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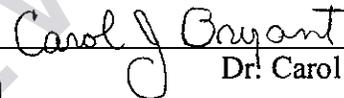
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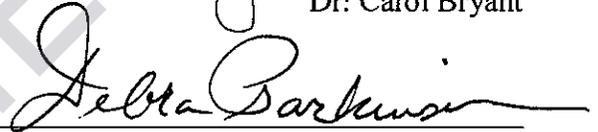
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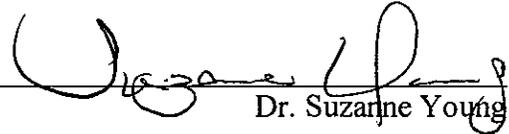
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Story, Irene, Pre-kindergarten Summer School: An Intervention for Kindergarten Readiness, Ed.D., Educational Leadership, College of Education, May, 2008.

Abstract

The purpose of this *ex post facto* study was to determine if a six-week pre-kindergarten summer school program would make a significant difference in students' performance on end-of-year kindergarten assessments and beginning-of-year first grade reading and writing assessments. This study involved a group of 124 four-year olds, 72 in the pre-k group and 52 in the control group from Laramie County School District Number One in Cheyenne, Wyoming. The demographics of the two groups were similar in gender, in ethnicity where the majority of the students were White or Hispanic, and in socio-economic status as determined by qualifying for free or reduced lunch. Students from Title I schools represented the majority of both groups.

The children in this study were followed over a 17 month period, from April 2006, when they pre-registered for kindergarten for the 2006-07 school year, to September 2007, when they entered first grade. Students were assessed in April 2006 on a pre-kindergarten screening assessment developed by the district to identify the kindergarten readiness proficiencies of the students. Students who did not demonstrate sufficient readiness proficiencies were offered the opportunity to participate in the pre-kindergarten summer school program. Those students who participated became the pre-k group in this study; those who qualified but did not participate became the control group. No student was deliberately assigned to either group.

Both groups in this study were comparable in their pre-kindergarten readiness proficiencies as this study began as there was no statistically significant difference in their

performance on the pre-kindergarten screening assessment, which measured proficiencies on language skills, literacy skills, motor skills, and total score. Students who took part in the pre-kindergarten summer school program were post-tested at the end of the six-week program that revealed they had made significant gains ($t = 12.284$, $df = 71$, $p < .000$) when the program ended in July 2006. At the end of kindergarten in June 2007, there was no statistically significant difference on any part of the kindergarten assessment between the two groups in all sub-tests, which included reading comprehension, writing, counting, data analysis and probability, shapes, patterns, and measurement. At the beginning of first grade, in September 2007, all first grade students were measured on their reading and writing skills with the Collaborative Literacy Intervention Program (CLIP) screening assessment. There were no statistically significant differences in the performance of the pre-k group and the control group on any part of this test, including letter ID, writing vocabulary, sentence dictation, and total score.

This study demonstrated that there was a significant gain in readiness skills by the pre-k group at the end of a six-week summer program. An analysis of this program and how it could be revised and redesigned to produce longer lasting effects on its participants is warranted.

PREVIEW

PRE-KINDERGARTEN SUMMER SCHOOL: AN INTERVENTION FOR
KINDERGARTEN READINESS

by
Irene Novick Story

A dissertation submitted to the Department of Educational Leadership
and The Graduate School of the University of Wyoming
in partial fulfillment of the requirements
for the degree of

DOCTOR
of
EDUCATION IN EDUCATION

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DEDICATION

I dedicate this study to my family, the north star of my life. Being with them is my inspiration to continually learn and achieve—and to believe that nothing is impossible.

To Chris, for inspiring me with his love, kindness, and support—and always having the faith that I would finish. Let's go buy that fishing boat!!

To Lars, for inspiring me with your special talents,
and Aleta, for allowing me to be a part of your family.

To René, for inspiring me to become a doctor, too,
and to Matt, for your positive outlook on life.

To Emie and Trey, may this inspire you to never quit learning and know that you have the potential to make a difference in this world.

To my mother, Sachiko Sugita Novick, I wish you could have been here for this;
And to my father, Allen I. Novick, whose love of books and thirst for knowledge lasted his entire 83 years. I did it!

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Thanks also to my committee, who gave of their time and support to see me through this doctoral program: Carol Bryant, Debra Parkinson, Suzanne Young, and Bill Berube.

A special thanks goes to Bill Berube, who has encouraged and supported me through many years of educational leadership classes and three post-graduate degrees. Mentors like you leave a legacy that raise the standard of excellence. Your leadership, your awareness of the human connection, and your kindness and encouragement will forever inspire me.

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PREVIEW

Chapter 1: Introduction

The experiences of a child's first five years of life are an indicator of future success in school. High-quality early childhood education has been shown to be a significant investment not only in the life of a student, but in that individual's subsequent contribution as a member of society. However, 30% of all students nationally who begin school are unable to benefit fully from the educational experiences they will encounter due to the lack of high-quality early childhood education. This percent is higher for children of lower socioeconomic status. Nearly every educational benchmark, from being on grade level to staying in school, is related to school readiness when entering kindergarten (Ferrandino, 2005).

The significance of providing preschool children with an enriched learning environment that stresses these skills is vital to their future success in school, as a strong link exists between what preschoolers know about words, sounds, letters, and print and later academic performance (Olson, 2002). High-quality early childhood education is fundamental in making sure that all children have an opportunity to succeed in school. Ferrandino (2005) stated that children who finish pre-kindergarten programs are half as likely to require special education services in later grades. Studies have found that children from low-income families who attend high-quality pre-kindergarten programs are more likely to graduate from high school and attend college and less likely to go to jail, become teen parents, or qualify for welfare (Ferrandino, 2005).

Head Start is the main federal preschool public program, created by President Lyndon B. Johnson in 1964 as part of his or her anti-poverty agenda. Head Start provides economically deprived preschoolers with education, nutrition, health, and social services

at special centers based in schools and community settings throughout the country. Over \$6 billion was appropriated to the Head Start program in 2003 (U.S. Department of Health and Human Services, 2003). In addition, 21 states and the District of Columbia supplement federal Head Start dollars (Olson, 2002). Longitudinal studies on the effectiveness of the Head Start program have indicated that students who participate have higher educational outcomes and lower occurrences of criminal activity in later years (Oden, 2000).

High-quality early childhood education is not always accessible to families. Federal programs reach only a portion of those who could benefit from pre-kindergarten interventions. Head Start serves about 60% of eligible children. According to the Head Start Bureau, approximately 900,000 children were enrolled in Head Start Programs in 2002 (U.S. Department of Health and Human Services, Head Start Bureau, 2003).

Only about 12% of the almost 15 million children eligible for child-care subsidies received them in 1999. Although all 50 states provide child-care subsidies for at least some needy families, wide variations exist in the income limits that families must meet to qualify for aid, the actual dollar amounts of the subsidies, and the percent of eligible children serviced. In 1999, 39 states and the District of Columbia offer financed pre-kindergarten for at least some of their 3- to 5-year olds, which is an increase from 10 states in 1980. State spending for these pre-kindergarten programs now exceeds \$1.9 billion annually. State funding for pre-kindergarten in fiscal 2002 ranged from \$1.5 million in Nebraska to \$295 million in California (Olson, 2002).

States and the federal government acknowledge and subsidize programs that focus on the education of preschool children. Research studies, such as the Carolina

Abecedarian Project (Campbell, Breitmayer, & Ramey, 1986; Campbell & Ramey, 1993; Campbell, & Pungello, 2000; Denton, 2001; Goldstein, Campbell, & Bynum, 1991) and the High/Scope Perry Preschool Project (Denton, 2001; Schweinhart, 1993, 2003), have shown that high-quality pre-kindergarten interventions can affect the academic success of children as they enter kindergarten. However, the children who need and who could benefit from a preschool learning environment are often not able to participate in such an experience.

Significance of the Study

Laramie County School District Number One in Cheyenne, Wyoming, is a North Central Accredited (NCA) district and has identified three district NCA goals:

1. All students will improve in math problem solving;
2. All students will improve in reading comprehension and writing across the content areas;
3. The percentage of students graduating from Laramie County School District Number One will increase from the previous year.

The purpose of these three goals is to focus on the achievement of students throughout their educational career from kindergarten through the twelfth grade, which includes addressing the needs of those individual students who are at-risk of failing in their academic endeavors while in the district. How to help children become successful students and stay in school until graduation has become the focal point of instruction within the district. Addressing the academic failure of a student in the secondary grades has been done with remediation that includes repeated courses, summer school, or extended day participation. Failure in academics can be caused by disinterest due to

continuous or repeatedly unsuccessful attempts at learning, which in turn leads to a low self-image and further disinterest in school, perhaps even resulting in the student dropping out of school.

Monitoring student achievement and providing appropriate interventions to address academic failure (i.e., the inability to become proficient on specific standards) is one approach to meeting the needs of at-risk students. However, this process is a system of treating a problem, not preventing one. A more preventative approach would be the implementation of a process that would identify students who are at-risk of failing academically as they enter the educational system as kindergarteners at five years old. Such a program would identify children who are not proficient in their kindergarten readiness skills and would incorporate a curriculum that addresses the needs of at-risk students. This program could provide a positive jump into the educational system as these children enter kindergarten on their first day of school.

Laramie County School District Number One has recognized a need exists to support four-year old children who are chronologically eligible to enter school in the fall but may not be ready developmentally. The curricula of the district have gone through the process of backward mapping to identify the skills needed at each grade level in preparation for graduation from high school, a process which has essentially identified the developmental skills that are needed for young children as they enter kindergarten. Identifying students who come to kindergarten unprepared to learn because they lack the readiness skills that are required for success their first year of school and providing these students with a quality intervention to help them meet kindergarten proficiencies could be a turning point in the subsequent future success of these students in school.

Laramie County School District Number One has provided a Pre-Kindergarten Summer School Program for the past seven years. However, no in-depth study has ever been made on whether such an intervention which occurs directly before the child enters the K-12 educational system has an impact on his or her future learning. Therefore, this study seeks to identify if the Pre-Kindergarten Summer School Program creates a significant difference in the success of participating students in meeting end-of year kindergarten standards when compared to a similar group that did not attend the pre-kindergarten program.

Research Questions

The Laramie County School District Number One provides a pre-kindergarten intervention by identifying students who lack the readiness skills for being successful in kindergarten. This program provides a quality education to these students through a literacy based curriculum taught by certified teachers who are either early childhood certified or are in the process of becoming certified in early childhood education, and classes are held in a school that exclusively serves students in the primary grades, kindergarten through second grade. Although the students in this pre-kindergarten program are provided with a certified staff, a quality curriculum, and an age-appropriate learning environment, the question of time only remains. Six weeks is a short time to attempt to get students ready for the kindergarten curriculum they will encounter as they enter school in the fall. Can a six-week program assist students in becoming more prepared to challenge kindergarten standards and proficiencies? Therein lay the questions that this study pursued.

Does a six-week, half-day pre-kindergarten intervention that occurs in the

summer prior to entering kindergarten and that focuses on identified at-risk students positively affect the growth in children's readiness skills at the end of the program? How does this six-week, half-day pre-kindergarten intervention that occurs in the summer prior to entering kindergarten and that focuses on identified at-risk students affect a child's success at the end of the kindergarten year in the achievement of proficiencies in meeting kindergarten standards? How do the students in the study perform academically they enter first grade and are assessed for their reading and writing proficiencies?

Hypothesis 1: Students identified as at-risk for being unsuccessful in kindergarten who participate in a Pre-Kindergarten Summer School Program will make significant growth in kindergarten readiness skills.

Hypothesis 2: Students identified as at-risk for being unsuccessful in kindergarten who participate in a Pre-Kindergarten Summer School Program will be more likely to be proficient in end-of-the-year kindergarten skills than those who do not participate.

Hypothesis 3: Students identified as at-risk for being unsuccessful in kindergarten who participate in a Pre-Kindergarten Summer School Program will be more likely to be proficient on the reading and writing assessment given to all first grade students at the beginning of the first grade year than those who do not participate

Findings from this study could have implications for the district's Pre-Kindergarten Summer School Program and the part it plays in helping students to start school as successful learners. Positive experiences in grade school could lead to an increase in the district's graduation rate as a result of student readiness in meeting academic challenges because they start school with the skills they need to be successful in kindergarten. This study will track student achievement data as the identified children

in the pre-k group and in the control group continue their education in the school district through their kindergarten year and into their first month of first grade (although the study has the potential to follow these students through grade 12 and beyond).

Achievement will be measured at the end of the kindergarten year and at the beginning of the first grade year. At the end of kindergarten, student achievement will be identified by student ability to meet kindergarten standards and proficiencies at the end of the kindergarten year in June 2007. At the beginning of first grade, the Collaborative Literacy Intervention Project (CLIP) reading and writing assessment was used to identify student proficiencies in reading and writing.

The first five years of a child's life are perhaps the most critical time for learning. Missed opportunities from conception to entering school can put a child developmentally behind when starting kindergarten, and those missed opportunities can also create barriers to achievement that can hinder learning throughout the student's school years. Experience in early learning leads to better educated and more employable individuals who require less remediation throughout the education system, which benefits society (Ferrandino, 2005).

Providing timely and appropriate interventions in order to close the developmental gap of children who lack the readiness skills for the kindergarten curriculum can be the initial, and perhaps the most essential, steps in preparing a child for future success in school. Longitudinal studies have revealed that quality early childhood programs (i.e., high-quality preschools) can have a direct affect on the performance of students as they progress through a K-12 school system and beyond. However, these programs were designed to be involved in the lives of young children for an extended

time, some being a predominant factor at infancy. Laramie County School District Number One provides an intervention for at-risk four-year olds during a six-week period in the summer prior to entering kindergarten. Is this intervention helping these children to meet their grade level proficiencies by the end of their kindergarten year? This is the question that will be addressed by this study.

Chapter 2 will discuss the literature review for this study, which has three topics, including (a) quality in early childhood education, (b) readiness for successful foundations in preschool programs, and (c) longitudinal studies of children in quality preschool programs.

PREVIEW

Chapter 2: Literature Review

The review of research findings and related literature on early childhood educational programs is divided into three sections. The first section defines quality in early childhood education, identifying the essential components that compose a program that addresses the needs of the preschool child. The specific indicators of high-quality preschool programs are described, including curricular needs of early childhood education programs. The second section identifies the skills needed to provide successful academic foundations for young children. These include the skills that support later literacy development as well as pre-mathematical knowledge and skills. The third section examines longitudinal studies of high-quality preschool programs and the subsequent effect on their participants when compared to individuals in their respective control groups.

Quality in Early Childhood Education

Traditionally, the term *quality* in early childhood education has meant ensuring that children are cared for in a safe and nurturing environment. State licensing standards commonly address group size, the number of children per caregiver, and such physical features as the height of playground equipment. State licensing standards rarely address the learning components of early-care and educational settings. Unfortunately, families with low incomes are the least likely to have access to high-quality early childhood services (Olson, 2002).

High-quality preschool programs are those designed to improve the learning and development of young children and the subsequent success of students in kindergarten. These programs are taught by licensed teachers with four-year college degrees and who

are also certified in early childhood education. High-quality preschool programs place emphasis on the basics, such as colors, shapes, numbers, letters, how to look at a book, how to get along with classmates, and how to follow directions and rules. These generally help students to be confident and successful learners in kindergarten (Barnett, Lamy, & Jung, 2005).

In 2004, the National Institute for Early Education Research (NIEER), partnered with state government and higher education in five states to evaluate state pre-kindergarten programs. For their project, Barnett et al. (2005) studied the effect of state-funded preschool programs on 5,278 preschool and kindergarten children in Michigan, New Jersey, Oklahoma, South Carolina, and West Virginia. They found these state-funded preschool programs to have statistically significant and meaningful impacts on children's early language, literacy, and mathematical development, with some evidence of an enhanced program effect for print awareness skills for children in low-income families. Specifically, their findings were as follows:

1. State-funded preschool produced an increase in children's vocabulary scores of nearly 4 raw score points, which equaled 31% more growth over the year and an 8% increase in children's average vocabulary scores. Such an improvement translated into an additional four months of progress in vocabulary growth due to the preschool program, which was particularly important because the measure is strongly predictive of general cognitive abilities.
2. Children who attended state-funded preschool scored higher on a test of early math skills. State-funded preschool increased children's math scores by

almost 1.5 raw score points, 44% more growth in a year due to the program and a 13% increase in children's average math scores. Skills tested include basic number concepts, simple addition and subtraction, telling time, and counting money.

3. State-funded preschool had strong effects on children's understanding of print concepts. The program increased all children's print awareness scores by nearly 17 percentage points, which is 85% more growth over the year and a 39% increase in children's print awareness scores. Children who attended a state-funded preschool program before entering kindergarten knew more letters, more letter-sound associations and were more familiar with words and book concepts.

Indicators of High-quality Preschool Programs

According to Denton (2001), a high-quality preschool experience can make a difference in improving student performance in school. Studies of pre-kindergarten programs have been evaluated to provide evidence of effectiveness, and findings have shown that high-quality preschool programs improve children's readiness for school. Average scores on first grade achievement tests in reading and mathematics were higher for children who participated in preschool programs than for similar children who did not participate in the programs.

Research on pre-kindergarten programs and on traditional child-care programs showed that program quality significantly affected children's readiness for school. High-quality programs improved school performance, whereas low-quality programs may have had negative effects, especially for at-risk children. Denton (2001) identified and

described the characteristics of high-quality preschool programs. The five essential elements are: (a) strong health and safety standards; (b) low student-to-teacher ratios and small classes; (c) qualified, well-compensated teachers; (d) proven curricula and learning processes; and (e) meaningful involvement by parents.

High-quality preschool programs protect children's health and safety and ensure that their individual educational, social, and physical needs. However, programs that seek to improve the at-risk child's readiness for school have the obligation to go beyond ensuring a safe and healthy environment. Since the at-risk child often comes from a family with limited economic resources and little access to healthcare, making sure that children are not hungry, at least when they are attending the preschool program, may be necessary to free the child to focus his or her attention on learning. Programs should also be prepared to help families obtain essential health services for their children. For instance, a child who needs glasses will have trouble learning to read; a student with chronic earaches cannot give full attention to learning because that child hurts (Denton, 2001).

High-quality preschool programs are built on low student-to-teacher ratios and small class size. The National Research Council of the National Academy of Sciences (2000) stated that small classes and lower student-to-teacher ratios enabled those teachers to provide children with more individual attention and nurturing interactions. This report also found that lower ratios and smaller classes were associated with higher scores on global measures of quality as well as more extensive and complex language skills. It was strongly suggested that a 10-to-1 ratio and maximum of 20 students per class are the upper limits, even for children in early elementary school (Denton, 2001).