HEAD START: THE EFFECT OF HALF DAY AND EXTENDED DAY PRESCHOOL PROGRAMS ON LANGUAGE AND LITERACY DEVELOPMENT

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ABSTRACT

With the emphasis on academic achievement and literacy development, preschool programs are finding new and different ways to prepare students for kindergarten. Numerous studies have identified the importance of preschool and its lasting effect on literacy and language development. This study used Head Start preschool classrooms to see if differences existed in the language and literacy skill development between preschoolers attending extended day programs and those attending half day programs. Seventy-one preschoolers from the extended day classrooms and 34 students from the half day classrooms were utilized in the study. T-tests for dependent means were conducted to determine the differences between the half day and extended day classrooms upon entry to the program. The results indicated students in the extended day program scored significantly higher in the area of language than students in the half day program. Factorial Analyses of Variance (ANOVA) were conducted to determine the effect of length of preschool day on literacy and language development as measured by the Learning Accomplishment Profile – 3rd Edition (LAP-3). The study focused on the areas of pre-writing and language scores from the LAP-3 as these are the components that make up the early literacy development score. Students in the half day program made significantly more gains in the area of language than students in the extended day program. Hispanic students and males made significantly more gains in the areas of language and pre-writing development. All students in half day and extended day Head Start classrooms made gains in the areas of pre-writing and language development, emphasizing the importance of early childhood education in emergent literacy.

DEDICATION

I dedicate this project to my family, friends and colleagues who have supported me through the years. To my husband, Mike, your support and encouragement has been the guiding strength throughout the course of my program. To my boys – Mitch, Brett and Josh – I hope to instill in you the love for lifelong learning and the importance of education. Thank you for your understanding. You have brought more joy to my life than one could ever imagine. To my parents, brother and sister-in law, you have been there to support my walk through life from the very beginning. To all of you, please accept my love, thanks and gratitude for all of your support. Most importantly, I dedicate this project to all the students I have worked with in the past eight years. You are what drive me to strive for excellence and to never doubt the importance of education.

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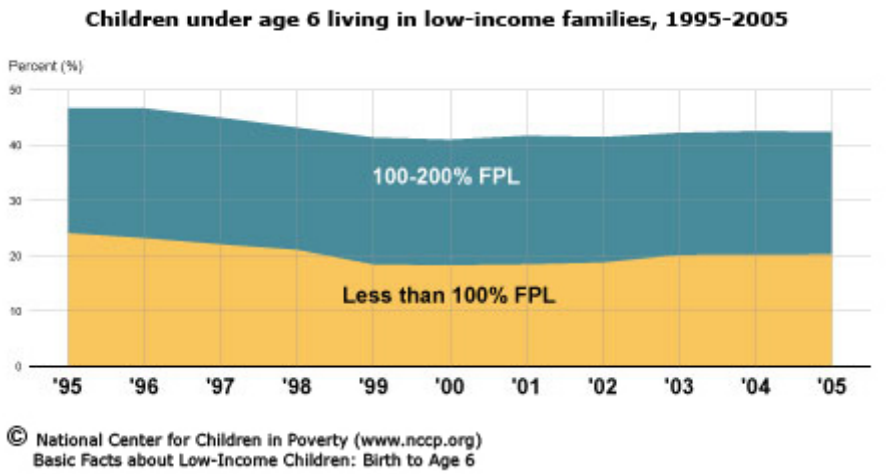
CHAPTER ONE: Introduction and Rationale

Poverty impacts millions of children in the United States. Although current statistics of children in poverty is not exact, approximately 18% of children in the United States are considered poor ("Demographics for Low Income Children 1). The National Center for Children in Poverty (NCCP) has compiled current data to represent the overwhelming trend of children, particularly children under the age of 6, living in poverty. According to NCCP, poverty is defined as "Income below the federal poverty level (FPL), $20,000 per year for a family of four in 2006" (1). In the state of Kansas there are 391,733 families, with 687,481 children; out of the 391,733 families, 36% of all families in Kansas meet the criteria for low-income families (Demographics for Low Income Children 1).

In addition to the rise of low-income families, the younger the age of children, the more likely they live in poverty. According to the NCCP, 21% of children under the age of 3 are living in poverty compared to 15% of children ages 13 to 17. While the number of children living in poverty declined in the 90's, in the past few years children under the age of 6 living in poverty increased by 16% (see Figure 1).

Figure 1

Children Under Age 6 Living in Low-Income Families

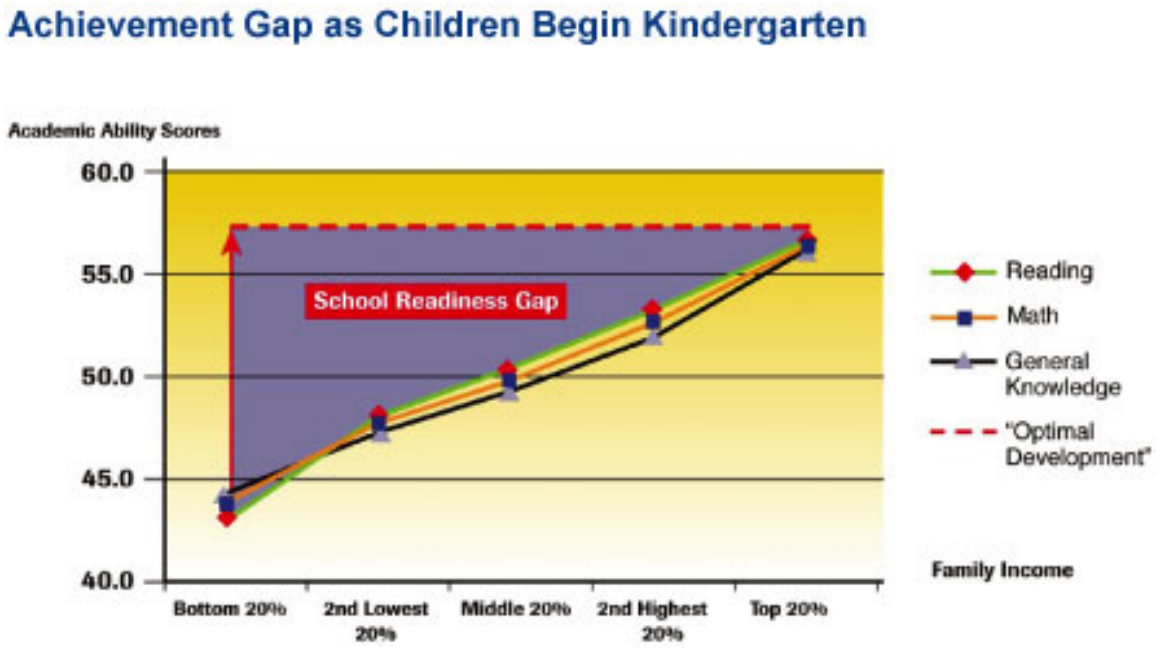


Children in poverty are not provided with the same opportunities as their middle class peers. While families not in poverty have adequate preschools and health care available, such opportunities are not as prevalent for families in poverty. According to Gershoff, “The more income a family has, the better their children do academically, socially, and physically” (3). This was one of the founding reasons Head Start was developed.

Head Start was started in 1965 when legislation was passed to develop early childhood programs for at-risk families. Head Start was designed to give preschool children a “head start” to catch up to their middle-class peers (George 21). Despite its implementation over 40 years ago, the achievement gap between students from middle to upper class backgrounds and those in poverty is increasing, likely due to the increasing number of children in poverty (Gershoff 3). Children in poverty are behind students in the areas of reading, math and overall development (see Figure 2).

Figure 2

Achievement Gap as Children Begin Kindergarten



Source: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998-99, Fall 1998. In Barnett, W. S.; Hustedt, J. T.; Robin, K. B.; & Schulman, K. L. (2004). *The state of preschool: 2004 state preschool yearbook*. Washington, DC: National Education Association <nieer.org/yearbook2004/pdf/yearbook.pdf>.

In 2006 Laundry, Swank, et al. reported that, “Over the last 10 years, almost 40% of the nation’s fourth graders and 60% of children growing up in poverty have failed to meet basic literacy standards” (306). While there are at-risk programs available for children in elementary schools, the key to closing the achievement gap with the children in poverty is in early intervention. Children at age 4 who live below the poverty line are 18 months behind same age peers and the gap is still present at age 10 (Klein and Knitzer 1). Children who fall this far behind, even before they enter kindergarten will continue to fall short of established literacy standards. In addition, these children not meeting literacy standards are more likely to be retained or identified for special education. Long-term those students are more likely to

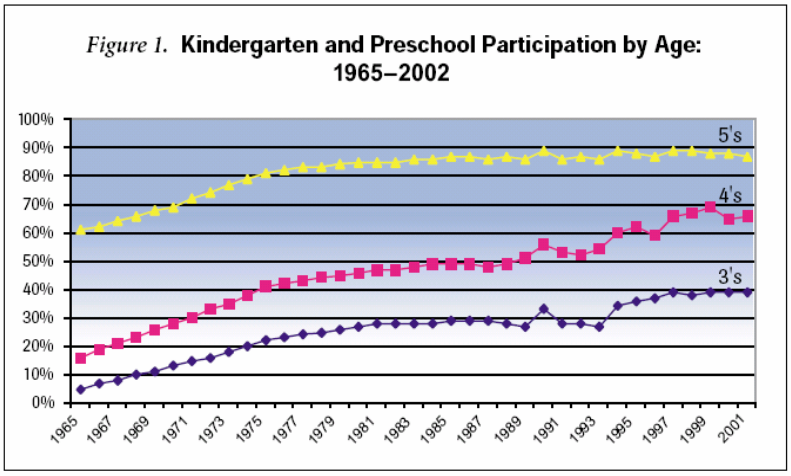
drop out of high school, be unemployed, abuse drugs, or become pregnant in teenage years (McGill-Franzen, Lanford, and Adams 455).

Research has shown that early intervention is the key to closing the achievement gap. Garrett and Kelley report a child's early experiences have a marked influence on the structure and physiology of the developing brain (267). Preschool prepares children in the way they transition from activity to activity and interacting with peers. Academically, children gain pre-literacy skills such as the acquisition of language, vocabulary and early mathematics skills which are an integral part of kindergarten. The general routines expected of a kindergartener, such as raising one's hand to speak, working at centers for various activities for a specified amount of time, and understanding the basic rules of a classroom are skills needed for kindergarten (Garrett and Kelley 267).

Participation in early childhood programs has grown steadily in the past 30 years. As shown in Figure 3, the number of three year olds attending preschool has grown from approximately 2% in 1965 to 40% in 2002 (Barnett and Yarosz 5). In addition, they report the growth in preschool participation is not due to an increase of mothers going back in to the workforce, but rather due to the growing demand on education (2).

Figure 3

Kindergarten and Preschool Participation



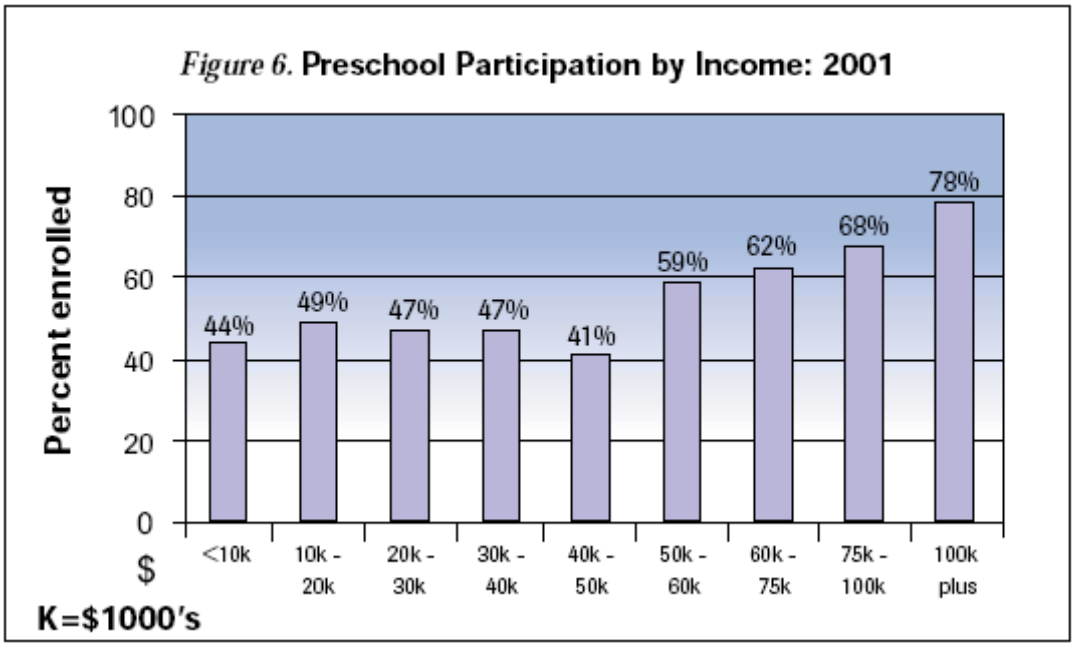
Research has supported the positive effects of early childhood programs on the development of early literacy skills. Early instruction benefits children from all socio-economic classes both academically and socially. Since the implementation of Child Find, nearly all states have implemented early childhood standards to reduce the achievement gaps (Hebbeler, Smith, and Black 104). The Office of Special Education and Rehabilitative Services reports, “Child Find is a component of Individuals with Disabilities Education Act (IDEA) that requires states to identify, locate, and evaluate all children with disabilities, aged birth to 21, who are in need of early intervention or special education services” (1). Although school districts are required to provide special education services to children aged birth to 3, school districts are not required to establish preschool programs (Taylor, White, and Kusmierick 134).

Early experiences in social development, pre-literacy skills, and pre-math skills prepare children of all socio-economic classes. However, most low-income students do not

have access to these early pre-school experiences (see Figure 4). To help provide these early experiences to children living in poverty, the federal government initiated the Head Start preschool program in 1965.

Figure 4

Preschool Participation by Income: 2001



Source: Barnett, W. Stephen, and Donald Yarosz. "Who Goes to Preschool and Why Does it Matter?" (August 2004). Issue 8, Preschool Policy Matters. National Institute for Early Education Research.

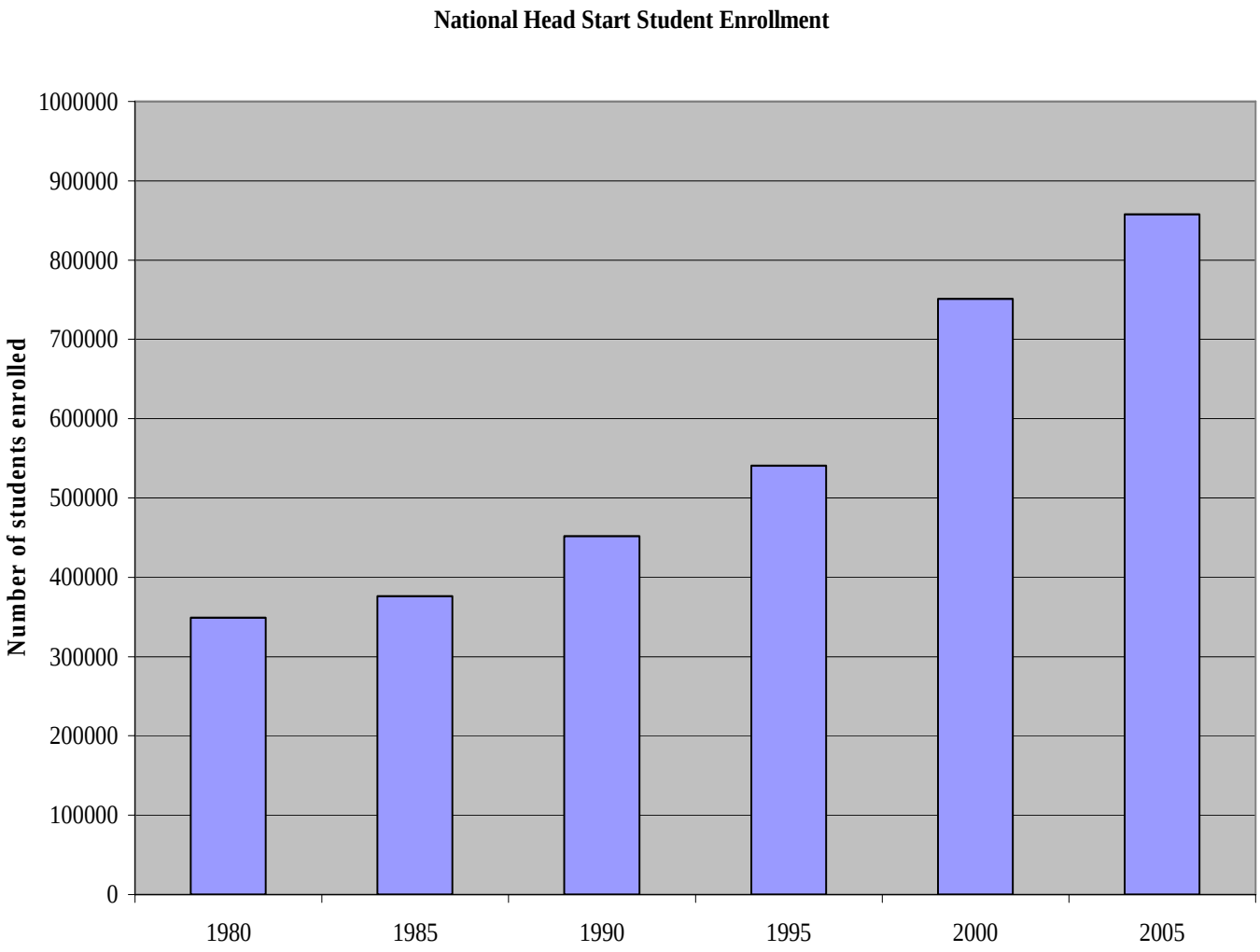
When implemented in 1965, Head Start's focus was primarily on social development, and not on the cognitive development or academic readiness skills (Laundry, Swank, Smith, et al. 307; Shaul 6). According to the Administration of Infants and Children, the purpose of Head Start has changed to include all areas of development. They reported, **"**Head Start is designed to foster healthy development in low-income children," then further stated Head Start programs, "deliver a range of services, responsive and appropriate to each child's and

each family's heritage and experience, that encompass all aspects of a child's development and learning" (1).

In the 2005 fiscal year, 7,931 students were nationally enrolled in Head Start programs. According to the Administration for Infants and Children "The Head Start program has enrolled more than 23 million children since it began in 1965," (1). Enrollment has tripled since 1980 (see Figure 5).

Figure 5

National Head Start Student Enrollment



Source: "Head Start Program Fact Sheet." Administration for Infants and Children. 26 September 2006. <http://www.acf.hhs.gov/programs/hsb/research/2006.htm>.

Research currently shows the structure of preschool programs is not helping to close the achievement gap (Shaul 12). As a result, some states are implementing extended or full day programs. While some states are starting to implement full day programs, most are still using half day programs because of the funding available for Head Start (Shaul 12). The

states implementing the full day programs are using creative means (grants, care funding, etc) to supplement the state funds to implement these programs (Shaul 12).

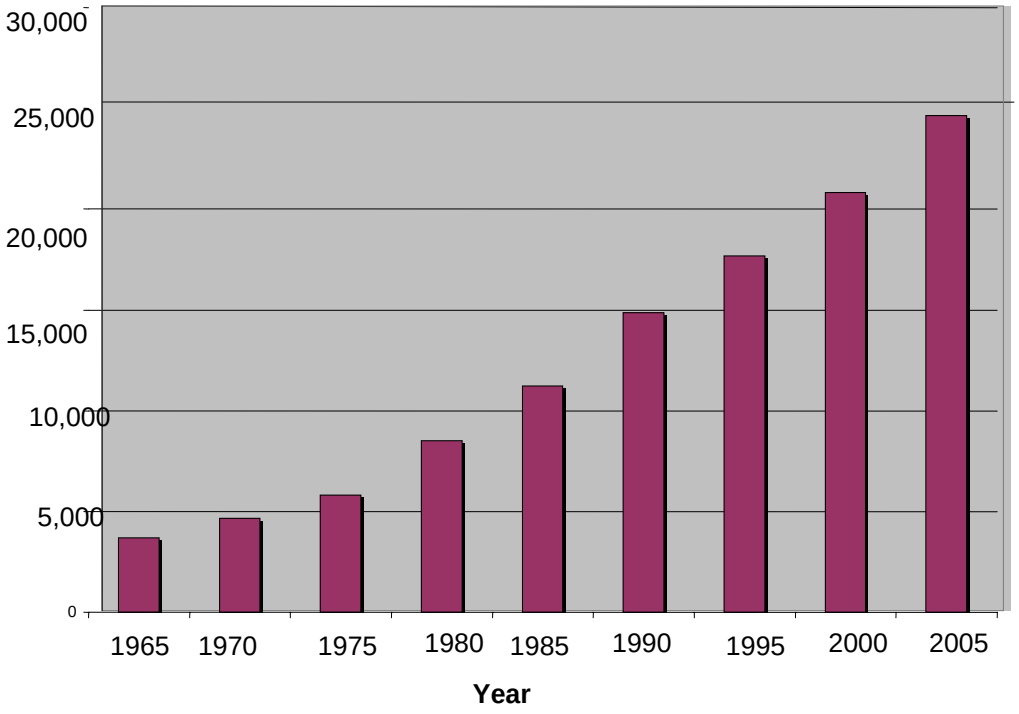
While daycare programs may offer care for up to 10 hours a day, preschool and pre-kindergarten programs are generally offered as little as two to three hours per day, for two or three days a week (Barnett 3). In 2004 Taylor, White, and Kusmierick found, “Even though most people believe that longer or more intensive early intervention services will be more effective, there often are objections when it is suggested that a particular early intervention be delivered for more hours per week,” (130). A study conducted by George revealed no significant differences between students attending half day and full day classrooms from fall to spring assessment results, but both groups reached a ceiling effect which could have impacted the results. Taylor, White, and Kusmierick and George both indicated further research in this area is needed (3, 102).

Background

This study takes place in the medwest in a growing and thriving suburban school district. In the past 40 years, student enrollment in the school district has quadrupled (see Figure 6).

Figure 6

Population Growth



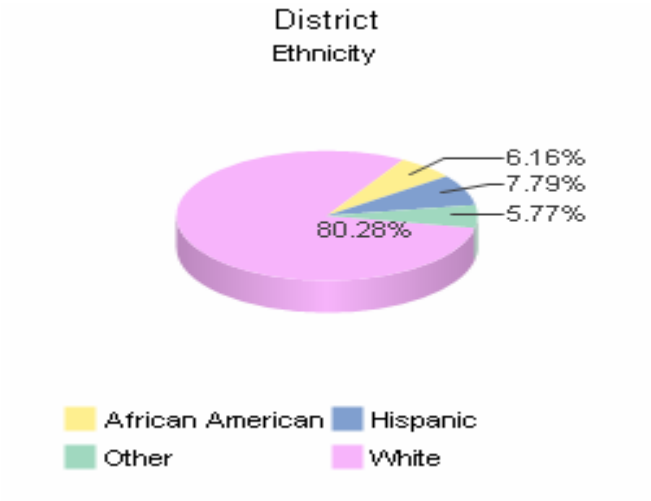
Source: “District History”. 13 August 2007.

http://www.districtschools/index.php?option=com_content&task=view&id=209&Itemid=26

Of the 25,000 students in the district, 16.02% are economically disadvantaged and so qualify for free and/or reduced lunch. The student population is primarily Caucasian students; Hispanic students make up the second largest group in the district (see Figure 7).

Figure 7

District Demographics



Source: “Report Card 2005-2006”. Kansas State Department of Education. 2006. 15 June 2007. <http://online.ksde.org/rcard/district.aspx?org_no=D0233>.

A recent change in the district’s Head Start program has been the amount of time preschoolers are attending. While two of the classrooms remained half day programs, four classrooms moved to extended day programs lasting six hours compared to four in the half day programs. With the recent change, the Head Start administration is interested in data to support the continued use of extended day programs.

Purpose of the Study

The purpose of the study is to see if differences exist in the language and literacy skill development between preschoolers attending extended day programs and those attending half day programs. The study is an attempt to provide the Head Start administration data to support continuation of the extended day program in a suburban school district in the

Midwest. The researcher is intending to collect evidence to support the research hypotheses listed below.

Research Hypotheses

Hypothesis 1

Students attending the extended day program demonstrate more growth in Pre-Writing skills than students attending the half-day program as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

Hypothesis 2

Students attending the extended day program demonstrate more growth in Language development than students attending the half day program as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

Hypothesis 3

Hispanic students attending the extended day program demonstrate more growth in Language development than Hispanic students attending the half day program as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

Hypothesis 4

Hispanic students attending the extended day program demonstrate more growth in Pre-Writing development than Hispanic students attending the half day program as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

Hypothesis 5

Male students attending the extended day program do not demonstrate more growth in Pre-Writing development than female students attending the half day or extended day

programs as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

Hypothesis 6

Male students attending the extended day program do not demonstrate more growth in Language development than female students attending the half day or extended day programs as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

Limitations and Delimitations

As with any study there are limitations. One limitation of this study is the make-up of the sample used in the study. All of the children in the sample come from one school district. Results will not be generalized to other school districts. A second limitation is the inequality of the sample size between children enrolled in half day and extended day programs.

The following are assumptions noted in the study.

Assumptions

1. All teachers in the extended day and half day programs teach the same Head Start curriculum.
2. Students were assessed with the Learning Accomplishment Profile 3rd Edition according to standardization procedures.
3. Students were assessed with the same form of the Learning Accomplishment Profile 3rd Edition.
4. Students were assessed individually with the Learning Accomplishment Profile 3rd Edition.

Definition of Terms

Cognitive Development – For the purpose of this study, cognitive development is a child's "development of knowledge, skills and dispositions, which help them to think about and understand the world around them" (Kadlic and Lesiak 10).

Emergent Literacy – For the purpose of this study, emergent literacy, "consists of the skills, knowledge, and attitudes that are presumed to be developmental precursors of conventional forms of reading and writing" (Lonigan, et al. 596).

Extended Day Program – For the purpose of this study, the extended day program is comprised of Head Start classrooms with students attending from 8:30 a.m. to 2:30 p.m. Monday through Thursday.

Half Day Program – For the purpose of this study, the extended day program is comprised of Head Start classrooms with students attending from 8:00 a.m. to 12:00 p.m. Monday through Thursday.

Language Development – For the purpose of this study, language development, "includes the ability to understand and use vocabulary, to put words together in grammatically appropriate phrases and sentences, to use words together to covey meaning, and to use language flexibly to meet the demands of differing social contexts" (Landry and Smith 135).

Phonemic Awareness – For the purpose of this study, phonemic awareness involves "the understanding that individual segments of sound at the phonemic level can be combined together to form words" (Phillips and Torgesen 102).

Poverty - According to NCCP, poverty is defined as "Income below the federal poverty level (FPL), $20,000 per year for a family of four in 2006" (1).

The organization of the study is as follows.

Outline of the Study

Chapter 2 provides the background of Head Start and theoretical framework of emergent literacy in early childhood education. Chapter 3 provides a detailed description of the research hypotheses, the participants involved in the study, the instrument and statistical analyses used in the study. Chapter 4 provides the results of a factorial Analysis of Variance (ANOVA) conducted to determine the effect of language and pre-writing skills on the two groups, half day and extended day programs and ANOVAs conducted with Hispanic and Caucasian students to determine the effect of half day and extended day groups on pre-writing skills, and the effect of half day and extended day programs on language skills. Chapter 5 provides a summary of the results presented in Chapter 4 and a discussion of the conclusions reached. Limitations of the study and areas of future research are discussed.

CHAPTER TWO: Review of Literature

The following is research supporting the effects of Head Start on early literacy and language development.

"A widespread hope for early intervention is that children could be placed on a normative developmental trajectory and thus continue to show optimal development after early intervention ends. In this view, early intervention functions as an inoculation" (Ramey and Landesman 4). Early intervention looks different depending on the program. Children participate in Mothers Day Out programs at their local church, community preschool settings, or in at-risk programs such as Head Start.

Head Start was established in 1965 to provide comprehensive services such as nutritional, educational, social and early childhood development, for children living in at-risk conditions for children ages 3 to 5. The Administration for Children, Youth and Families of the U.S. Department of Health and Human Services (HHS) currently oversees the Head Start program. According to HHS 90% of families involved with Head Start must meet income guidelines at or below the official Federal poverty guideline (130).

With the reauthorization of Head Start in 1998 the focus shifted from providing developmentally comprehensive services to that of preparing children for the academics of K-12 schooling. To do so, the Bush Administration encouraged the refining of curriculum to the emphasis on language, literacy, and numerical components of academics (Roskos and Vukelich 300). Numerous policies were also implemented with the reauthorization of Head Start. For example, the content of literacy was defined to include oral language, phonological awareness, print awareness and alphabet knowledge (Roskos and Vukelich 301). Along with

the reauthorization came a wealth of research focusing on the effects of Head Start, new interventions being implemented, and the length of the school day.

Head Start

The Administration for Children, Youth and Families developed the Head Start Family and Child Experiences Survey (FACES) to monitor the quality and effectiveness of Head Start programs (Zill and Resnick 349). In 2001 three cohorts were involved in a longitudinal FACES study. Zill and Resnick reviewed the results from the second cohort which consisted of 2800 children from 43 different Head Start programs nation-wide. The FACES assessment battery included norm-referenced and criterion-referenced tests measuring outside-in emergent literacy skills, inside-out emergent literacy skills, and emergent numeracy skills. “Inside-out” emergent literacy skills consist of tasks such as early writing, psychomotor tasks, and letter-word identification; outside in emergent literacy skills includes vocabulary, color-naming, and book knowledge (Zill and Resnick 349).

When reviewing the data for this cohort fall to spring, Zill and Resnick found significant gains in the areas of vocabulary and letter word identification, $p<.0001$, respectively. In the areas of early writing and early math, there was significant growth, $p < .05$. The researchers also noted there were significant differences within the sample upon entry into Head Start. Those who scored in the lower quartile with early literacy and math skills made significantly more gains than those who came to Head Start with average or above-average skills (Zill and Resnick 355).

The researchers then examined the effect of one year compared to two years of attendance in the Head Start program. Zill and Resnick (2001) reported, “The achievement of the 2-year Head Start children was significantly higher than those of children who attended

only 1 year, both at graduation from Head Start and at the end of kindergarten" (356). After examining the number of years that children attended the program, the researchers identified differences between the Head Start programs. One particular factor noted was the length of the classroom day. Although the majority of children participated in half programs, the researchers found children who participated in full day programs made greater gains in book-knowledge, early writing and color-naming (Zill and Resnick 363).

In 2001, another longitudinal study was conducted by Dickinson, et al. examining the relationship between phonological abilities and print knowledge with Head Start students beginning at age 3. When evaluated in fourth and seventh grades, moderate correlations of oral language with decoding and reading comprehension were found. Dickinson, et al. later conducted a study in 2004 with 533 Head Start students to determine the relationship between receptive vocabulary, phonological awareness, and print knowledge. The researchers found a moderate correlation of $r > .40$ between receptive vocabulary with phonological sensitivity and literacy; they recommended including integrating receptive vocabulary, phonological sensitivity, and literacy into a literacy program for preschoolers (Dickinson, et al. 400).

Hawken, Johnston, and McDonnell (2005) surveyed 273 Head Start preschool teachers to determine their current views and practices related to emergent literacy. They designed a ten page survey; once the suvey was validated, it was mailed to a stratified, random sample of preschool teachers. Two hundred seventy-three of the 500 surveys mailed were returned. Strategies used by teachers were divided into five literacy domains from the Head Start Child Outcomes Framework, which included: knowledge and appreciation, print

awareness and concepts, phonological awareness, alphabet knowledge, and early writing (Hawken, Johnston, and McDonnell 235).

In the area of book knowledge and appreciation, more than 75% of the teachers surveyed were having children retell stories, and 89% of the teachers reported having children practice holding books correctly and turning pages correctly (Hawken, Johnston, and McDonnell 236). In the area of alphabet knowledge, 81.3% of teachers reported encouraging play with the alphabet such as in puzzles or with magnetic letters on a daily basis. In the area of Phonological Awareness, 80.3% of the teachers reported having children identifying initial sounds in words daily. In the area of Early Writing, more than 97% of the teachers reported students using a variety of writing tools at least once or twice a week (Hawken, Johnston, and McDonnell 236). Overall, the results of the survey indicated Head Start teachers are using a variety of research-based strategies related to emerging literacy (Hawken, Johnston, and McDonnell 236).

In 2006 Dickinson, McCabe and Essex reported, “Longitudinal research indicates that high-quality interventions during the preschool years can have enduring effects on a broad range of developmental outcomes” (12). Wasik, Bond and Hindman conducted a study in 2006 to determine whether an intensive language and literacy intervention would have a similar effect in Head Start preschools with disadvantaged children. Two Head Start centers consisting of 207 children were participants in the study. One hundred thirty-nine were in the intervention group and 68 were in the control group. The teachers in the intervention group were trained on three components of a book reading training module which consisted of: asking questions, building vocabulary and making connections (Wasik and Bond 66). All children were evaluated with the Peabody Picture Vocabulary Test (PPVT) and the

Expressive One Word Picture Vocabulary Test in the fall and spring. In addition, they were asked to identify the letters of the alphabet.

The results revealed children in the intervention group had significantly larger vocabularies. To evaluate receptive language, the researchers conducted a one-way Analysis of Covariance (ANCOVA) on the post-test scores of the PPVT-III. Students from the intervention group had significantly larger vocabularies. When an ANCOVA was conducted on alphabet scores, children in the control group scored significantly better than children in the intervention groups. When the researchers compared the children of the control and intervention groups, the scores on the pretest for both receptive and expressive language indicated there was no significant difference between the groups at the start of the intervention.

Wasik, Bond and Hindman (2006) reported,

> Given the fact that children from high-poverty homes have deficient vocabularies because of their having relatively infrequent communicative exchanges with their primary caregivers, it is important that these children have increased opportunities to express themselves in school (70).

The authors argue the time children spend in school should be used to further develop their vocabulary and the emergent literacy skills necessary for the future.

In 2006 Landry, et al. examined the relationships among teacher education, length of preschool day, and a curriculum focused on language and literacy on Head Start programs. Twenty Head Start sites were utilized in the study and 3703 children were randomly selected from the 12,000 children in the centers to participate in the study. Child outcomes were measured by the Developing Skills Checklist, the Peabody Picture Vocabulary Test III

(PPVT-3), the Expressive Vocabulary Test (EVT), the Preschool Language Scale (PLS-3) and Social-Emotional Scale. When examining the effects of the length of school day, children's understanding of language and alphabet knowledge was greater in the full day preschool than the half day preschool program (317). In addition, children had greater gains for phonological awareness during the second year of the study.

The results of Landry et al's research is further supported by a study in Dickinson, et al. Dickinson, et al. stated,

> There is evidence that phonological sensitivity, other language skills, and print knowledge are interrelated in the years before children begin receiving reading instruction, and there is evidence these relationships persist as children begin learning to read (347).

In 1988 Lee, Brooks-Gunn, and Schnur conducted a longitudinal study with 969 children attending Head Start programs, other preschools or no preschool. The researchers first looked at differences between cognitive abilities and demographics. Children from Head Start had mothers with significantly less education, spent less time getting ready to become mothers, were less likely to have father involvement, and lived with more children or adults in the homes than those in the comparison groups (Lee, Brooks-Gunn, and Schnur 496).

All children in Lee, Brooks-Gunn, and Schnur's study were evaluated with the Peabody Picture Vocabulary Test, the Caldwell Preschool Inventory, the Motor Inhibition Test, and the Eight-Block Sorting Task in the spring prior to preschool and the end of their first preschool year. On the PPVT, the Caldwell Preschool Inventory and Motor Inhibition Test, students scored significantly higher than the students who had either no preschool experience or other preschool experience. On the Eight-Block Toy Sort the Head Start

students scored significantly higher than students with no preschool experience, but not more than students who had attended other preschools (Lee, Brooks-Gunn, and Schnur 502).

In 1990 Lee, et al. conducted a longitudinal follow-up study with the effects of Head Start on black children at the end of their kindergarten year. Six hundred forty-six black kindergartners were evaluated with the Cooperative Primary Test, which is utilized to assess verbal achievement. The Children's Embedded Figures Test and the Raven's Colored Progressive Matrices Test were used to measure perceptual reasoning. The children in the study were compared to other black kindergartners who had no preschool experience or another preschool program experience.

The researchers found at the end of the kindergarten year, children who attended Head Start scored higher than those who had not attended preschool on the California Preschool Competency Test (Lee, et al. 502). In 1990 Lee, et al. stated, "We interpret this as indicating that disadvantaged black children benefit from any preschool experience compared to none at all" (504). Although the study specifically addressed black children, the researchers reported they do not believe the findings are restricted solely to black children. They recommended further research into the effects of Head Start with other minority groups. And lastly, they reported to close the achievement gap between disadvantaged and advantaged children there needs to be programs available that go beyond short-term interventions (Lee, et al. 504).

Despite the implementation of preschools and Head Start programs for at-risk students, we are still not meeting the needs of these students to prepare them for academic success. Dickinson, McCabe and Essex reported,

> Powerful forces have created and continue to sustain an early childhood educational system that is falling short of providing the kind of support children from low-income backgrounds require. We are making hopeful advances in our endeavor to enrich the preschool experiences of children, but far more must be done to improve their classrooms and communities if we are to take full advantage of the window of educational opportunities provided us by biology (23).

Research of full day programming in Head Start is limited. However, the following research supports the role of emergent literacy in preschool children and the importance of exposure to the Cumulative Language Perspective. According to Poe, et al., "This approach [Cumulative Language Perspective] posits that oral language skills such as vocabulary, phonological awareness, syntax, and discourse are interrelated skills that lay the foundation for emergent literacy and subsequent reading skills" (316).

Emergent Literacy

According to Lonigan, "the developmental precursors to reading before children enter a formal school environment" are often referred to as emergent literacy (79). In 2000 Lonigan and his colleagues evaluated 96 preschoolers from early to late preschool and 97 children from late preschool to kindergarten to determine the significance of emergent literacy skills. The authors reviewed research that ultimately determined that children who lagged behind with reading skills at the earlier grades would have continued difficulties in later years. They defined emergent literacy as, "[Emergent Literacy] consists of the skills, knowledge, and attitudes that are presumed to be developmental precursors of conventional forms of reading and writing" (Lonigan, et al. 596). The researchers conducted a study with

preschoolers using phonological sensitivity measures, a rhyme oddity task and an alliteration oddity direction test; a blending task, and oral language and cognitive ability measures (including the Peabody Picture Vocabulary Test – Revised, the Expressive One-Word Picture Vocabulary Test, and the Illinois Test of Psycholinguistic Abilities). In addition, they were evaluated with letter knowledge measures, environmental print measures, print concepts measure, and word decoding measures (Lonigan, et al. 601).

The authors conducted Analyses of Variance (ANOVAs) and determined that in relation to phonological sensitivity, the older students scored significantly higher than the younger students, $p < .001$. Although children's phonological sensitivity relates to decoding skills and later reading skills, other skills such as print concepts and the ability to read environmental print did not predict later reading skills. The only two predictors of later reading skills found in the two samples of preschoolers were phonological sensitivity and letter knowledge (Lonigan, et al. 611).

Other researchers have looked into the relationship between phonological sensitivity and letter knowledge, as well. According to Anthony, et al's research in 2006, "Research with school-age children has identified three interrelated phonological processing abilities that are important for reading and writing: phonological awareness, phonological memory, and efficiency of phonological access to lexical storage" (240).

In 2004 Schatschneider, et al. conducted a longitudinal analysis with 945 children who had entered kindergarten. The researchers examined the students' reading outcomes at the end of first and second grades. The researchers sought to determine: the language variables involved in predicting reading outcomes; the impact of reading fluency to kindergarten assessments; and the relationship of phonological awareness skills to reading

skills. The found that letter-related skills would be most predictive of later reading skills (Schatschneider, et al. 268).

At the beginning of kindergarten, children were evaluated in the areas of expressive syntax and syntactic comprehension. Throughout the kindergarten year, the children were also administered subtests of the battery developed by Torgesen, et al. related to phonological awareness; and they were also evaluated by various tools measuring their alphabet knowledge, rapid naming of objects and letters (RAN), vocabulary, visual-motor integration, and visual perceptual abilities. At the end of the first and second grade years, students were evaluated with measures of academic achievement with the Letter-Word Identification subtest of the Woodcock-Johnson Psychoeducational Test Battery and the Test of Word Reading Efficiency (Schatschneider, et al. 269).

Factors that were most predictive from kindergarten to Grade 1 and Grade 1 to Grade 2 were phonological awareness, knowledge of letter sounds and RAN letters. The predictors of reading at the end of 2nd grade change with each grade level. Knowledge of letter names was a significant predictor of reading outcomes at the beginning of kindergarten, but diminished as a predictor at the end of kindergarten and the end of first grade. In 2004 Schatschneider and his colleagues concluded that, “simply focusing on the correlational relationships of kindergarten performance and reading outcomes in subsequent grades is not adequate for deciding which variables are the best predictors” (231).

In 1997 Cunningham and Stanovich provided information about the “Matthew effects in education”, or as cited in his study, the “rich-get-richer and poor-get-poorer” (934). This is the basis for their research into the effect early reading acquisition has in later teenage

years. If children are poor readers as first graders, Cunningham and Stanovich predicted they would continue to be poor readers in the 11th grade (935).

A group of 56 first graders were evaluated on their cognitive and reading abilities. When followed up ten years later, only 27 of those students remained and participated in a follow up study of their cognitive and reading abilities. In addition, the researchers examined students' written vocabulary, the extent of print exposure and their general knowledge, which was measured in regards to cultural literacy (which was made up of history, literature knowledge, and cultural knowledge) (Cunningham and Stanovich 939).

The researchers discovered that print exposure was a significant predictor of reading comprehension, knowledge and verbal ability. They also discovered that 1st grade comprehension was a predictor of 11th grade knowledge and cultural literacy. Cunningham and Stanovich (1997) reported, "A fast initial start at reading acquisition might well help to develop the lifetime habit of reading, irrespective of the ultimate level of reading comprehension ability that the individual attains" (942).

In 2006 Anthony, et al. took the research a step further in evaluating 147 three to five year old Spanish speaking children's phonological awareness, phonological memory, and phonological access to lexical storage (RAN) (239). Participants in the study were randomly selected from a population of 719 Spanish speaking children enrolled in Head Start. The children were evaluated with various subtests from the Spanish Preschool Comprehensive Test of Phonological and Print Processing (PCTOPPP). The researchers were seeking to determine whether each of the phonological processing abilities were separate from cognitive abilities, each other and their relationship with emergent literacy skills (Anthony, et al. 245).

The researchers found through Confirmatory Factor Analysis that phonological awareness, phonological memory and RAN were greater predictors of emergent literacy than cognitive ability alone. In addition, relationships were found between the areas. Phonological awareness and phonological memory overlapped with their predictor of emergent literacy. Although RAN was considered the greatest predictor of emergent literacy, in this study it was unrelated to phonological awareness and phonological memory (Anthony, et al. 262). Whether looking at native Spanish-speaking children or English-speaking children, these three also noted the relationship of the phonological processing abilities and language. Anthony, et al. reported in The Handbook of Early Literacy,

> The rapid development of language, particularly the emergence of the more advanced language abilities, may play a pivotal role in the initial organization and subsequent functioning of varied linguistic-cognitive-affective systems that underpin literacy, as well as diverse areas of cognition and social development (13).

In 2006 Dickinson, McCabe and Essex discussed how phonological processing abilities are predictors of emergent literacy. Along with Dickinson, et al., Poe and colleagues believed in the relationship between language abilities, phonological abilities and the social relationship from the home environment (Poet, et al. 315). In 2004 Poe, et al. reviewed longitudinal data from 77 African American children to determine the relationship between early language and later reading skills at preschool and the end of second grade; seventy five percent of the children in the study were classified as low-income (315).

The participants were evaluated with measures including the Clinical Evaluation of Language Fundamentals (CELF) to measure language skills and subtests from the Woodcock Johnson Psycho-Educational Battery – Revised (Letter-Word Identification and

Incomplete Words Scale). In addition, the Home Observation for the Measurement of the Environment was utilized to gain information about the participants' home literacy environment.

Poe, et al. reported:

> Longitudinal regression analyses indicate that language at entry to kindergarten through second grade has a direct association with reading, and this association became stronger in second grade when reading skills included assessment of both decoding and comprehension. Language, not phonemic knowledge, was the best predictor of reading skills in second grade, the age when children should have acquired basic decoding skills and many are reading for comprehension (328).

However, their research did show that phonemic knowledge was the best predictor of reading skills in kindergarten. According to this study, children from low income families need a family environment rich with literacy, a strong phonemic background in preschool and kindergarten and a strong language emphasis throughout the preschool through second grade years (Poe, et al. 327).

McCabe, et al. (2006) stated,

> There is evidence that phonological sensitivity, other language skills, and print knowledge are interrelated in the years before children begin receiving reading instruction, and there is evidence these relationships persist as children begin learning to read (347).

In 1999 Bus and IJzendoorn conducted a quantitative meta-analysis determining the effects of phonological awareness with reading. The researchers selected 36 studies on the

effects of phonological awareness training programs and 34 studies examining the effects on reading. Bus and IJzendoorn found phonological awareness a significant predictor of reading; it was noted that kindergarten and first graders do not benefit as substantially as preschoolers with phonological training (412). Programs that focused solely on phonological awareness training had a smaller effect than programs with a combined phonological awareness training and letter training. Bus and IJzendoorn concluded, "the onset of preventive interventions in early childhood seems to be never too early" (412).

Literature documents significant gaps between children from advantaged families and children of families in poverty or with parents with limited education (Dickinson and Neuman 1; Dickinson, McCabe, and Essex 11). Those children who are behind when they start kindergarten do not make up the "gap" to become strong students upon graduation (Dickinson, McCabe, and Essex 15). Dickinson and Neuman state, "Early childhood literacy is regarded as the single best investment for enabling children to develop skills that will likely benefit them for a lifetime, (Dickinson and Neuman 1). Research presented indicates a need for early intervention in the areas of vocabulary and phonemic processing skills to give at-risk students a "head start" into a lifetime of literacy.

CHAPTER THREE: Methods

This chapter describes the research methods used in the study including demographic information about the participants, instrumentation, and specific procedures used to determine children's developmental growth of literacy and language skills in the half day compared to the extended day programs in the study.

The study examined the developmental growth of Pre-Writing and Language skills across the 2006-2007 school year. The purpose of the study is to determine whether preschoolers attending extended day Head Start classrooms demonstrate more growth in literacy and language skills than students attending half day programs. The study is an attempt to support the Head Start extended day program in the district's decision to change all classrooms from half day to extended day.

RESEARCH HYPOTHESES

Hypothesis 1

Students attending the extended day program demonstrate more growth in Pre-Writing skills than students attending the half day program as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

Hypothesis 2

Students attending the extended day program demonstrate more growth in Language development than students attending the half day program as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

Hypothesis 3

Hispanic students attending the extended day program demonstrate more growth in Language development than Hispanic students attending the half day program as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

Hypothesis 4

Hispanic students attending the extended day program demonstrate more growth in Pre-Writing development than Hispanic students attending the half day program as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

Hypothesis 5

Male students attending the extended day program do not demonstrate more growth in Pre-Writing development than female students attending the half day or extended day programs as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

Hypothesis 6

Male students attending the extended day program do not demonstrate more growth in Language development than female students attending the half day or extended day programs as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

Participants

Participants in this study attended Head Start classrooms in a suburban district in the Midwest. To participate in Head Start preschool, families must meet the federal income guidelines. The federal income guidelines would require a family of four to earn a maximum of $20,650 per year. There are four extended day classrooms consisting of 71 students who

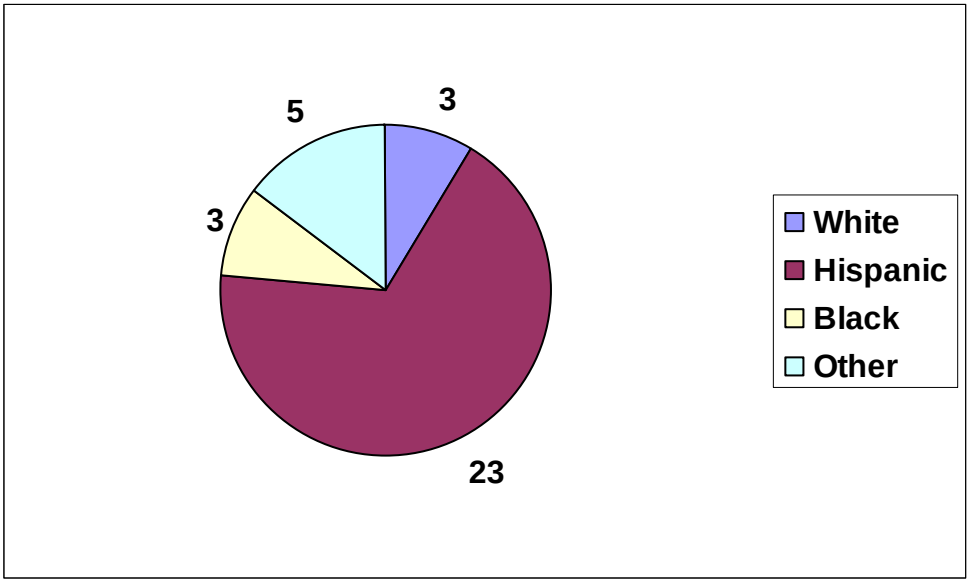
attend six hours per day and two half day programs consisting of 34 students who attend school for four hours per day.

Parents of children who are eligible for the program are interviewed and asked questions about their preference for the half day or the extended day program. Families expressing an interest in the extended day program are interviewed further to see if they as parents are either attending school or work and whether or not their children receive assistance through Social and Rehabilitative Services (SRS). Program assignment is based on parental preference, parental activities during the day and their assistance from SRS. Once the extended day program is full a waiting list is initiated and admission into the program is then determined based on the "need." This "need" may be due to parents attending school or work during the day or inability to receive childcare assistance through Social and Rehabilitative Services.

There are 71 students three to five years of age in the extended day program, 37 males and 34 females. In the half day program, there are 34 students, 16 males and 18 females. Of the 34 students, 3 are Caucasian, 23 are Hispanic, 3 are Black and 5 classified as "Other" (see Figure 8).

Figure 8

Head Start Student Half Day Demographics 2006-2007

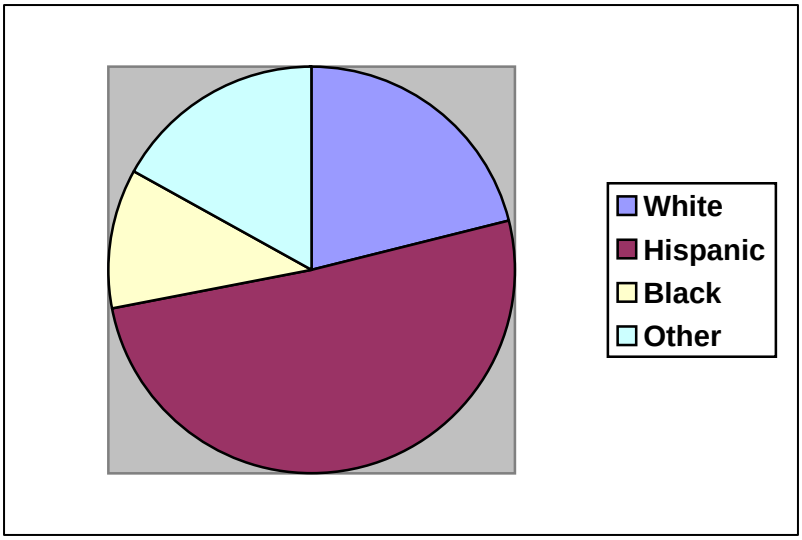


Source: Head Start Outcomes Report for Head Start.

Of the 71 students, 36 are Hispanic, 15 are Caucasian, 8 are Black and 12 fall in the “other” category (including Asian American, Native American, and more than one race) (see Figure 9).

Figure 9

Head Start Student Extended Day Demographics 2006-2007



Source: Head Start Outcomes Report for Head Start

In both the extended day and half day programs, the majority of the population consists of Hispanic students. Students who fell in the "other" category consisted of students from Native American background, Asian, and more than two races.

Instrumentation

Learning Achievement Profile – 3rd Edition

The research instrument used in this study was the Learning Achievement Profile 3rd Edition (LAP-3). According to Hardin and Peisner-Feinberg, "The LAP was designed to observe the development of individual children by providing tasks of situations typical of young children's development that would interest the child and stimulate an observable response" (1). The LAP was initially developed in 1969 by Anne Sanford when the Chapel

Hill Training Outreach Project was established. The LAP was revised in 1981 (and after that was known as the LAP-Revised) and in 2004 was termed the LAP-3 (Hardin and Peisner-Feinburg 3). The LAP-3 is a criterion-referenced tool for children functioning in the 36-72 month age range and is used to screen and evaluate children's developmental growth in the areas of gross motor, fine motor, pre-writing, cognitive, language, self-help, and personal/social development (Hardin and Peisner-Feinburg 3).

Gross motor includes developmental skills such as standing on one foot, catching a ball, etc. Skills such as copying shapes, copying letters, and writing numbers are skills assessed in the pre-writing subtest. In the cognitive subtest, students are assessed on counting, identifying qualitative concepts, identifying positions, etc. Skills such as identifying pictures, naming objects, and following multi-step directions are included in the language subtest. Developmental skills assessed in the self-help subtest include brushing teeth, taking off shoes, putting on clothes, etc. Finally, in the area of personal/social, students are assessed in a variety of skills including to play with other children is associative play, identify emotions, etc. (Hardin and Peisner-Feinberg 24).

The LAP-3 is comprised of 383 developmental skills divided across the seven domains of development (gross motor, fine motor, pre-writing, cognitive, language, self-help and personal/social). The items are individually administered orally to the students. The assessment takes 90 minutes to administer to each child. Procedures for each item are included in the administration manual to ensure standardization and reliability of assessment results (Hardin and Peisner-Feinburg 13).

The LAP-3 provides two different types of scores. First, the scores are broken down for each child by each subtest area. Second, milestones (questions from the LAP-3) from

each of the subtests are used to develop scores in the domains of Language Development, Literacy, Math, Science, Creative Arts, Social Emotional, Approaches to Learning, and Physical Health Development. In 2004 Hardin and Peisner-Feinburg selected the items from each of the subtests (fine motor, gross motor, pre-writing, cognitive, language, self-help and personal/social) that most closely corresponded to the abilities of typically developing children at the developmental age as compared to the Head Start Outcomes Framework (see "Figure 10") (14).

Figure 10

Learning Accomplishment Profile and Head Start Outcome Framework Score Reports

Domain	**Domain Element**	**# of Milestones**	**Milestones from LAP-3 Subtests**
Language Development	Listening and Understanding	18	Cognitive, Language
	Speaking and Communicating	29	Cognitive, Language
Literacy	Phonological Awareness	6	Language
	Book Knowledge and Appreciation	12	Fine Motor, Language
	Print Awareness and Concepts	5	Language
	Early Writing	6	Pre-Writing
	Alphabet Knowledge	5	Language
Mathematics	Number and Operations	34	Cognitive, Pre-Writing
	Geometry and Spatial Sense	15	Cognitive, Fine-Motor, Language
	Patterns and Measurements	11	Cognitive
Science	Scientific Skills and Methods	10	Cognitive
	Scientific Knowledge	10	Cognitive
Creative Arts	Music	2	Cognitive Language
	Art	4	Fine Motor, Pre-Writing
	Movement	2	Gross Motor, Personal/Social
Creative Arts	Dramatic Play	2	Personal/Social
Social & Emotional	Self Concept	9	Personal/Social
	Self-Control	8	Personal/Social
	Cooperation	9	Personal/Social
	Social Relationships	10	Personal/Social
	Knowledge of Families and Communities	5	Personal/Social
Approaches to Learning	Initiative and Curiosity	1	Personal/Social
	Engagement and Persistence	3	Cognitive
Physical Health and Development	Fine Motor Skills	64	Cognitive, Fine Motor, Pre-Writing
	Gross Motor Skills	37	Gross Motor
	Health Status and Practices	57	Gross Motor, Self-Help

Source: Head Start Outcomes Report for Head Start.

However, the scores that are used for the domain scores are compiled from the entire program not divided out by classrooms such as half day or extended day. Because these

scores are shown as the program entirety (totaling 105 students) and not broken down by individual students, subtest scores for literacy and language development were used for the study instead of the group literacy scores (see Figure 10).

Since literacy is the focus of this study, the researcher examined the two subtest areas of the LAP-3 that make up the literacy domain. Literacy is divided further into five sub-domains including Phonological Awareness, Book Knowledge and Appreciation, Print Awareness and Concepts, Early Writing and Alphabet Knowledge. There are 34 milestones (items) from the LAP-3 that are used to determine the developmental level for the area of Literacy. All 34 items are comprised from the Pre-Writing and Language subtests. As Literacy is defined by milestones from these two subtests, only the individual student scores (milestones) from Pre-Writing and Language were used in this study. Individual scores are obtained by the number of milestones the student masters. For example, the Language subtest is comprised of 69 developmental milestones. If a student demonstrated mastery on 45 items of the subtest, he would have a score of 45.

A sample of 363 children who participated in center-based preschool programs and family daycare programs were used to examine the reliability and validity of the LAP-3. Head Start and public school settings were used in the study based on the 2000 population projects by the U.S. Census Bureau. Students ranged in age from 30 to 78 months of age.

A Cronbach's coefficient alpha was obtained to determine the internal consistency of the LAP-3. Test-retest reliability ranged from .96-.99 and inter-rater reliability ranged from .81-.98. Criterion validity between the Batelle Developmental Inventory and the LAP-3 indicated strong correlations ranging from .70-.92 in the majority of scales (Hardin and Peisner-Feinburg 39).

Procedures

School district personnel including the Director of Head Start, Head Start Education Coordinator and Head Start Social Services Coordinator met with the researcher to provide access to the data for the study. The data collected included student enrollment information for the 2006-2007 school year, district enrollment from the 2000-2001 school year through the 2006-2007 school year, and the results of the Learning Accomplishment Profile – 3rd edition for all Head Start classrooms. All students were individually assessed by the Head Start Education Coordinator in August, December and May of the 2006-2007 school year. Permission was obtained from the school district to use the data for the purpose of this study. The school district requested the letter of approval not be published in the appendix. Information obtained from the LAP-3 included each child's demographic information including: birthday, ethnicity, and gender. Data were compiled by extended day and half day, by gender, and ethnicity in the areas of Pre-Writing and Language.

Design

Prior to running analyses on the data to test the hypotheses, the researcher examined the data of students to determine language and pre-writing skills upon entry of the program. Independent samples t-tests were conducted to compare the language and pre-writing pre-test scores for the students in the half day and extended day programs for the groups. Factorial Analyses of Variance (ANOVAs) were conducted to determine the effect of gender and ethnicity with language scores and pre-writing scores on the two groups, half day and extended day programs. A factorial ANOVA was chosen due to the study involving two independent variables tested on two groups. According to Krawitz (2007), "The factorial ANOVA allows a researcher to look at the individual effects of each independent variable

being tested on two or more groups (the main effect) while simultaneously looking at the effects-both independent variables have on each other, through what is called an interaction effect" (4). In addition, t-tests for dependent means were conducted to measure the growth from fall to spring in the areas of language and pre-writing skills between half day and extended day programs. The t-test for dependent means was chosen because it allows the researcher to determine the difference between pretest to posttest (Krawitz 2). Additional ANOVAs were not completed on the other subtest areas since the study focuses only on literacy skills. The scores used in this study were from the Pre-Writing and Language subtests, because these were the subtests that comprised the literacy domain.

CHAPTER FOUR: Results

Preliminary Analyses

Students were placed in the extended day and half day programs based on parent request. To determine their entry levels in the areas of pre-writing and language, an independent samples t-test was conducted to determine whether the students in the extended day differed from the students in the half day program in language at the beginning of the year. Students in the extended day program had a mean of 39.19 for language compared to students in the half day program with a mean of 19.7 (see Figure 11).

Figure 11

Language Skills Upon Entry to Program

	Mean	**Standard Deviation**	**Degrees of Freedom**	**t-value**	**Level of Significance**
Half Day	19.7	14.06	33	8.406	.000
Extended Day	39.19	9.35	70		

Students in the half day program started the program significantly lower than students in the extended day program.

An independent samples t-test was also conducted with the groups to determine if differences were present in the area of pre-writing. Although the groups differed significantly with language development, they did not differ significantly in the area of pre-writing (see Figure 12).

Figure 12

Pre-Writing Skills Upon Entry to Program

	Mean	**Standard Deviation**	**Degrees of Freedom**	**t-value**	**Level of Significance**
Half Day	21.44	7.37	33	1.791	.079
Extended Day	24.08	6.40	70		

Students in the half day program (Mean = 21.44) differed slightly than students in the extended day program (Mean = 24.08), but not significantly.

An independent t-test was also conducted on Hispanics in the areas of language and pre-writing. Additional t-tests were not completed to determine the entry level of the students in the Caucasian, Black or Other groups due to small sample size,. However, due to the greater number of Hispanics in both programs, they were utilized in the study to compare the differences between the extended day and half day programs in pre-writing and language skills.

In the area of language, Hispanic students in the extended day program were significantly higher than the students in the half day program upon entry to the program (see Figure 13).

Figure 13

Hispanic Students' Language Skills Upon Entry to Program

	Mean	**Standard Deviation**	**Degrees of Freedom**	**t-value**	**Level of Significance**
Half Day	18.13	9.62	22	5.265	.000
Extended Day	33.77	13.15	35		

Students in the half day program (Mean = 18.13) scored significantly higher than the students in the extended day program (Mean = 33.77) with a t-value of 5.265 which is the $p<.01$ level of significance.

In the area of language, Hispanic students in the extended day program differed significantly than the students in the half day program upon entry to the program (see Figure 14).

Figure 14

Hispanic Students' Pre-Writing Skills Upon Entry to Program

	Mean	**Standard Deviation**	**Degrees of Freedom**	**t-value**	**Level of Significance**
Half Day	20.26	5.97	22	2.355	.024
Extended Day	24.88	8.12	35		

Students in the half day program (Mean = 20.26) scored significantly lower than the students in the extended day program (Mean = 24.88) with a t-value of 2.355 which is significant at the $p<.05$ level of significance.

After examining the data to determine whether the groups identified differed upon entry to the program, the following hypotheses were tested.

Analyses of the Hypotheses

Hypothesis 1

Students attending the extended day program demonstrate more growth in Pre-Writing skills than students attending the half day program as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

A t-test for dependent means was conducted to determine whether a half day or extended day program impacted growth in pre-writing skills. The following is a summary of the findings for pre-writing skills (see Figure 15).

Figure 15

Growth in Pre-Writing Skills in Half and Extended Day Programs

	Mean	**Standard Deviation**	**Degrees of Freedom**	**t-value**	**Level of Significance**
Half Day	9.08	5.16	33	1.913	.058
Extended Day	7.30	4.08	70		

The mean is the difference between the post-test and pre-test score representing the amount of growth over the course of the year. Comparing the means of the two groups, students in the half-day program (Mean=9.08) made more growth between fall and spring than those in the extended day program (Mean = 7.30). Although there was not a significant difference at the $p<.05$ level, it was close to the level of significance with $t_{103}=1.913$, $p=.058$. This indicates there was a marginally significant difference between the two groups. There is not enough evidence to reject the null hypothesis.

Hypothesis 2

Students attending the extended day program demonstrate more growth in Language development than students attending the half day program as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

A t-test for dependent means was conducted to determine the growth in language skills in the half and extended day programs. The following is a summary of the findings for pre-writing skills. (see Figure 16).

Figure 16

Growth in Language Skills in Half and Extended Day Programs

	Mean	**Standard Deviation**	**Degrees of Freedom**	**t-value**	**Level of Significance**
Half Day	19.91	10.08	33	6.61	.003
Extended Day	8.90	6.75	70		

Comparing the mean difference scores of the two groups, students attending the half day program (Mean=19.91) demonstrated more growth in the area of language between the fall and spring as compared to students attending the extended day program (Mean=8.90). Students in the half day program gained significantly more in their language skills t_{103}=6.61, p=.003 than students in the extended day program. There is a statistically significant difference. Half day students improved more than extended day students, which does not support Hypothesis 2.

The t-test resulted with t-value of 6.61. When comparing the t-value with the infinite critical t-value in Salkind's Table B.2 "t Values Needed for Rejection of Null Hypothesis", the obtained t-value at LOS=.05 level is more than the critical value of t=1.645 indicating a

rejection of the null hypothesis. This indicates the treatment variable of the half day and extended day programs differed significantly at the p=.05 level.

Hypothesis 3

Hispanic students attending the extended day program demonstrate more growth in Language development than Hispanic students attending the half day program as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

When comparing the mean difference scores of the Hispanic students in the extended day program (Mean = 9.02) to the Hispanic students in the half day program (Mean = 15.82), there is a difference in the amount of growth in language skills (see Figure 17).

Figure 17

Hispanic Students' Growth in Language Skills in Half and Extended Day Programs

	Mean	**Standard Deviation**	**Degrees of Freedom**	**t-value**	**Level of Significance**
Half Day	15.82	7.90	22	3.377	.001
Extended Day	9.02	7.30	35		

Students in the half day program gained significantly more in their language skills ($p<.01$) than students in the extended day program. Hypothesis 3 is rejected as students in the half day program demonstrated more growth than students in the extended day program. A Cohen's D was calculated and yielded an Effect Size of 0.89 which indicates a large effect size. This means the groups were different and demonstrated significantly different results in the area of language in the half day than the extended day program for Hispanic students.

The t-test resulted with a t-value of 3.377. When comparing the t-value with the infinite critical t-value in Salkind's Table B.2 "t Values Needed for Rejection of Null

Hypothesis" the obtained t-value at the p=.05 level is more than the critical value of t=1.645 indicating a rejection of the null hypothesis. This indicates the treatment variable of the half day and extended day programs differed significantly at the p=.05 level for Hispanic students.

Hypothesis 4

Hispanic students attending the extended day program will demonstrate more growth in Pre-Writing development than Hispanic students attending the half day program as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

When comparing the means of the Hispanic students in the extended day program (Mean = 6.77) to the Hispanic students in the half day program (Mean = 9.91), there is a difference in the amount of growth in pre-writing skills (see Figure 18).

Figure 18

Hispanic Students' Growth in Pre-Writing Skills in the Half and Extended Day Programs

	Mean	**Standard Deviation**	**Degrees of Freedom**	**t-value**	**Level of Significance**
Half Day	9.91	5.59	22	2.526	.014
Extended Day	6.77	3.94	35		

Students in the half day program gained significantly more in their pre-writing skills at the p<.05 level of significance than students in the extended day program. Hypothesis 4 is rejected as students in the half day program demonstrated more growth than students in the extended day program. A Cohen's d was calculated and yielded an Effect Size of 0.64 which indicates a large effect size. This means the groups were different and demonstrated

significantly different results in the area of pre-writing in the half day than the extended day program for Hispanic students.

The t-test resulted with a t-value of 2.52. When comparing the t-value with the infinite critical t-value in Salkind's Table B.2 "t Values Needed for Rejection of Null Hypothesis" the obtained t-value at the p=.05 level is more than the t-value of 1.645 indicating a rejection of the null hypothesis. This indicates the treatment variable of the half day and extended day programs differed significantly at the p=.05 level for Hispanic students.

Hypothesis 5

Male students attending the extended day program do not demonstrate more growth in Pre-Writing development than female students attending the half day or extended day programs as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

A factorial ANOVA was conducted to determine the difference in language growth between males and females in the half day program compared to the extended day program. The following is a summary of the findings for pre-writing skills (see Figure 19).

Figure 19

Growth in Pre-Writing Skills in Male and Female Students

Groups	Gender	Mean	Standard Deviation
Extended Day	Female	7.00	3.80
	Male	7.64	4.39
	Total	7.30	4.08
Half Day	Female	7.05	3.91
	Male	11.37	5.53
	Total	9.08	5.16

When comparing the means of males and females in the extended day program, there is not much difference between the scores. However, when comparing the means of males and females in the half day program, males made more growth than females. When comparing females from the extended day to the half day program, there was little difference between the means. However, males demonstrated more growth in the half day program (Mean = 11.37) than males in the extended day program (Mean = 7.64).

The following provides additional information about the treatment groups, gender and the interaction of the groups and gender (see Figure 20).

Figure 20

Interaction of Gender and Programs in Pre-Writing Skills

Source	**Degrees of Freedom**	**F**	**Level of Significance**
Groups	1	4.40	0.038
Gender	1	7.59	0.007
Groups * Gender	1	4.15	0.044
Total	105		

As indicated above, the results indicate an interaction effect of groups and gender indicates an effect $F_{df1, df2} = 4.15$, $p = .0044$ indicating there is an interaction between the type of program and gender.

A Bonferroni post-hoc comparison was conducted to determine where the difference lies between the scores. There was an interaction effect between the treatment (half day or extended day) and gender. Male students in the half day program demonstrated more growth than females in the half day program.

Hypothesis 6

Male students attending the extended day program do not demonstrate more growth in Language development than female students attending the half day or extended day programs as measured by the Learning Accomplishment Profile 3rd Edition at the 0.05 level of significance.

A factorial ANOVA was conducted to determine the difference in language growth between males and females in the half day program compared to the extended day program. The following is a summary of the findings for language skills (see Figure 21).

Figure 21

Growth in Language Skills in Male and Female Students

Groups	Gender	Mean	Standard Deviation
Extended Day	Female	8.54	7.14
	Male	9.29	6.39
	Total	8.90	6.75
Half Day	Female	20.77	9.95
	Male	18.93	10.47
	Total	19.91	10.08

When comparing the means of the males and females in the extended day program, there is little difference between the two. In addition, there is little difference between males and females in the half day program. However, females in the extended day program demonstrated less growth (Mean = 8.54) than females in the half- day program (Mean = 20.77). In addition, males in the extended day program demonstrated less growth (Mean = 9.29) than males in the half-day program (Mean = 18.93).

The following provides additional information about the treatment groups, gender and the interaction of the groups and gender (see Figure 22).

Figure 22

Interaction of Gender and Programs in Language Skills

Source	**Df**	**F**	**Level of Significance**
Groups	1	42.5	0.000
Gender	1	0.10	0.747
Groups * Gender	1	0.597	0.441
Total	105		

As indicated above, the results of the interaction effect of groups and gender indicates there is no effect (F = 0.597) indicating there were no differential effects for treatment (half day and extended day) for language skills across gender.

There is enough evidence to support Hypothesis 6, indicating there is not a significant difference between males and females in the extended day program and half day program in the area of language skills.

CHAPTER FIVE: Interpretations and Recommendations

This chapter includes interpretation of the results found in Chapter 4, evaluates the results found, discusses the implications of the research data, and makes recommendations for future research.

Prior to running the analyses for each of the hypotheses, the achievement levels for language and pre-writing skills were examined on the groups including: half day and extended day for all students, and half day and extended day for Hispanic students. Results showed students in the half day program differed significantly from students in the extended day program in language skills upon entry of the program. However, in pre-writing development students did not differ significantly upon entry of the program. When determining the difference between the Hispanic students in the half day versus extended day programs, the students differed significantly in both language and pre-writing skills upon entry of the program.

The first hypothesis was tested to examine the achievement growth in pre-writing skills between the half day and extended day program. It was hypothesized that students in the extended day program would demonstrate more growth in pre-writing skills than students in the half day program. Although there was not a significant difference between the two groups, the results indicated students in the half day program demonstrated more growth in the area of pre-writing than the students in the extended day program. When examining the growth in both of the programs, it is evident that Head Start programs lead to growth in pre-writing achievement whether attending a half or extended day programs. This is consistent with Lee's, et al. (1990) results when he found that at-risk black children benefit from any preschool experience compared to none at all (504).

The second hypothesis examined the achievement growth in language development between the half day and extended day program. The researcher hypothesized that students in the extended day program would demonstrate more growth in the extended day program than the half day program. Results indicated students attending the half day program demonstrated more growth in the area of language between the fall and spring as compared to students attending the extended day program. Although the groups differed upon entry to the program, both groups led to growth in language development. As with the pre-writing skills discussed earlier, students make gains whether in a half or full day program.

What is not clear at this point is whether the amount of preschool programming makes a difference. With the groups differing significantly upon entry to the program, it is not apparent yet whether a longer preschool day makes a difference in language growth in at-risk students. Wasik, Bond and Hindman (2006) reported that students from high-poverty homes have deficient vocabularies (70). Given the fact that all of the children in these programs are from high-poverty homes, this could be an explanation as to why they would make growth in the area of language no matter how long they were in preschool. Children from homes limited in communication will increase their language development in any language-rich environment.

The third hypothesis examined the achievement growth in language development between the half day and extended day program with Hispanic students. The researcher hypothesized Hispanic students in the extended day program would gain more pre-writing skills than students in the half day program. Results indicated students in the half day program made more growth in language development than students in the extended day program.

As the majority of Hispanic students speak more than one language, one would anticipate that at-risk bilingual students would make significant gains in their English language development when exposed to a research-based preschool program. From the findings it is clear that students make significant gains in language development when attending a Head Start preschool program. Anthony, et al. (2006) emphasized the importance of language development in Spanish speaking students. As language development is one of the precursors to reading, the more exposure Hispanic students have in a language-rich environment, the more prepared they will be in the elementary years (245).

The fourth hypothesis examined the achievement growth in pre-writing development between the half day and extended day program with Hispanic students. The researcher hypothesized Hispanic students in the extended day program would demonstrate more growth in pre-writing skills than students in the half day program. Results indicated students in the half day program gained significantly more in their pre-writing skills at the than students in the extended day program. However, students in both programs made significant gains in pre-writing development when attending a Head Start preschool.

The fifth hypothesis examined the achievement growth in pre-writing development in male students compared to female students attending the half day and extended day programs. The researcher hypothesized males would not demonstrate more growth in Pre-Writing development and Language development than females. When comparing the means of males and females in the extended day program, there was not much difference between the scores. However, when comparing the means of males and females in the half day program, males made more growth than females. When comparing females from the

extended day to the half day program, there was little difference between the means. However, males demonstrated more growth in the half day program.

Results from the factorial ANOVA indicated males and female students differed in their level of growth in pre-writing skills. The results of the interaction effect of groups and gender indicates an interaction between the type of program and gender. It is possible the reason for more growth from males in half day program could have been due to lack of exposure to fine motor activities (cutting, writing, etc.) prior to attending Head Start. If students had little exposure of such activities, the researcher would anticipate students to have significant growth in that area after a year of exposure in a Head Start preschool.

The sixth hypothesis examined the achievement growth in language development in male students compared to female students attending the extended day and half day programs. The researcher hypothesized males would not demonstrate more growth in language development than females.

When comparing the means of males and females in the extended day program, there is little difference between the two. In addition, there is little difference between males and females in the half day program. However, females in the extended day program demonstrated less growth than females in the half- day program. Females in the extended day program may have demonstrated less growth due to the significant differences between the two groups (extended day and half day) upon entry of the program. If the students in the half day program were behind the students in the extended day program, one would anticipate more growth with preschool instruction. The same was also true for males. Males in the half day program demonstrated more growth than males in the extended day program.

Results from a factorial ANOVA indicated a main effect for the groups (half day and extended day programs). Students' growth in language skills differed depending on the group they were in. There was a not a main effect for gender which means there was not a difference between males and females in the treatment groups. The results of the interaction effect of groups and gender indicates there is no effect indicating there were no differential effects for treatment (half day and extended day) for language skills across gender. As indicated before, students make significant growth in language skills when provided in either type of program.

Results from this study are consistent with George's (2004) study where the length of preschool day did not indicate more growth in achievement. However, the results are not consistent with Zill and Resnick's (2001) study which found that children who participated in full-day programs made greater gains in book-knowledge, early writing and color-naming (363). Although some of the results found in this study indicated the half day program made more growth than full day program, due to the differences between the groups upon entry of the program, this assumption can not be made. However, this study did demonstrate the importance of preschool experience in the area of emergent literacy for all students. Students demonstrated significant growth in pre-writing skills and language development, which are two components of emergent literacy. Of the 104 students in the study, all made growths in the area of language development. Only one student remained at the same level in the area of pre-writing over the course of the year. No matter how long a child attends a preschool program, they are likely to make gains in the areas of pre-writing skills and language development. This is consistent with Dickinson, McCabe and Essex's (2006) who found that intervention during the preschool years has a lasting impact on overall development (12).

Recommendations

The following are recommendations for future research:

- Longitudinal research of the half and extended day programs in the Olathe District Schools is recommended. Additional data is needed to determine the true impact of the length of school day on emergent literacy skills.
- Determine the differences in teacher background such as the number of years teaching experience and the type of educational training to determine if these impact the growth in achievement from students in the same type of programming (half day or extended day).
- Longitudinal research of Head Start students and their reading levels in 3rd grade as compared to at-risk students who did not attend preschool.
- Longitudinal research of students attending a community preschool to determine the effect of length of school day on emergent literacy skills.
- Longitudinal research of Head Start students' social-emotional skills and its interaction with emergent literacy skills.
- Determine the impact of parents level of literacy understanding on student literacy results.
- Determine the factors (socio-economic status, parents level of education, participation in daycare or preschool prior to Head Start, etc.) and their effects on student literacy.
- Determine the impact of a bilingual teaching approach for English Language Learner students and its effect on student literacy.

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APPENDIX A

Letter of Approval from the University Institutional Review Board

19 March 2007

Angela N. Currey
Graduate School of Education
Baker University

Dear Ms. Currey:

The Baker University IRB has reviewed your research project application (M-0037-0307-0319-G) and **approved** this project under Exempt Review. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

The Baker University IRB requires that your consent form must include the date of approval and expiration date (one year from today). Please be aware of the following:

1. At designated intervals (usually annually) until the project is completed, a Project Status Report must be returned to the IRB.
2. Any significant change in the research protocol as described should be reviewed by this Committee prior to altering the project.
3. Notify the OIR about any new investigators not named in original application.
4. Any injury to a subject because of the research procedure must be reported to the IRB Chair or representative immediately.
5. When signed consent documents are required, the primary investigator must retain the signed consent documents for at least three years past completion of the research activity. If you use a signed consent form, provide a copy of the consent form to subjects at the time of consent.
6. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.

Please inform Office of Institutional Research (OIR) or myself when this project is terminated. As noted above, you must also provide OIR with an annual status report and receive approval for maintaining your status. If your project receives funding which requests an annual update approval, you must request this from the IRB one month prior to the annual update. Thanks for your cooperation. If you have any questions, please contact me.

Sincerely,

Marc L Carter, PhD
Chair, Baker University IRB

CC: Willie Amison; file