft Excel, version 2.12. This software package was used to determine if statistical significance in the percentage of third grade students per district tested, who scored on the levels of advanced or proficient in the areas of Communication Arts or Math on the Missouri MAP test in the years 2005-2006, 2006-2007, and 2007-2008, allowed for the rejection of the null hypothesis based on the determination of a p value (Jaisingh, 2006). The names of each district were entered into the computer and then compared on the percentages of students who scored in the top two levels of proficiency in the content areas of Communication Arts or Math on the Missouri MAP test in the years 2005-2006, 2006-2007, and 2007-2008. The schools that maintained a preschool as a part of the district were noted when the data was compiled. Comparisons were made between those combined percentages of students per district who scored in the levels of advanced and proficient in the

areas of Communication Arts or Math on the Missouri MAP test in the years 2005-2006, 2006-2007, and 2007-2008 in districts where schools maintained a preschool, as a part of the district, and in those that do not maintain a preschool, as a part of the district, as indicated by the t test analysis suggested by Creswell (2008).

Data were then collected, compiled and entered into the computer analysis software program, Analyse-it for Microsoft Excel, version 2.12, that considered the enrollment size of the school district. This software package was used to determine if statistical significance in the percentage of third grade students per district tested who scored on the levels of advanced or proficient in the areas of Communication Arts or Math on the Missouri MAP test in the years 2005-2006, 2006-2007, and 2007-2008 and based on the enrollment in grades K-12: fewer than or equal to 500 hundred students, 501 to 100 students, 1001 to 5000 students and over 5000 students allowed for the rejection of the null hypothesis, through the determination of the p value as defined by Jaisingh (2006).

Summary

The analysis of these data could be used to help districts determine the value of continuing a preschool program, in terms of student achievement results. However,

with the number of external factors that could influence students' scores, it would be difficult to positively correlate the number of students who score advanced and proficient in the areas of Communication Arts or Math on the Missouri MAP test with the presence of absence of a preschool as a part of the school district. However, this data could be used to argue the benefits of a preschool facility on site, or as a viable component of the district. As Beatty (1995) reminded, schools regularly and lawfully abide by the state and federal regulations that demand services for children who are handicapped or otherwise deemed "at risk." As more and more states pass legislation that demands preschool funding in local districts, services for these children, as a potentially at risk category, may provide a convincing argument for mandatory funding/programs in each individual public school district.

CHAPTER IV

RESULTS

Introduction

The purpose of this study was to determine if the percentages of students who scored in the proficient and advanced levels of the Missouri Assessment Program (MAP) test in the content areas of Math and Communication Arts, for the testing years of 2005-2006, 2006-2007, and 2007-2008, was higher in schools that maintained a preschool that was operated as a part of the district. The question was also raised as to whether the population of the school district influenced the results of that same testing process, when the school district is broken down into the categories of enrollment size of fewer than or equal to 500 hundred students, 501 to 100 students, 1001 to 5000 students and over 5000 students in grades K-12.

This study was designed to determine if the percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content areas of Math and Communication Arts for the testing years of 2005-

2006, 2006-2007, and 2007-2008, was higher in schools that maintained a preschool on site, that was operated as a part of the district. In order to compile these data for comparison, a list was gathered of the public school districts in the state of Missouri that administered the MAP test in all three of the years 2005-2006, 2006-2007, and 2007-2008. The testing scores were then compiled by year and sorted, based on two criteria: the presence or absence of a preschool on site, and the number of students who scored in the advanced or proficient categories of the MAP test in the areas of communication arts and mathematics. This procedure was repeated for each of the years 2005-2006, 2006-2007, and 2007-2008.

Results and Analysis of Data

The software package Analyse-it for Microsoft Excel, version 2.12 was used to determine if the statistical significance in the percentage of third grade students per district tested, who scored on the levels of advanced or proficient in the areas of Communication Arts or Math on the Missouri MAP test in the years 2005-2006, 2006-2007, and 2007-2008 allowed for the rejection of the null hypothesis. The names of each district were entered into the computer and then compared, based on the percentages of students who scored in the top two levels of proficiency in

the content areas of Communication Arts or Math on the Missouri MAP test in the years 2005-2006, 2006-2007, and 2007-2008. The schools that maintained a preschool as a part of the district were noted when the data was compiled. Comparisons were made between those combined percentages of students per district who scored in the levels of advanced and proficient in the areas of Communication Arts or Math on the Missouri MAP test in the years 2005-2006, 2006-2007, and 2007-2008 in districts where schools maintained a preschool as a part of the district, and in those that do not maintain a preschool as a part of the district. This data, with $n=518$, was then compared using a one-tailed independent t-test with a p value of < 0.05 and a confidence level of 95%, in an effort to reject the null hypothesis that there is no significant difference in the percentages of students that score on the advanced and proficient levels of the MAP test in the content areas of Math and Communication Arts for the years 2005-2006, 2006-2007, and 2007-2008, in those school districts that maintain a preschool.

Data were then collected, compiled and entered into the computer analysis software program, Analyse-it for Microsoft Excel, version 2.12, that considered the enrollment size of the school district. This software

package was used to determine if statistical significance in the percentage of third grade students per district tested who scored on the levels of advanced or proficient in the areas of Communication Arts or Math on the Missouri MAP test in the years 2005-2006, 2006-2007, and 2007-2008 and based on the enrollment in grades K-12: fewer than or equal to 500 hundred students, 501 to 100 students, 1001 to 5000 students and over 5000 students allowed for the rejection of the null hypothesis. The n value for each of the enrollment criteria differed slightly from year-to-year and was considered in the analysis of the data. The data were analyzed using a one-tailed, independent t-test with a p value of < 0.05 and a confidence level of 95%, in an effort to reject the null hypothesis that there is no significant difference in the percentages of students who score on the advanced and proficient levels of the MAP test in the content areas of Math and Communication Arts for the years 2005-2006, 2006-2007, and 2007-2008, in those school districts that maintain a preschool based on the enrollment in grades K-12.

T Test Analysis by MAP Score

Analysis of the data using the one-tailed independent t-test was used to answer research question one: Is there a greater percentage of students who scored in the advanced

and proficient ranges of the MAP achievement test in the content area of Math for the testing years of 2005-2006, 2006-2007, and 2007-2008, in schools that maintained a preschool that was operated as a part of the district, than that of those students in schools that did not operate a preschool on site as part of the district?

Table 1.

Total MAP Percentage Proficient and Advanced by No Preschool vs Preschool

2006 Math Data		
Preschool in place	n	Mean
No	307	42.35
Yes	211	41.33
<i>Mean Difference</i>		1.01
<i>95% CI</i>	-1.96 to 3.99	
<i>p value</i>	0.5047	

Note. Significance is measured at .05.

Table 1 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Math MAP test for the testing session during the 2005-2006 school year. With an n value of 518, 274 schools reported did not

have a preschool, while 244 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Math was 42.35 in schools without a preschool while the mean percentage of students in schools with a preschool was 41.33. With a *p* value of 0.5047, the null hypothesis was accepted.

Table 2.

Total MAP Percentage Proficient and Advanced by No Preschool vs Preschool

2007 Math Data

Preschool in place	n	Mean
No	295	43.66
Yes	223	43.62

Mean Difference 0.04

95% CI -2.96 to 3.03

p value 0.9810

Note. Significance is measured at .05

Table 2 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Math MAP

test for the testing session during the 2006-2007 school year. With an n value of 518, 295 schools reported did not have a preschool, while 223 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Math was 43.66 in schools without a preschool, while the mean percentage of students in schools with a preschool was 43.62. With a *p* value of 0.9810, the null hypothesis was accepted.

Table 3.

Total MAP Percentage Proficient and Advanced by No Preschool vs Preschool

2008 Math Data

Preschool in place	n	Mean
No	274	41.17
Yes	244	43.56
<i>Mean Difference</i>		-2.39
<i>95% CI</i>	-5.37 to 0.60	
<i>p value</i>	0.1167	

Note. Significance is measured at .05

Table 3 illustrated the results of the data analysis of the percentages of students who scored on the levels of

proficient and advanced in the content area of Math MAP test for the testing session during the 2007-2008 school year. With an n value of 518, 274 schools reported did not have a preschool, while 244 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Math was 41.17 in schools without a preschool while the mean percentage of students in schools with a preschool was 43.56. With a p value of 0.1167, the null hypothesis was accepted.

Analysis of the data using the one-tailed independent t-test was used to answer research question two: Is there a greater percentage of students that scored in the advanced and proficient ranges of the MAP achievement test in the content area of Communication Arts for the testing years of 2005-2006, 2006-2007, and 2007-2008, in schools that maintained a preschool that was operated as a part of the district, than that of those students in schools that did not operate a preschool on site as part of the district?

Table 4.

Total MAP Percentage Proficient and Advanced by No Preschool vs Preschool

2006 CA Data

Preschool in place	n	Mean
No	307	43.58
Yes	211	40.89

Mean Difference 2.70

95% CI 0.22 to 5.18

p value 0.0329

Note. Significance is measured at .05

Table 4 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Communication Arts MAP test for the testing session during the 2005-2006 school year. With an n value of 518, 307 schools reported did not have a preschool, while 211 school districts did maintain a preschool. The mean percentage of students that scored on the proficient and advanced levels of the MAP test in Communication Arts was 43.58 in schools without a preschool, while the mean percentage of students in schools with a preschool was 40.89. With a *p value* of 0.0329, the null hypothesis was rejected.

Table 5.

Total MAP Percentage Proficient and Advanced by No Preschool vs Preschool

2007 CA Data

Preschool in place	n	Mean
No	295	42.71
Yes	223	42.09

Mean Difference 0.62

95% CI -1.97 to 3.21

p value 0.6390

Note. Significance is measured at .05

Table 5 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Communication Arts MAP test for the testing session during the 2006-2007 school year. With an n value of 518, 295 schools reported did not have a preschool, while 223 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Communication Arts was 42.71 in schools without a preschool, while the mean percentage of students in schools with a preschool was 42.09. With a *p value* of 0.6390, the null hypothesis was accepted.

Table 6.

*Total MAP Percentage Proficient and Advanced by
No Preschool vs Preschool*

2008 CA Data

Preschool in place	n	Mean
No	274	40.08
Yes	244	39.88

Mean Difference 0.20

95% CI -2.49 to 2.89

p value 0.8834

Note. Significance is measured at .05

Table 6 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Communication Arts MAP test for the testing session during the 2007-2008 school year. With an n value of 518, 274 schools reported did not have a preschool, while 244 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Communication Arts was 40.08 in schools without a preschool, while the mean percentage of students in schools with a preschool was 39.88. With a *p value* of 0.8834, the null hypothesis was accepted.

T Test Analysis by Enrollment

Analysis of the data using the one-tailed independent t-test was used to answer research question three: Is there a greater percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content area of Math for the testing years of 2005-2006, 2006-2007, and 2007-2008, as compared by student enrollment in grades K-12, in schools that maintained a preschool that was operated as a part of the district, than those in schools that did not operate a preschool on site as part of the district?

Table 7.

2005-2008 Total Math MAP Percentage Proficient and Advanced for Enrollment fewer than 500 by No Preschool vs Preschool

Year	2006		2007		2008	
Preschool	n	Mean	n	Mean	n	Mean
N	163	42.31	161	42.47	157	39.70
Y	63	39.41	65	42.04	71	43.11
<i>Mean Difference</i>		2.90		0.43		-3.41
<i>95% CI</i>		-3.39 to 9.19		-5.83 to 6.69		-9.51 to 2.69
<i>p value</i>		0.3645		0.8933		0.2720

Note. Significance is measured at .05

Table 7 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Math MAP test for the testing session during the 2005-2006 school year in schools that had a student enrollment of fewer than 500 students in grades K-12. With an n value of 226, 163 schools reported did not have a preschool, while 63 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Math was 42.31 in schools without a

preschool while the mean percentage of students in schools with a preschool was 39.41. With a *p* value of 0.3645, the null hypothesis was accepted.

Table 7 also illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Math MAP test for the testing session during the 2006-2007 school year in schools that had a student enrollment of fewer than 500 students in grades K-12. With an *n* value of 226, 161 schools reported did not have a preschool, while 65 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Math was 42.47 in schools without a preschool, while the mean percentage of students in schools with a preschool was 42.04. With a *p* value of 0.8933, the null hypothesis was accepted.

Finally, Table 7 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Math MAP test for the testing session during the 2007-2008 school year in schools that had a student enrollment of fewer than 500 students in grades K-12. With an *n* value of 228, 157 schools reported did not have a preschool, while 71 school districts did maintain a preschool. The mean

percentage of students who scored on the proficient and advanced levels of the MAP test in Math was 39.70 in schools without a preschool, while the mean percentage of students in schools with a preschool was 43.11. With a *p* value of 0.2720, the null hypothesis was accepted.

Table 8.

2005-2008 Total Math MAP Percentage Proficient and Advanced for Enrollment 501 to 1000 by No Preschool vs Preschool

Year	2006		2007		2008	
Preschool	n	Mean	n	Mean	n	Mean
N	57	41.16	53	44.28	55	43.17
Y	57	39.78	62	42.86	63	40.37
<i>Mean Difference</i>		1.37		1.42		2.81
<i>95% CI</i>		-3.15 to 5.89		-3.97 to 6.81		-2.26 to 7.88
<i>p value</i>		0.5486		0.6033		0.2750

Note. Significance is measured at .05

Table 8 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Math MAP test for the testing session during the 2005-2006 school

year in schools that had a student enrollment of 501 to 1000 students in grades K-12. With an n value of 114, 57 schools reported did not have a preschool, while 57 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Math was 41.16 in schools without a preschool, while the mean percentage of students in schools with a preschool was 39.78. With a p value of 0.5486, the null hypothesis was accepted.

Table 8 also illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Math MAP test for the testing session during the 2006-2007 school year in schools that had a student enrollment of 501 to 1000 students in grades K-12. With an n value of 115, 53 schools reported did not have a preschool, while 62 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Math was 44.28 in schools without a preschool, while the mean percentage of students in schools with a preschool was 42.86. With a p value of 0.6033, the null hypothesis was accepted.

Finally, Table 8 illustrated the results of the data analysis of the percentages of students who scored on the

levels of proficient and advanced in the content area of Math MAP test for the testing session during the 2007-2008 school year in schools that had a student enrollment of 501 to 1000 students in grades K-12. With an n value of 118, 55 schools reported did not have a preschool, while 63 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Math was 43.17 in schools without a preschool, while the mean percentage of students in schools with a preschool was 40.37. With a p value of 0.2750, the null hypothesis was accepted.

Table 9.

2005-2008 Total Math MAP Percentage Proficient and Advanced for Enrollment 1001 to 5000 by No Preschool vs Preschool

Year	2006		2007		2008	
Preschool	n	Mean	n	Mean	n	Mean
N	74	42.40	68	44.89	51	41.89
Y	70	42.89	75	44.39	86	45.30
<i>Mean Difference</i>		-0.49		0.50		-3.41
<i>95% CI</i>		-4.38 to 3.40		-3.08 to 4.09		-7.25 to 0.43
<i>p value</i>		0.8040		0.7821		0.0817

Note. Significance is measured at .05

Table 9 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Math MAP test for the testing session during the 2005-2006 school year in schools that had a student enrollment of 1001 to 5000 students in grades K-12. With an n value of 144, 74 schools reported did not have a preschool, while 40 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Math was 42.40 in schools without a

preschool, while the mean percentage of students in schools with a preschool was 42.89. With a *p* value of 0.8040, the null hypothesis was accepted.

Table 9 also illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Math MAP test for the testing session during the 2006-2007 school year in schools that had a student enrollment of 1001 to 5000 students in grades K-12. With an *n* value of 143, 68 schools reported did not have a preschool, while 75 school districts did maintain a preschool. The mean percentage of students that scored on the proficient and advanced levels of the MAP test in Math was 44.89 in schools without a preschool, while the mean percentage of students in schools with a preschool was 44.39. With a *p* value of 0.7821, the null hypothesis was accepted.

Finally, Table 9 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Math MAP test for the testing session during the 2007-2008 school year in schools that had a student enrollment of 1001 to 5000 students in grades K-12. With an *n* value of 137, 51 schools reported did not have a preschool, while 86 school districts did maintain a preschool. The mean

percentage of students that scored on the proficient and advanced levels of the MAP test in Math was 41.89 in schools without a preschool, while the mean percentage of students in schools with a preschool was 45.30. With a *p* value of 0.0817, the null hypothesis was accepted.

Table 10.

2005-2008 Total Math MAP Percentage Proficient and Advanced for Enrollment over 5000 by No Preschool vs Preschool

Year	2006		2007		2008	
Preschool	n	Mean	n	Mean	n	Mean
N	13	47.68	13	49.52	11	48.81
Y	21	46.13	21	48.07	24	47.04
<i>Mean Difference</i>		1.55		1.45		1.77
<i>95% CI</i>		-8.72 to 11.82		-8.33 to 11.23		-8.93 to 12.47
<i>p value</i>		0.7607		0.7644		0.7383

Note. Significance is measured at .05

Table 10 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Math MAP test for the testing session during the 2005-2006 school

year in schools that had a student enrollment of over 5000 students in grades K-12. With an n value of 34, 13 schools reported did not have a preschool, while 21 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Math was 47.68 in schools without a preschool, while the mean percentage of students in schools with a preschool was 46.13. With a p value of 0.7607, the null hypothesis was accepted.

Table 10 also illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Math MAP test for the testing session during the 2006-2007 school year in schools that had a student enrollment of over 5000 students in grades K-12. With an n value of 34, 13 schools reported did not have a preschool, while 21 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Math was 49.52 in schools without a preschool, while the mean percentage of students in schools with a preschool was 48.07. With a p value of 0.7644, the null hypothesis was accepted.

Finally, Table 10 illustrated the results of the data analysis of the percentages of students who scored on the

levels of proficient and advanced in the content area of Math MAP test for the testing session during the 2007-2008 school year in schools that had a student enrollment of over 5000 students in grades K-12. With an n value of 35, 11 schools reported did not have a preschool, while 24 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Math was 48.81 in schools without a preschool, while the mean percentage of students in schools with a preschool was 47.04. With a p value of 0.7383, the null hypothesis was accepted.

Table 11.

2005-2008 Total CA MAP Percentage Proficient and Advanced for Enrollment fewer than 500 by No Preschool vs Preschool

Year	2006		2007		2008	
Preschool	n	Mean	n	Mean	n	Mean
N	163	43.97	161	42.35	157	39.60
Y	63	37.58	65	39.88	71	38.26
<i>Mean Difference</i>		6.39		2.47		1.34
<i>95% CI</i>		1.17 to 11.61		-2.96 to 7.90		-4.29 to 6.98
<i>p value</i>		0.0166		0.3707		0.6369

Note. Significance is measured at .05

Table 11 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Communication Arts MAP test for the testing session during the 2005-2006 school year in schools that had a student enrollment of fewer than 500 students in grades K-12. With an n value of 226, 163 schools reported did not have a preschool, while 63 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in

Communication Arts was 43.97 in schools without a preschool, while the mean percentage of students in schools with a preschool was 37.58. With a *p* value of 0.0166, the null hypothesis was rejected.

Table 11 also illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Communication Arts MAP test for the testing session during the 2006-2007 school year in schools that had a student enrollment of fewer than 500 students in grades K-12. With an *n* value of 226, 161 schools reported did not have a preschool, while 65 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Communication Arts was 42.35 in schools without a preschool, while the mean percentage of students in schools with a preschool was 39.88. With a *p* value of 0.3707, the null hypothesis was accepted.

Finally, Table 11 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Communication Arts MAP test for the testing session during the 2007-2008 school year in schools that had a student enrollment of fewer than 500 students in grades K-12. With

an n value of 228, 157 schools reported did not have a preschool, while 61 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Communication Arts was 39.60 in schools without a preschool while the mean percentage of students in schools with a preschool was 38.26. With a p value of 0.6392, the null hypothesis was accepted.

Table 12.

2005-2008 Total CA MAP Percentage Proficient and Advanced for Enrollment 501 to 1000 by No Preschool vs Preschool

Year	2006		2007		2008	
Preschool	n	Mean	n	Mean	n	Mean
N	57	41.57	53	41.71	55	40.52
Y	57	40.15	62	41.95	63	38.53
<i>Mean Difference</i>		1.42		-0.25		1.99
<i>95% CI</i>		-3.15 to 5.95		-4.95 to 4.46		-2.10 to 6.08
<i>p value</i>		0.5339		0.9166		0.3366

Note. Significance is measured at .05

Table 12 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Communication Arts MAP test for the testing session during the 2005-2006 school year in schools that had a student enrollment of 501 to 1000 students in grades K-12. With an n value of 114, 57 schools reported did not have a preschool, while 57 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in

Communication Arts was 41.57 in schools without a preschool, while the mean percentage of students in schools with a preschool was 40.15. With a *p value* of 0.5339, the null hypothesis was accepted.

Table 12 also illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Communication Arts MAP test for the testing session during the 2006-2007 school year in schools that had a student enrollment of 501 to 1000 students in grades K-12. With an *n value* of 115, 53 schools reported did not have a preschool, while 62 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Communication Arts was 41.71 in schools without a preschool, while the mean percentage of students in schools with a preschool was 41.95. With a *p value* of 0.9166, the null hypothesis was accepted.

Finally, Table 12 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Communication Arts MAP test for the testing session during the 2007-2008 school year in schools that had a student enrollment of 501 to 1000 students in grades K-12. With an

n value of 118, 55 schools reported did not have a preschool, while 63 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Communication Arts was 40.52 in schools without a preschool while the mean percentage of students in schools with a preschool was 38.53. With a *p* value of 0.3366, the null hypothesis was accepted.

Table 13.

2005-2008 Total CA MAP Percentage% Proficient and Advanced for Enrollment 1001 to 5000 by No Preschool vs Preschool

Year	2006		2007		2008	
Preschool	n	Mean	n	Mean	n	Mean
N	74	44.14	68	43.78	51	40.32
Y	70	43.19	75	43.25	86	41.44
<i>Mean Difference</i>		0.95		0.53		-1.12
<i>95% CI</i>		-1.99 to 3.88		-2.50 to 3.56		-4.71 to 2.46
<i>p value</i>		0.5243		0.7303		0.5365

Note. Significance is measured at .05

Table 13 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Communication Arts MAP test for the testing session during the 2005-2006 school year in schools that had a student enrollment of 1001 to 5000 students in grades K-12. With an n value of 144, 74 schools reported did not have a preschool, while 70 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in

Communication Arts was 44.14 in schools without a preschool, while the mean percentage of students in schools with a preschool was 43.19. With a *p value* of 0.5243, the null hypothesis was accepted.

Table 13 also illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Communication Arts MAP test for the testing session during the 2006-2007 school year in schools that had a student enrollment of 1001 to 5000 students in grades K-12. With an *n value* of 143, 68 schools reported did not have a preschool, while 75 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Communication Arts was 43.78 in schools without a preschool, while the mean percentage of students in schools with a preschool was 43.25. With a *p value* of 0.7303, the null hypothesis was accepted.

Finally, Table 13 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Communication Arts MAP test for the testing session during the 2007-2008 school year in schools that had a student enrollment of 501 to 1000 students in grades K-12. With an

n value of 137, 51 schools reported did not have a preschool, while 86 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Communication Arts was 40.32 in schools without a preschool while the mean percentage of students in schools with a preschool was 41.44. With a *p* value of 0.5365, the null hypothesis was accepted.

Table 14.

2005-2008 Total CA MAP Percentage Proficient and Advanced for Enrollment over 5000 by No Preschool vs Preschool

Year	2006		2007		2008	
Preschool	n	Mean	n	Mean	n	Mean
N	13	44.38	13	45.53	11	43.73
Y	21	45.10	21	45.13	24	42.67
<i>Mean Difference</i>		-0.73		0.40		1.06
<i>95% CI</i>		-9.52 to 8.06		-8.11 to 8.92		-8.21 to 10.32
<i>p value</i>		0.8671		0.9240		0.8180

Note. Significance is measured at .05

Table 14 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Communication Arts MAP test for the testing session during the 2005-2006 school year in schools that had a student enrollment of over 5000 students in grades K-12. With an n value of 34, 13 schools reported did not have a preschool, while 21 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Communication Arts was 44.38 in schools without a preschool while the mean

percentage of students in schools with a preschool was 45.10. With a *p* value of 0.8671, the null hypothesis was accepted.

Table 14 also illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Communication Arts MAP test for the testing session during the 2006-2007 school year in schools that had a student enrollment of over 5000 students in grades K-12. With an *n* value of 34, 13 schools reported did not have a preschool, while 21 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Communication Arts was 45.53 in schools without a preschool, while the mean percentage of students in schools with a preschool was 45.13. With a *p* value of 0.9240, the null hypothesis was accepted.

Finally, Table 14 illustrated the results of the data analysis of the percentages of students who scored on the levels of proficient and advanced in the content area of Communication Arts MAP test for the testing session during the 2007-2008 school year in schools that had a student enrollment of over 5000 students in grades K-12. With an *n* value of 35, 11 schools reported did not have a preschool,

while 24 school districts did maintain a preschool. The mean percentage of students who scored on the proficient and advanced levels of the MAP test in Communication Arts was 43.73 in schools without a preschool, while the mean percentage of students in schools with a preschool was 42.67. With a *p* value of 0.8180, the null hypothesis was accepted.

The purpose of this study was to determine if the percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content areas of Math and Communication Arts for the testing years of 2005-2006, 2006-2007, and 2007-2008, was higher in schools that maintained a preschool on site. Again, by definition, this preschool was operated as a part of the residing school district. The hypothesis of this study, stated simply in the form of the null hypothesis, that there would be no significant difference in the scores of those schools, in the areas of Math and Communication Arts, as measured by the MAP test for the state of Missouri, between those schools that maintained a preschool in district and those that did not. Furthermore, the lack of statistical significance would be repeated in the consecutive years of testing: 2005-2006, 2006-2007, and 2007-2008. In all, six areas of significance were

investigated. When the results were compiled, in five of the six areas tested, the null hypothesis was accepted with p values that ranged from 0.1167 to 0.9810. In the content area of Math, the null hypothesis was accepted for all three years of testing. In the area of Communication Arts, however, the null hypothesis was rejected in the 2005-2006 testing session, with a noted p value of 0.0356, but was accepted in the 2006-2007 and 2007-2008 testing sessions, with the remaining p values 0.6390 and 0.8834, respectively. However, the statistical evidence showed that schools that did not have a preschool performed better in the content area of Communication Arts, with a mean score of 43.58 versus 40.89.

When the reporting school districts were broken down into categories of student enrollment, again the null hypothesis was overwhelmingly rejected in both the areas of Math and Communication Arts in all schools districts, with or without a preschool, with p values that ranged from 0.0817 to 0.9240. This selection of schools included those with noted enrollments of fewer than or equal to 500, 501 to 1000, 1001 to 5000 and over 5000. One exception, however, was noted. In the area of Communication Arts, for the testing session of the 2005-2006 school year, in schools that had enrollments less than or equal to 500, a p

value of 0.0166 rejected the null hypothesis for statistical evidence that schools that did not have a preschool performed more poorly than those that did. Rather, the mean score for schools without a preschool, of fewer than or equal to 500 students in grades K-12, was 43.97, while the mean score for those without a preschool was 37.58.

Deductive Conclusions

The fact that the null hypothesis was accepted in 28 of 30 statistical analyses cannot be ignored. Rather than providing overwhelmingly supportive data for the existence of preschools, the analysis suggests that the presence or absence of a preschool has little or no impact on the number of children scoring at the advanced or proficient levels of the MAP test. It is interesting to note that in two separate instances, not only was there statistical evidence for the difference, but in the instance of results for schools that had a population of fewer than 500 students in grades K-12, in the content area of Communication Arts, the converse was true: a larger percentage of students in schools without a preschool scored higher in Communication Arts for the 2005-2006 testing session than the percentage of students that attended schools where a preschool was present. In regard

to the other exception to the null hypotheses acceptance, again a statistical significance was noted in the area of Communication Arts for the testing session of the 2005-2006 school year. In this instance, the statewide results for the percentage of students who scored in the advanced and proficient levels of the MAP test was higher in schools that had a preschool as compared to the percentage of students in those that did not. However, even though the p value of 0.0329 was less than .05, only moderate evidence exists to support rejection of the null hypothesis (Jaisingh, 2006). To draw reasonable conclusions based on the MAP data supplied for a third grade child in the state of Missouri is at best, very difficult. The lack of a definitive standardized assessment tools for children in grades K-2 makes it very difficult to assess immediate early childhood intervention results and waiting until the third grade for the MAP test may give misleading results, both positive and negative, for student achievement.

Summary

This study was designed to determine if the percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content areas of Math and Communication Arts for the testing years of 2005-2006, 2006-2007, and 2007-2008, was higher in schools that

maintained a preschool that was operated as a part of the district. When the data was analyzed, the null hypothesis was accepted in 28 of 30 statistical analyses. Based on the overwhelming evidence, the conclusion must be drawn that the presence or absence of a preschool has no effect on the percentages of students scoring at the advanced or proficient levels in the content areas of Communication Arts and Math for the testing sessions during the 2005-2006, 2006-2007, and 2007-2008 school years. Furthermore, the same conclusion can be drawn when the school districts are sorted by enrollment of fewer than or equal to 500, 501 to 1000, 1001 to 5000 and over 5000 enrolled K-12 students.

CHAPTER V

DISCUSSION

Introduction

The issue of the importance of preschool education is one that many adults fail to recognize and promote (Parents Magazine, 2006). *Parents* magazine reports that preschool education not only sets the stage socially for the success of a child entering school but also for the language skills that will serve the child throughout his/her school career (2006); In addition, the skills that a preschool foundation develops will carry over into the ensuing years of academia the child will encounter, as well as to serve to deter children who may be prone to social interactions that may result in serious discipline issues (Parents Magazine). Obviously then, the role of the preschool is to develop and encourage the range of experiences that serve to create an environment that will result in a child eager and enthusiastically motivated to learn (The Importance of Preschool Education, 1999).

The purpose of this study was to determine if the existence of a preschool program within a public school district impacts MAP test scores. The question was raised whether the presence of that preschool, specifically maintained and operated by the encompassing school district, increased those scores on standardized achievement tests, as shown through the practice of an increased focus on the important of early intervention and services provided as a result. In addition, is there a difference in the impact made by that preschool, based on the K-12 pupil enrollment of each school district?

In this quantitative study, the MAP scores of schools that offer an in-district preschool program and those schools that do not offer an in-district preschool program are compared, using the statistics program, Analyze-it. The data was disaggregated by combining the percentage of those students who scored advanced or proficient on the MAP test in the areas of Math or Communication Arts in 2005-2006 in schools that do maintain a preschool facility, and comparing them to students who scored likewise in schools that do not maintain a preschool facility. The combined data were compared, using a paired t-test to determine if statistical significance exists that shows that the combined percentage of students who scored advanced or

proficient on the MAP test in the areas of Math and Communication Arts who were tested in schools that did maintain a preschool facility in-district, were significantly greater than the scores of those students in districts that do not. This t-test will be repeated for the testing results of the years 2006-2007 and 2007-2008.

Upon completion of the of the t-test comparison above, the analysis will be repeated with the reporting districts sorted by student enrollment in grades K-12: those reporting student enrollment of fewer than 500 students, 501-1000 students, 1001-5000 students and finally, those with over 5000 students. Again, the t-test analysis using the statistics program Analyse-it, will be repeated for each of the reported enrollment groups in an effort to answer the questions below:

1. Is there a greater percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content area of Math for the testing years of 2005-2006, 2006-2007, and 2007-2008, in schools that maintained a preschool that was operated as a part of the district than that of those students in schools that did not operate a preschool on site as part of the district?

2. Is there a greater percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content area of Communication Arts for the testing years of 2005-2006, 2006-2007, and 2007-2008, in schools that maintained a preschool that was operated as a part of the district than that of those students in schools that did not operate a preschool on site as part of the district?
3. Is there a greater percentage of students that scored in the advanced and proficient ranges of the MAP achievement test in the content area of Math for the testing years of 2005-2006, 2006-2007, and 2007-2008, as compared by student enrollment in grades K-12, in schools that maintained a preschool that was operated as a part of the district than those in schools that did not operate a preschool on site as part of the district?
4. Is there a greater percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content area of Communication Arts for the testing years of 2005-2006, 2006-2007, and 2007-2008, as compared by

student enrollment in grades K-12, in schools that maintained a preschool that was operated as a part of the district than that of those in schools that did not operate a preschool on site as part of the district?

The purpose of this study was to determine if the percentage of students who scored in the advanced and proficient ranges of the MAP achievement test in the content areas of Math and Communication Arts for the testing years of 2005-2006, 2006-2007, and 2007-2008, was higher in schools that maintained a preschool on site that was operated as a part of the district. The hypothesis of this study, stated simply in the form of the null hypothesis, that there would be no significant difference in the scores of those schools, in the areas of Math and Communication Arts, as measured by the MAP test for the state of Missouri, between those schools that maintained a preschool in district and those that did not. Furthermore, the lack of statistical significance would be repeated in the consecutive years of testing: 2005-2006, 2006-2007, and 2007-2008. In all, six areas of significance would be investigated. When the results were compiled, in five of the six areas tested, the null hypothesis was accepted with p values that ranged from 0.1167 to 0.9810. In the content

area of Math, the null hypothesis was accepted for all three years of testing. In the area of Communication Arts, however, the null hypothesis was rejected in the 2005-2006 testing session, with a noted p value of 0.0356, but was accepted in the 2006-2007 and 2007-2008 testing sessions with the remaining p values 0.6390 and 0.8834, respectively. However, the statistical evidence showed that schools that did not have a preschool performed better in the content area of Communication Arts with a mean score of 43.58 versus 40.89.

When the reporting school districts were broken down into categories of student enrollment, again the null hypothesis was overwhelmingly accepted in both the areas of Math and Communication Arts in all schools districts, with or without a preschool, with p values that ranged from 0.0817 to 0.9240. This selection of schools included those with noted enrollments of fewer than or equal to 500, 501 to 1000, 1001 to 5000 and over 5000. One exception, however, was noted. In the area of Communication Arts, in schools that had enrollments fewer than or equal to 500, a p value of 0.0166 rejected the null hypothesis for statistical evidence that schools that did not have a preschool performed more poorly than those that did. Rather, the mean score for schools without a preschool of

fewer than or equal to 500 students in grades K-12 was 43.97, while the mean score for those without a preschool was 37.58.

The fact that the null hypothesis was accepted in 28 of 30 statistical analyses cannot be ignored. Rather than providing overwhelmingly supportive data for the existence of preschools, the analysis suggests that the presence or absence of a preschool has little or no impact on the number of children scoring at the advanced or proficient levels of the MAP test. It is interesting to note that, in two separate instances, not only was there statistical evidence for the difference, but in the instance of results for schools that had a population of less than 500 students in grades K-12, in the content area of Communication Arts, the converse was true: a larger percentage of students in schools without a preschool scored higher in Communication Arts for the 2005-2006 testing session than the percentage of students who attended schools where a preschool was present. In regard to the other exception to the null hypotheses acceptance, again a statistical significance was noted in the area of Communication Arts for the testing session of the 2005-2006 school year. In this instance, the statewide results for the percentage of students who scored in the advanced and proficient levels of the MAP test was

higher in schools that had a preschool, as compared to the percentage of students in those that did not. However, even though the p value of 0.0329 was less than .05, only moderate evidence exists to support rejection of the null hypothesis (Jaisingh, 2006). To draw reasonable conclusions based on the MAP data supplied for a third grade child in the state of Missouri is at best, very difficult. The lack of a definitive standardized assessment tool for children in grades K-2 makes it very difficult to assess immediate early childhood intervention results, and waiting until the third grade for the MAP test may give misleading results, both positive and negative, for student achievement. If such a tool were available, a clearer correlation between the schools with and without a preschool, and student achievement, might be possible.

Implications for Effective Schools

One fact exists that may explain the differences in the acceptance versus the rejection of the null in the instance of percentages of students scoring advanced or proficient in the areas of Communication Arts and Mathematics for the testing sessions of 2005-2006, 2006-2007, and 2007-2008. Danielle Sellenrick (personal communication, February 3, 2009) shared that typical curriculum and alignment and instruction-drag are often the

cause of contradictory data for the first year of new cut scores, for change in testing procedures. Nonetheless, the overwhelming statistical evidence suggests that the presence or absence of a preschool that is maintained as a part of the school district has no effect on the achievement of third grade students in the content areas of Communication Arts or Mathematics. Regardless of the data noted in this study, two beliefs remain. First of all, early intervention in the form of preschool attendance has a positive effect on the future academic and social success of children (Reynolds, Ou, & Topitizes, 2004) and, second, much dissension exists as to whether or not the positive effects of the preschool or early intervention process are long term, perhaps diminishing prior to second grade (Molotsky, 1999).

Early interventions, primarily in the form of preschool programs, do not lack for support, regardless of the perceived success of the programs themselves. These interventions are credited with more than just school readiness. In the past, schools that typically counted on preschool programs to set the stage for upcoming reading curriculum now see the pre-K years as the optimum time to begin building the foundation for mathematics and science as well (Walker, 2008). Janet Currie (2007, ¶5) reports that

"well-designed, well-funded early interventions" can have "significant effects" on readiness for school and the potential success for children in attendance. In University Park, Pennsylvania, kindergarten students who had attended high-quality preschool programs, in particular those students who were considered at-risk, showed significant gains in the academic skills associated with early literacy and mathematics (Penn State University, 2008). Not all supporters of preschool, however, feel that the benefits of this early intervention are either long term or long lasting.

Brandon Fincher (2008) referenced an Alabama Policy Institute study that stated that participation in early childhood education programs showed little long term impact and that low-income children received only short term positive effects. In addition, Mr. Fincher shared that the study also suggested that any positive impact was the victim of the fade-out effect, whereby academic gains fade by fourth or fifth grade. Finally, Mr. Fincher explained that not only do these positive interventions fail to assist children from middle or high income families, but adverse effects on the behaviors of these children had been noted. In addition, Alexandra Frean, from the *Times* (2008), shared findings from a ten-nation study that found

that the forced group type of settings often found in traditional preschools slowed children's language development and that boys, in particular, suffered the most from that heavy emphasis on academics at an early age. However these findings find fault with the preschool curriculum citing a lack of creative play, as opposed to the high quality preschool opportunities that can be made available (Fread, 2008). None of the studies mentioned deny the positive aspects of the intervention for the preschool-aged- rather they cite the doubtful long term benefits and a curriculum that does not include creative play.

Recommendations

Based on the inconclusive results of this study, further research is a definite requirement. Again, the lack of definitive standardized assessment tools for children in grades K-2 makes it very difficult to assess immediate early childhood intervention results, and waiting until the third grade for the MAP test may give misleading results, both positive and negative, for student achievement. If such a tool were available, a clearer correlation between the schools with and without a preschool, and student achievement might be possible. In addition, no clear accounting system allows for the accurate reporting of preschool data within the state. Many of the districts that

have preschools did not report accurate data, if at all; not only were numbers left off enrollment counts, but also consecutive years were skipped. MAP data also displayed inaccuracies, with districts failing to report three consecutive years. In order to assess the correlation, if any, of student achievement in schools that had a preschool, in comparison with those that did not, the reporting of accurate, consistent data is a must. In addition, to accurately compare student achievement and to make accurate predictions and assumptions based on that data, longitudinal data must be supplied. Three years of data are not comprehensive enough to make predictions or assumptions, to suggest trend possibilities, or to suggest correlations.

In addition to inaccurate data reporting, a wide variance in preschool curricula also exists. Although preschools that are associated with particular school districts often try to follow best practices, too often the preschool experience lacks the consistent assessable curriculum that provides effective carryover into the school setting and adds to the subsequent academic success of the student. Likewise, the system for accountability in regard to the overall preschool experience lacks consistent statewide support in both public school systems and the

private sector. Finally, the professional development requirements found in the public school sector are often tailored to the school-aged child and, as a result, may not be available or purposeful for the preschool professional.

Summary

Even though this study denies the correlation between increased student achievement and schools that sponsor a preschool facility, the need for quality programs that ensure that every child enters school ready to learn cannot be denied (Mead, 2004). The opportunity to provide those programs to children already exists, with over 60 percent of the children under the age of 6 attending daycare of some sort, oftentimes run by unqualified teachers with a nearly nonexistent academic focus (Mead). However, Missouri, along with many other states, tends to fall behind in the areas preschool funding and preschool attendance for 3 and 4 year olds, ranking 32 in terms of access for four year olds with only 11% of the population of four years olds attending a state prekindergarten, along with a 33% percent decrease in the number of three year olds served in state prekindergartens, for a total of 15% of the state's three year old population served, as reported by the National Institute for Early Education Research (NIEER) in 2007. In addition, with a rank of 31 in

terms of spending on preschool children - \$2540 per child- Missouri has far to go to keep up with the national average of \$3642 per preschool child (NIEER, 2007). However, with the increased requirements of the Missouri Preschool Project (MPP), Missouri is heading in a positive direction, despite a \$199 decrease in total funding per child in 2007 (NIEER). Although this preschool program is just one of the many state funded programs in the state, it does meet 7 of the 10 benchmarks suggested by NIEER (2007). At this time, Missouri provides comprehensive learning standards, requires that the preschool teacher have a Bachelor of Arts degree in Education, be specialized in Early Childhood (EC) or Early Childhood Special Education (ECSE), and all teaching assistants have either a vocational certification or similar training. In addition, Missouri requires 22 clock hours of inservice, 7 more than the NIEER benchmark, has set a maximum class size of 20 for both 3 and 4 year olds, as well as a child staff ratio for each preschool classroom at 1:10, and meets all monitoring requirements, as set by the NIEER benchmarks (NIEER).

Nationwide, 87 percent of voters feel that state governments should be held accountable for providing preschool education (Mead, 2004). The quality preschool experience is one that will not only enhance learning but

will benefit society, in terms of a lowered teenage crime rate and lowered teen pregnancy and child welfare rates, as well as a reduced number of students who require special education or remedial services (Mead). Educators and society in general can ill-afford not to utilize an opportunity to make sure that children enter school prepared to take advantage of every service offered. Every dollar invested in a high quality, effective preschool has a return savings of \$7 for the public. No Child Left Behind demands eventual student success and an investment in preschool education can begin the process.

REFERENCES

- Analyse-it for Microsoft Excel (version 2.12). Retrieved from Analyse-it Software, Ltd. <http://www.analyse-it.com/i2008>
- Barnett, W. S., & Hustedt, J.T. (2003). Preschool: The most important grade [Electronic version]. *Educational Leadership*, 60. Retrieved September 21, 2007, from http://www.ascd.org/authors/ed_lead/el200304_barnett.html
- Beatty, Barbara. (1995). *Preschool education in America: The culture of young children from the colonial era to the present*. New Haven: Yale University Press.
- Bernard, Sara. (2008). Should preschool be a part of public school? *Edutopia*. Retrieved November 24, 2008 from <http://www.edutopia.org/should-preschool-be-part-public-school>
- Bloch M.N., (1987). Becoming scientific and professional: A historical perspective on the aims and effects of early Education. *The Formation of the School Subjects*, Philadelphia, PA: Palmer Pres.

- Bloch, M., Seldinger, P., & Seward, D (1989). What history tells us about public schools for 4-year-olds. *Theory Into Practice*, 28, pp. 11-19.
- Bower, B. (1985). Promising effects of intensive preschool. *Science News*, p. 24
- Bracey, Gerald W., & Stellar, Arthur. (2003) Long-term benefits of preschool: Lasting benefits far outweigh costs. *Phi Delta Kappan*, 780-797.
- Carter, G (2002). On equal ground: Preparing our youngest students for school. ASCD, Retrieved September 21, 2007, from <http://www.ascd.org/educationnews./kids/kids122002.html>
- Center for Mental Health in Schools at UCLA. (2006). Preschool programs: a synthesis of current policy issues. Los Angeles, CA
- Ciera.org (n.d.) Retrieved August 29, 2003, from <http://www.ciera.org>.
- Cohen, D.L. (1993). New study links lower I.Q. at age 5 to poverty. *Education Week*, Retrieved September 14, 2008, from <http://www.edweek.org/ew/articles/1993/04/07/28iq.h12.html?print=1>.

- Creswell, J. (2008). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. Pearson Education, Inc. Upper Saddle River, New Jersey.
- Currie, J. (n.d.). What we know about early childhood interventions. *Joint Center for Poverty Research, 2, 10*. Retrieved October 15, 2007 from [briefs/vol_2_num10.html](#).
- D. Sellenrick (personal communication, February 3, 2009) Educational Research Service. (2002). Effective early reading instruction. 83-84.
- Entwisle, Doris R. (1995). The role of schools in sustaining early childhood program benefits. *The Future of Children: Long Term Outcomes of Early Childhood Programs, 5*, pp. 133-143.
- Fincher, B. (2008). Study: Pre-k benefits may not be universal. *Daily Home*. Retrieved April 25, 2008 from <http://www.dailyhome.com/news/2008/dh-localnews-0419-bfincher-8d18v0236.html>
- Fraenkel, J.R. & Wallen, N.E. (2006). *How to design and evaluate research in education*. New York, New, York.
- Frean, A. (2008). New under-5s national curriculum may 'make children go backwards'. *The Times*. Retrieved

February 22, 2008 from

http://www.timesonline.co.uk/tol/life_and_style/education/article3378783.ece?print=yes&randnum=1203691135160

Gard, W.L. (1924). The influence of kindergarten on achievement in reading. *Educational Research Bulletin*, 3, pp. 135-138

Goldsmith, S., & Meyer, R. (2006). Pre-K shaping the system that shapes children. *Civic Bulletin*, 42, Retrieved September 21, 2007, from <http://manhattan-institute.org/cgi-bin/apMI/print.cgi>

Goodykootnz, B., & Davis, M. (1947). [Articles and Addresses]. Unpublished Raw Data.

Gormley, W.T., Phillips, D., & Gayer, T. (2008). Preschool readiness can boost school readiness. *Science*, 320, June, pp. 1723-1724.

Jaisingh, L. (2006). *Statistics for the utterly confused*. New York: McGraw Hill.

Jehl, J., Patterson, K., & Doggett, L. (2008). State advisory councils: creating systems of early education and care. *pre[K]now*.

Kagan, S. L., & Hallmark, L. G. (2001). Early care and educational policies in Sweden: Implications for the United States. *Phi Delta Kappan*, 241.

- Lazerson, M. (1970). Social reform and early childhood education: Some historical perspectives. *Urban Education*, pp.83-102.
- Lester, M. (2008). Preschool comes of age: the national debate on education for young children intensifies. Retrieved from <http://bleedingheartmama.wordpress.com/2008/09/03/whypreschoolshouldbeapartofpubliceducation>.
- Lubeck, Sally (2001). Four-year-olds and public schooling? framing the question. *Theory into Practice*, 28, pp.3-11.
- Mead, S. (2004). Open the preschool door, close the preparation gap. *Progressive Policy Institutes*, Policy Report, September.
- Missouri Department of Elementary and Secondary Education.(2008).Downloadable *School Data*. Retrieved January 14, 2009, from <http://www.dese.mo.gov/schooldata/ftpdata.html>
- Missouri Department of Elementary and Secondary Education. (2007). *MODESE annual report*. (2007). Retrieved October 14, 2007, from <http://dese.mo.gov/schooldata/four/022092/disanone.html>

Missouri Department of Elementary and Secondary Education.

2007). *School improvement and accountability*.

Retrieved October 14, 2007, from <http://dese.mo.gov/schooldata/four/022092/disanone.html>

Molotsky, I. (1999). Study shows importance of preschool

and child-care quality in education. *The New York*

Times. Retrieved October 11, 2007 from

<http://query.nytimes.com/gst/fullpage.html?res=9803EFD91139F93AA35755C0A96F95...>

National Assessment of Educational Progress. (2007). *The*

nation's report card. Retrieved November 29, 2007,

from

http://nationsreportcard.gov/reading_2007/r0003.asp

National Institute for Early Education Research (2007). *The*

state of preschool 2007.

National Institute for Literacy. (2003). *The partnership*

For literacy. Retrieved November 29, 2007, from

<http://www.nifl.gov/cgi-bin/pfr/search.cgi>

National Institute for Literacy. (2003). *About the*

partnership for literacy. Retrieved September 14,

2008, from <http://www.nifl.gov/partnership>

[forreading/about/about.html](http://www.nifl.gov/partnership/forreading/about/about.html)

Olsen, Darcy. (1999). Benefits of preschool don't last.

Retrieved from <http://www.cato.org>

Parents Magazine (2006). The importance of preschool.

[Electronic version]. *Parents Magazine*, Retrieved

http://www.parentsmag.com/General_Themes/Parents_and_K

[ids/The_importance_of_the_preschool.html](http://www.parentsmag.com/General_Themes/Parents_and_Kids/The_importance_of_the_preschool.html).

Parents as Teachers National Center (2006). Retrieved

September 23, 2007, from <http://www.parentsas>

[teachers.org/site/html](http://www.parentsas.org/site/html)

Penn State University (2008). Preschool program students

show better academic skills. Retrieved February 4,

2008 from <http://live.psu.edu/story/28384p>

Renchler, Ron. (1993). Poverty and learning *Eric Digest* 83.

Eugene, Oregon.

Reynolds, A.J., Ou, S.R., & Topitzes, J.W. (2004). *Paths of*

effects of early childhood intervention on educational

attainment and delinquency: A confirmatory analysis of

the Chicago child-parent centers. Child Development,

75, 5, The Society for Research in Child

Development, Inc.

Scherer, Marge. (2003). Not too early to learn. *Educational*

Leadership, pp. 5-10 Science Daily. (2007). Early

academic skills, not behavior, best predict school

success. Retrieved from <http://www.sciencedaily.com/releases/2007/11/071112182442.htm>.

Schwartz, W. (2001) *Closing the achievement gap: principles for improving the educational success of all students* ERIC Clearinghouse on Urban Education. New York, NY: (ERIC No. ED460191).

Smith, M., Patterson, K., & Doggett, L. (2008). Meeting the challenge of rural pre-k. *pre[K]now*.

Starr, Alexandra. (2002). The importance of teaching tots. *Business Week*, pp. 164-166.

Swim, Terri Jo. (2007, October). Theories of child development: Building blocks of developmentally appropriate practices. *Earlychildhood News*. Retrieved October 8, 2007, from http://www.earlychildhoodnews.com/earlychildhood/article_print.aspx?Article Id=411

The Importance of Pre-school Education. (1999). Retrieved October 12, 2007, from http://www.ltscotland.org.uk/earlyyears/images/CFsection1_tcm4-122181.pdf

United States Department of Education. (2006). *Early reading first*. Retrieved November 29, 2007, from <http://www.ed.gov/programs/earlyreading/index.html>

United States Government, (2001). *Executive summary*.

Retrieved October 18, 2007, from

<http://www.ed.gov/nclb/overview/intro/execsumm.html>

Walker, D. (2008). Pre-K- it's not just about social skills

anymore. *NewsOK.com*. Retrieved April 25, 2007, from

<http://www.newsok.com/article/3229908/?print=1>

VITA

Rebecca Bernard, Elementary Principal at Clever R-V Schools, joined Lindenwood University as an adjunct professor in 2006. Professional experience includes over thirty years in Missouri public education at the elementary level, with 17 years in the classroom, followed by 13 years as a principal. The majority of that career has been spent in the Clever R-V School District in southwest Missouri. Academic studies have resulted in a Bachelor of Science Degree in Elementary Education from the University of Missouri-Columbia and a Master of Science Degree in Education- Elementary Administration, and Educational Specialist Degree in Educational Administration from Missouri State University.