The Academic Differences Between All Day and Half-Day Kindergarteners

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The Academic Differences Between All Day and Half-Day Kindergarteners

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ABSTRACT

The Academic Differences Between All Day and Half-Day Kindergarteners

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This study looks at kindergarten programs and the question of: do the children who attend all day kindergarten learn more than their counterparts who attend half-day kindergarten. This study looks at two groups of kindergarteners enrolled at Parkside Elementary. Students were given a pre-test and were then given a post-test to determine the extent of growth in the areas of language and math development for those in the all day kindergarten and for those students in half-day kindergarten. There was growth in the area of language but no real difference in the area of math. The data was inconclusive about the academic advantages of attending all day kindergarten as compared to those who attended half-day kindergarten.

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CHAPTER 1

Introduction

Background for the Project

Under the No Child Left Behind Act (NCLB), educators across the country had been called to bring 100% of their students to academic proficiency by 2014. Although seemingly reasonable, this call posed a challenge for schools, due to the ongoing readiness gap that existed. There were huge variations in academic performance and lack of important social skills among children entering kindergarten. The school readiness gap was an issue that was out there and needed to be addressed. In the times of high stakes testing where students were expected to meet increasingly higher expectations and pass standards based assessments in order to graduate, students needed to be better prepared to learn when they started school. Schools and society expected more out of students earlier and earlier, but not all students were capable of such tasks when they entered kindergarten (Bergeson, 2002).

With the change in society and America's global economy, the public expected more from children and students needed to keep up with the elevated academic benchmarks. These higher expectations were measured largely by the state's standards test, the Washington Assessment of Student Learning (WASL). There was such an educational drive to get students starting in the third grade to pass the WASL, that the necessary academic skills and concepts were pushed

further and further down to the earlier grades. Schools and society were asking a lot out of the youngest learners and demanded higher levels of performance. What skills children needed to be ready for school ten years ago were not adequate for today‘s standards. Even though young children learned at different rates and had so much to learn, there was a growing need to get youngsters better prepared even before they entered school. There needed to be a drive to get kids into a variety of different learning situations in order to promote early learning skills. A higher importance was placed on children attending preschool to develop a child’s school readiness or schools would need to be able to address the lack of skills in kindergarten (Office of Superintendent of Public Instruction).

Whether children were ready or not, five-year-old students headed into the school systems in America. A child’s first five years of life continued to be critical to their lifelong development. Young children’s earliest experiences and environments set the stage for future development and success in school and life. Early experiences actually influenced brain development, which provided the foundation for language, reasoning, problem solving, social skills, behavior, and emotional health (Kids Count, 2005). In an attempt to address the differences in the school readiness of certain groups of children, some school districts and the state of Washington advocated for the provision of all day kindergarten. All day kindergarten programs allowed for greater individualization and self-directed activities and served as a means of improving school readiness for the future that

they previously lacked. It was viewed by many that all day kindergarten provided a program that not only extended the time for students in school and increased student's readiness, but also better prepared students academically, socially, and emotionally, for the school years that followed (Langbraaten, 2001).

Statement of the Problem

Kindergarten students enrolled in kindergarten classes across the nation were increasingly ill prepared to meet the demanding needs of Washington states' standards. Schools were required to have their students meet the criteria in No Child Left Behind (NCLB). As a result of this, kindergarten students were progressively more likely to be retained, referred for special services, or were placed into tutoring programs. The traditional half-day kindergarten programs were not able to meet the ever-expanding needs of students. Therefore, the necessity was to provide all day kindergarten to all students and not just to the selected few who could afford or qualified for all day kindergarten.

Purpose of the Study

The purpose of this study was to determine if students enrolled in an all day kindergarten program achieved higher levels of achievement growth based on the assessment tools as prescribed by the district. The results of the achievement test were compared between all day kindergarten students and half-day kindergarten students.

Delimitations

This project included 92 kindergarten students currently enrolled in kindergarten at Parkside Elementary School. Of these 92 students, 44 students participated in all day kindergarten and 48 students participated in half-day kindergarten for the 2007-2008 school year. The group included 49 female students and 43 male students.

Assumptions:

For the purpose of this study, the following assumptions are true:

1. All the students understood the importance of learning and wanted to learn.
2. All students did their best on the school district's assessments.
3. Each kindergarten teacher used the adopted curriculum in the areas of language and math.
4. The school district's assessment was a valid assessment of kindergarten skills required by the state of Washington for kindergarten students.

Hypothesis

Students enrolled in an all day kindergarten program had higher levels of achievement growth based on the district's assessment tool than those students who had participated in a half-day program. The all day kindergarten program better prepared students to be successful in first grade.

Null Hypothesis

The school readiness of entering kindergarten students had no basis on their future success in reading and in math. The achievement on the school's assessment would be similar between students in the all day kindergarten and the half-day kindergarten programs. Significance was determined for $p \geq .05, .01, .001$.

Significance of the Project

The significance of this project was to provide a factual base of information regarding the achievement gains of students in kindergarten by comparing it to their placement in either an all day program or a half-day program, taking into account their actual readiness and preparedness for kindergarten.

Procedure

For the purpose of this project, the following procedures were implemented:

1. Permission to conduct research on students and parents was received from the Parkside Elementary principal, Brock Williams
2. A review of selected literature was conducted at Parkside Elementary School, Heritage University, and articles and documents collected using internet search engines.

3. The kindergarten team at Parkside Elementary met on August 27, 2007 to determine the district assessment tool to use as a pre-test and post-test.
4. The school's assessment was administered to 92 students enrolled in kindergarten at Parkside Elementary as a pre-test in September. The assessment was administered to 44 all day kindergarten students and 48 half-day kindergarten students. The assessment was administered to 49 female students and 43 male students.
5. Data from the Assessment of Kindergarten Skills given in September were compiled.
6. Data was subjected to a t test.
7. Students enrolled in all day kindergarten were given the all day kindergarten program components, which consisted of the regular Parkside curriculum along with the added language and literacy instruction, curriculum, enrichment/remediation, and added learning opportunities to develop reading and math skills.
8. The school's assessment was administered to 92 students enrolled in kindergarten at Parkside Elementary as a post-test in March. The assessment was administered to 44 all day kindergarten students and 48 half-day kindergarten students. The assessment tool was administered to 49 female students and 43 male students.

9. Data from the Assessment of Kindergarten Skills given in March were compiled where the amount of growth for each students was calculated.
10. Data was subjected to a t test.
11. Summary, conclusions, and recommendations concluded the study.

Definition of Terms

For the purpose of this study, the following words were defined:

Kindergarten. A classroom program that consisted of children ages four to seven years of age.

No Child Left Behind . A congressional educational act signed by the Bush presidential administration in 2001 to close the achievement gap of students with emphasis on accountability, flexibility, and choice.

Washington State Assessment of Student Learning. Washington state's assessment tool that measured student learning of the state's academic standards.

Acronyms

ADK. all day kindergarten

EALR's. Essential Academic Learning Requirements

GLE's. grade level expectations

NCLB. No Child Left Behind

OSPI. Office of Superintendent of Public Instruction

QEM. quality education model

WASL. Washington Assessment of Student Learning

CHAPTER 2

Review of Selected Literature

Introduction

This chapter has been organized around the following topics: (a) kindergarten programs, (b), early learning readiness (c), high stakes testing/standards (d) funding, and (e) summary. The categories explored the historic trends of kindergarten from its beginnings in Germany to the current trend of all day kindergarten along with its funding. The importance of school readiness was stressed which was a response to the pressure placed on schools to meet academic standards and to perform well on high stakes tests mandated by the No Child Left Behind (NCLB).

Kindergarten Programs

Kindergarten originated over 130 years ago in a response to help children of poverty and those who had special needs. The founding father was Freidrich Froebel. Froebel was known as the "Father of Kindergarten" because he developed the first kindergarten in Germany (Richie- Sharp, 2007). Historically, kindergarten was created based on Froebel's principle to provide an educational framework for students to develop and learn from their social interactions with their peers. Froebel created a child's garden to give children time to play and grow in order to learn. Through self-guided interactions and activities, students developed their social, emotional, mental and physical faculties. Kindergarten

was brought to the United States by Margarethe Schurz who established the first private Froebelian program in Wisconsin in 1857 (Richie- Sharp, 2007). Susan Elizabeth Blow opened the United State's first successful public kindergarten in St. Louis in 1873 (Watson, 1997). Blow created and taught children in a half-day model. A group of students were taught in the morning and another group in the afternoon. That was the basis of our kindergarten program in America that had stayed true to the Froeblian philosophy until around the 1970's when a push to move from a play-based curriculum to a curriculum focusing on the formal teaching of discrete skills (Lee, 2002).

Broader standards and assessments had been one of the driving forces of the movement to redefine kindergarten. The new standards and assessments reinforced the focus on the academic dimension of child development instead of the social interactions of children. As a result, school districts and classroom teachers have given in to the social and political pressure brought on by the passage of the No Child Left Behind (NCLB) Act and the Washington Assessment of Student Learning (WASL). Pressure brought on by the NCLB and the WASL had further influenced decisions to transform kindergarten, which resembled more of the characteristics of first grade with the added attention to reading and math instruction. The added drive to have students perform at higher levels had pushed the trend toward having schools implement new programs for kindergarten students in order to gain those needed skills. Many schools strived

to accomplish this by having students attend kindergarten all day. Within the framework of all day kindergarten, students attended school all day long and went five days a week as compared to the half-day programs where they went to school for half a day five days a week or all day two to three days a week. Typical half-day programs were about three hours in length, while all day programs were five to six hours in length (Rafoth, 2004). Another drive to restructure kindergarten as stated by the *Education Statistics Quarterly* was attributed to various social, economic, and educational factors (Walston & West, 2004). Increases in the number of single parent households and households where both parents worked outside the home had led parents to seek out all day kindergarten options to better accommodate work schedules and provided a more consistent learning environment for their children. Arranging childcare during the workday was less costly and less complicated for those families when the child was in school for the whole day rather than half of the day. Parents also had a stronger interest in academic preparation to ensure later school success that created a demand for early school programs like all day kindergarten. Because more and more children participated in preschool programs, kindergarten was no longer the first school experience for many children. Many five-year-olds not only had received additional educational opportunities, but they also experienced more social, emotional, and physical activities. Many children were accustomed to an all day

program and were ready for the cognitive, social, and physical demands of all day kindergarten (Watson & West, 2004).

There were definite gains made by students who were enrolled in all day kindergarten (ADK) programs. The conclusions drawn from the research done by Long Beach Unified reported that all day kindergarten resulted in increased academic preparedness for first grade and that the academic gains were more pronounced for students from low socio-economic backgrounds and students who were at risk for retention (Long Beach Unified, 2000). All day kindergarten had produced not only short term but long-term educational gains especially for low-income and minority students (NEA, 2006). The short-term gains, as reported by Joe Nathan (2005), for students in all day kindergarten made an average learning gain comparable to about a month of additional schooling. Not only were there greater reading and mathematical achievement gains than those in half-day but also all day kindergarten students exhibited more independent learning, classroom involvement, productivity in work with peers, and reflectiveness in their work (Martinez & Snider, 2001). The positive social behaviors also had been reported to have positive effects as a result of being placed in all day kindergarten. Students tended to be more self confident, cooperative, self-governing, and engaged in a greater amount of social interactions and classroom involvement (Long Beach Unified, 2005). The findings in the "Summary of Research Full-Day Kindergarten" stated that all day kindergarten students were less likely to be

dependent, shy, and withdrawn with the benefits lasting well into the second grade (Martinez & Snider, 2001).

The benefits of all day kindergarten incorporated additional school related factors: student attendance, school day schedule and curriculum, and teacher satisfaction. Those students who attended all day kindergarten showed better attendance in kindergarten and through the primary grades, which translated to more learning time (Villegas, 2005). All day kindergarten allowed children and teachers time to explore topics in depth, reduced the ratio of transition time to class time, provided for greater continuity of day-to-day activities, and provided an environment that favors a child-centered, developmental appropriate approach (Rothenberg, 1995). Students received more time and opportunity to play with language along with investigating subjects more thoroughly. The foundation for language and math were solidified more consistently with the added amount of time spent on each subject area. All day kindergarten was more likely than half-day classes to use achievement groups for reading (62 percent vs. 50 percent) and for mathematics instruction (42 percent vs. 32 percent) in addition to having more significant amounts of time to devote to social studies, science, art and math (Walston & West, 2004). All day kindergarten programs offered a balance of small group, large group, and individual activities. The all day schedule allowed for more appropriate challenges for children at all developmental levels. For advanced students, there was time to complete increasingly challenging long-term

projects. For students with developmental delays or those at risk for school problems, there was more time for completion of projects and more time for teacher student interactions (IDEAnet, 2007). All Day Kindergarten teachers had more time to get to know their children and individualized their instructions, and students had more time to acquire the early academics skills necessary to be successful in first grade along with the time to complete the increasingly rigorous kindergarten curriculum (Walston & West, 2004).

There was some opposition to placing students in all day kindergarten programs across the country. Some believed that more time with students equated with more formal, academic curriculum, which was not age appropriate. In addition, all day kindergarten was expensive, and brain research indicated that the best use of additional education funds maybe for preschool programs (Martinez & Snider, 2001).

Early Learning Readiness Skills

Significant numbers of American children, particularly those from lower socio-economic families, did not get quality early childcare and education that research showed could improve their chances of succeeding in school. The national estimates for poorer children averaged at fewer than 45% of those receiving adequate child care, Head Start, or related early childhood services (Children, Youth & Family Background, 1998) and less than half of Washington kindergarteners at 44% arrived ready to learn (Woodward, 2006). When children

did not have the necessary early learning experiences, they were poorly prepared for the academic standards that were required of them when they entered kindergarten. The result of this was that too many children started behind, opening a school readiness gap in classrooms and exposed school districts to higher remediation costs and failure rates (Children, Youth & Family Background, 1998).

The problem of school readiness and the gap that existed did not lay individually but jointly with each of the following: families, communities, social services, policy makers, and schools (Kids Count, 2005). It was a collective problem and each held a piece of the puzzle in getting students ready to enter kindergarten. Most researchers agreed that socioeconomic status closely associated with race and ethnicity was one of the strongest predictors of low skills at entry (Sadowski, 2006). Improving school readiness addressed children's development of skills and behaviors as well as the environment in which they have spent their time. The issue was looked at more closely in regards to a schools' readiness for children, children's readiness for school, and the capacity of families and communities to have provided developmental opportunities for young children.

The five critical stakeholders that society looked at to gauge how effective schools were to change the disparities of children's achievement levels was examined. This was done in an effort so that entering kindergarteners were more

apt to meet the schools' higher standards and grade level expectations (GLE's). First were young children's families. Families needed to have a stable, supportive home environment where children were encouraged, talked to, read to, and loved. This was crucial because lower-income students often started school with a much less extensive vocabulary, 5,000 words versus 20,000 for their upper-income counterparts (Murphy& Appelhanz). Second were the nation's communities. Communities played a vital role in readiness for school. In addition to enforcing safe environments, they provided quality early learning opportunities that were available and affordable that were essential for young children. The government funded early intervention programs, like Headstart, to help ethnically diverse and lower socio-economic families (Salvato, 2005). This was especially important for the children of working parents who were struggling to support their families and needed help in educating their children. Third were the state and federal services that were available. Children and families needed to be able to access quality and affordable programs that helped in ensuring proper child development and enabled school readiness such as nutrition and health programs. Fourth were the policymakers. State and federal policymakers played a critical role in allocating resources to support the school readiness of young children. That entailed funding pre-kindergarten programs or just devoting more funds to help families ensure that all children were given the chance to gain the necessary developmental skills. Last were our schools. Schools needed to improve the

readiness of young children by having built strong positive relationships with families and partner with preschool teachers, community programs, and higher education to ensure that they are able to educate all children (Scott-Little, 2000) and by having created programs that ensured smooth transitions to kindergarten. Additionally, teachers and administrators needed to have established a nurturing atmosphere, used a curriculum that provided meaningful contexts and supported practices that addressed the unique ways in which young children learn (Scott-Little, 2000). Children entering kindergarten vary in their early experiences, skills, knowledge, language, and family background. Schools must be ready to address the diverse needs of the children and families in their community and be committed to the success of every child (Scott-Little, 2000).

Experts have said that no single or simple factor determined whether a child was ready for kindergarten. Instead, a child's development needed to be evaluated on several fronts (Parentcenter, 2007). The different readiness facets, that needed to be examined, were determined in the report, School Readiness in North Carolina. The document stated that education needed to think of the condition of children as they enter school and must consider children's development and learning in five critical areas: health and physical development, social and emotional development, approaches toward learning, language development and communication, and cognition and general knowledge (Scott-Little, 2000). Each area was broken down further. Health and physical

development included children's physical development, health status, and physical abilities. Social and emotional development included children's feelings about themselves and others, ability to form relationships, interest in and skills needed to maintain positive relationships with adults and children, ability to understand the perspective and feelings of others, and skills needed to get along well in a group setting. Approaches toward learning included curiosity, enjoyment of learning, confidence, creativity, ability to stay on task, reflection, and interests. Language development and communication included verbal and nonverbal skills to convey and understand others' meaning as well as early literacy skills, such as aware of print and understands that writing means something. These skills and competencies applied to all languages; teachers should expect children who do not speak English in the home to demonstrate these skills in their primary language before they do so in English. Cognition and general knowledge included basic knowledge about the world and other cognitive competencies like early mathematical skills, and basic problem solving skills. All of these components were linked together with the emphasis that readiness was much more than knowing ABC's and numbers (Scott-Little, 2000).

High Stakes Testing and Standards

The No Child Left Behind(NCLB) Act of 2001 was the driving force and the law that had defined the structure of public schools across the nation. The NCLB act had been a response to building on the 1994 "Improving America's

Schools Act" (NCLB Action Briefs). Additionally, it promoted an increased focus on reading and re-authorized the Elementary and Secondary Act of 1965. As a result, public education had gone through a variety of educational reform efforts in the attempt to improve the teaching and learning across our nation over the last ten years. One highly visible reform was high-stakes testing (Cortiella, 2004). There was a lot of debate and speculation as to why states required our students to be subjected to high stakes testing. The push came from society and business leaders that claimed that they needed standards to be significantly raised in order to make sure students could better compete in the global economy and marketplace (New Democracy, 2000). High stakes testing took on the definition of tests that take on high stakes for individual students. The single high stakes test that were given to individual students became the base for decisions related to a student's academic career such as grade retentions and high school graduation diplomas. The tests were to hold individual students more accountable for their own test performance. Not only did high stakes testing hold students more accountable but also held teachers and schools accountable as well. As stated by Candace Cortiella (2004), around 20 states used exit exams as a condition of getting a high school diploma and 17 states required students to pass standardized tests in order to advance to the next grade. As a result of such efforts to measure accountability and comply with the NCLB Act, schools had turned to testing students on a more frequent occurrence and monitor them repeatedly, which was

to yield increased academic achievement (Wright, 2004). Some of the other focus points of the NCLB were to improve academic achievement of students in low-performing schools around the country and to have every student achieving at a proficient level set by each state. As a response, states developed state standards such as GLE's and assessment systems such as the Washington Assessment of Student Learning (WASL). This accounted for expectations in higher grades to be pushed down in order for students to perform well on state assessment measures starting in the third grade. That meant many academic areas and GLE, were pushed all the way down to kindergarten, our opening gateway for students into our public education forum.

A problem contributed to the NCLB was the amount of testing done to ensure students were making sufficient progress. Educators asked just how much do we push our students to achieve and at what age was too young. Kindergarten was not the kindergarten of yester year and that now the earliest years of schooling had become less like a trip to Mister Roger's Neighborhood and more like SAT prep (Tyre, 2006). The increased standards that were directly linked to high stakes testing had required students to push themselves beyond limits never before expected. Through the new expectations and drive to perform higher, students had received their first taste of failure before they have even learned to tie their shoes (Tyre, 2006).

Between the pressure of business and the importance of our global economy verses the pressure placed on students to perform well on high stakes tests society needed to way the two sides of the NCLB. There was a balancing act between the benefits and the shortcomings of NCLB. From the work done in passing the NCLB certain benefits had occurred including accountability standards were set and measured annually, standards were set for teacher qualifications, school improvement were implemented to help to close the achievement gap between white and minority students, along with improved student achievement (White, 2007). In evaluating the effectiveness of NCLB and the high stakes testing required, the shortcomings were also important to consider which included that the Bush Administration had significantly under-funded NCLB at the state level, teachers were pressured to teach a narrow set of test-taking skills and a test-limited range of knowledge. NCLB faulted schools and curriculum for student failure, but critics claimed that other factors were also to blame which included class size, old and damaged school buildings, hunger and homelessness, and lack of health care (White, 2007).

Funding

Many times when schools looked into starting an all day kindergarten program they were looking out for the best interest of students who entered their school. They wanted what was going to be the most beneficial to the students however, whether schools, districts, and/or parents were or were not in favor of

all day kindergarten there was still the matter of cost. In the state of Washington, kindergarten students were only funded as a .5 student. That meant that school districts only received funding from the state for the child to be at the school for half a day. That was why the model of half-day kindergarten has been in place over the decades.

Since the state or federal government to a large degree did not fund all day kindergarten (ADK), the funding was placed upon the backs of local school districts, however most districts simply could not or would not afford it. Implementing ADK was an expensive proposal in most districts when you had to look at additional staffing and professional development, classrooms, computers and capital equipment, and the cost of supplies and materials needed including possibly a new curriculum adoption (Railsback, 2002). Some minor funding advantages came with implementing ADK. One of the biggest one was the mid day bus routes that were no longer needed since the ADK students arrived and left when the older elementary students did. Another added cost saving was the savings produced by students who attend ADK who had lower grade retention rates which equated to lower remediation costs as well. For districts competing for enrollment with nearby districts or with private schools, ADK may also be seen as a worthwhile investment in terms of recruiting students to the district for the long term (Railsback, 2002).

The investment into ADK was not only a financial decision but a sound educational standpoint as well for many schools and families. It was clear that helping students catch-up, helped close achievement gaps and got students off to a faster start. This obviously showed more and more on test scores and with the NCLB, the tests had become pretty high-stakes for schools and teachers (Anderson, 2007). The need for ADK had grown astronomically and because of the lack of state or federal funding many schools had turned to parents to pay for it. For some states trying to implement ADK, deciding to use tuition to fund the ADK program had become more of a situation of the "haves and have nots" where the parents who could afford the tuition payment most often had the kids who did not need an all day kindergarten program (Anderson, 2007).

Looking at the variety of funding decisions made to make ADK a reality between the states and districts, the most cost effective decisions out there were explored. There were an assortment of strategies that many school districts had employed to fund ADK programs across the nation. The cost considerations went beyond the funding of a half-day teacher especially with each district having had unique circumstances that could impact the ability and decision to fund ADK. The Quality Education Model (QEM) used in the state of Oregon was one way to estimate the cost to start up an ADK program (Oregon Department of Education, 2004).

> The QEM is based on prototype schools for which the elementary prototype assumes a school size of 340 students, 40 of which are kindergarteners. Under the conditions that currently exist in Oregon, a school that has 40 kindergarten students would have one kindergarten teacher. To move to a full-day kindergarten for all of those students would require one additional teacher. For statewide full-day kindergarten programs, the QEM estimates cost of the year 2004-2005:
> *per student cost for half-day =$5,241
> * per student cost for full-day = $6,718
> (Oregon Department of Education 2004, p.2).

Schools using the QEM had to use the estimates to see if from a cost perspective if ADK was feasible.

There were various creative methods that school districts used to help fund needed ADK programs. Since most districts had to go beyond the state requirements and their legislative funding to implement ADK, they looked at various methods and sources to make up for the lack of funding. The most common methods were: general funds, blending federal and general funds, special grants, Small and Rural Schools Achievement funds, tuition charges, funds saved from reduced transportation cost, tuition based on community rates for child care, and tuition on a sliding scale for the non-required half-day (Oregon Department of Education, 2004).

Nationally, All Day Kindergarten (ADK) was a hot topic of discussion and how states were funding ADK. There were a variety funding means that were used by states across the nation. As of August 2005, ten states provided more funding for ADK than that which was provided for half-day programs and thirty-

eight states and Washington, D.C. funded ADK and half-day kindergarten at the same level (Griffith, 2005). The relationship between equitable funding by the states between All Day Kindergarten and half-day kindergarten did not fully describe whether the state provided incentive or disincentive to provide ADK to its students. The break down of state funding was complicated but was broken down into three main categories. The first category was where eight states provided an incentive to districts to offer ADK, which equated to a higher level of funding for ADK than half-day kindergarten and equal or above equal funding as 1st grade. Secondly, there were eighteen states which provided a disincentive to offer ADK which meant there was no difference between ADK and half-day kindergarten and was at a lower level than 1st grade funding (Griffith, 2005). The last category was the twenty-one states and the District of Columbia that provided no clear incentive or disincentive for ADK. For the state of Washington, half-day kindergarten was funded at the same level as ADK and was funded at the same level as 1st grade but did not make any distinction between all day and half-day kindergarten.

Summary

The focus of this chapter was to address the available evidence to the topics of: (a) kindergarten programs, (b) early learning readiness, (c) high stakes testing/standards, and (d) funding. In looking at the research on the topics discussed above, so many factors needed to be taken into account that could

influence the decision to provide young children the opportunity to participate in an all day kindergarten program. Students to be successful whether they were in an all day kindergarten class or not needed to be better prepared when they enter school at the age of five. With the growing trend to raise our academic standards, schools were faced with the dilemma of what to do to reach academic proficiency as described in the NCLB. State and district funding was already tight which made it harder to start up all day kindergarten programs that they knew would benefit kids. At the same time knowing that if students started school behind it was harder to bridge that school readiness gap.

CHAPTER 3

Methodology and Treatment of the Data

Introduction

This chapter has been organized around the following topics: (a) methodology, (b) Participants, (c) Instruments, (d) Design, (e) Procedure, (f) Treatment of Data, and (g) Summary. In having conducted the project a variety of process and procedures were utilized. First, permission to conduct research on students at Parkside Elementary was authorized. Next, a thorough background of the problem was done in order to have a better knowledge background on the topic. Then, the timeline and assessment tool used for the research was determined along with what statistical treatment to use after having collected data on the sample population.

Methodology

The events that occurred that had significance to this project started with some in depth research on the subject of all day kindergarten and the effects of school readiness as it related to academic growth in kindergarten students. In having looked at the problem, the researcher decided to see if the effects that an all day kindergarten program had caused significant growth in academic gains of kindergarten students. The researcher decided to proceed with an experimental research project to investigate the relationship between the academic gains of students in all day kindergarten as compared to those in a half-day kindergarten

program. More research on the various topics related to the study: school readiness, kindergarten programs, funding, and high stakes testing/standards were conducted. The assessment tool of kindergarten skills was determined by the kindergarten team at Parkside Elementary in Tenino, WA, which was supported by the standards set by the state of Washington. The time period for the study was determined to be from initial pre-test data collected in September of the 2007-2008 school year through March where the post-test was administered. Between the two testing periods, the all day kindergarten students received additional curriculum, small group and individual group time, and different methods of teaching. The data from each testing period was collected and the amount of growth was tabulated. Then that data was subjected to statistical treatment, t test, to determine if there was significance for the project.

Participants

This sample population for this study was a convenient sample, which included 92 kindergarten students that were enrolled in kindergarten at Parkside Elementary School for the 2007-2008 school year. Of these 92 students, 44 students participated in all day kindergarten and 48 students participated in half-day kindergarten. The group included 49 female students and 43 male students. The two groups, all day kindergarteners and half-day kindergarteners, came from the same type of background, which consisted of looking at their socio-economic, ethnic, gender, and ability status.

Instruments

One instrument was used in the completion of this research. The instrument used was the Parkside Elementary kindergarten pre and post assessment. This assessment tool had been developed by the kindergarten department at Parkside Elementary based upon the wisdom and knowledge of the collective team that have determined to assess students at the developmental kindergarten level. The assessment tool had been aligned to the Essential Academic Learning Requirements (EALR's) and Grade Level Expectations (GLE's) mandated by the Office of Superintendent of Public Instruction (OSPI). Due to the small range of difference between the data from the assessment tool for this research and in class performance and assessment the researcher has considered this instrument reliable.

Design

The method of research used was largely based on action research methods. The action research was used to explore a new approach to the instructional framework of classrooms for kindergarten students and the levels of academic achievement. Pre and post-tests were used. Experimental research methods were also implemented to investigate the relationship between the academic gains of students in all day kindergarten as compared to those in a half-day kindergarten program.

Procedure

During the second full week of school all kindergarten students were individually administered the pre-test using the assessment of kindergarten skills tool that was developed by the Parkside Elementary kindergarten team. The data that was tabulated from the assessment was broken down into two categories: language arts and math was put into a spreadsheet format. From September to the first week of March half-day kindergarten was given the core kindergarten curriculum only and the all day kindergarten students given the all day kindergarten program components which consisted of the regular Parkside curriculum along with the added language and literacy instruction, curriculum, enrichment/remediation, and added learning opportunities to develop reading and math skills. After six months of school, all kindergarten students who had previously taken the pre-test was then administered the post-test. The data that was tabulated on the post-test was entered into a spreadsheet where the amount of growth from September to March was determined. From those results a statistical analysis of the data using a t-test for both areas: language and math was calculated were significance was determined.

Treatment of Data

The data collected from the Assessment of Kindergarten Skills in September for each individual participant during the 2007-2008 school year was compared to the data collected in March using the same test. The amount of

growth was determined for each participant. Using the program, Statpak, the statistical t -test was used to compare the growth between all day kindergarten students and half-day kindergarten students in the two areas of language arts and math to see if there was significant difference between the two kindergarten programs.

Summary

This chapter was designed to review the methodology and treatment of data related to the problem to see if students enrolled in an all day kindergarten program had higher levels of achievement growth based on the district's assessment tool than those students who had participated in a half-day program. The analysis of data and findings from this study are reported in Chapter 4.

CHAPTER 4

Analysis of the Data

Introduction

Chapter 4 has been organized around the following topics: (a) description of environment, (b) hypothesis, (c) results of the study, (d) findings, and (e) summary. With the added pressure for students to succeed and pass standards based tests as prescribed by the No Child Left Behind Act and the Washington State Assessment of Student Learning, it had made schools more aware of getting students started out with a firm foundation of learning that could lead them to academic success in the future. Schools have looked at implementing all day kindergarten programs to get students started early on the right path and meet the higher level expectations.

Description of the Environment

Parkside Elementary in Tenino, Washington is located in South Thurston County and borders Lewis County. Tenino School District had a proud and rich tradition. In the early years, children were served in one room school houses scattered across the region. The district consolidates the south central portion of Thurston County covering an area of approximately 62 square miles. Parkside had housed kindergarten through eighth grade over the past 70 years. In 1989, a newly rebuilt primary school opened its doors and became the current preschool-2nd grade Parkside Elementary.

The ethnic makeup of the student body for the 2007-2008 school year consisted of African American (1.3%), Asian/Pacific Islander (1.9%), Caucasian/White (87.7%), Hispanic (4.9%), and Native American (1.7%). The percentage of students that received free or reduced lunch was 31.9% for Parkside Elementary and 33.8% for the entire district. Of the entire school population, 54.7% of the students were male, and 45.3% were female.

Hypothesis 1

Students enrolled in an all day kindergarten program had higher levels of achievement growth based on the district's assessment tool than those students who had participated in a half-day program. The all day kindergarten program better prepared students to be successful in first grade.

Null Hypothesis

The school readiness of entering kindergarten students had no basis on their future success in reading and in math. The achievement on the school's assessment would be similar between students in the all day kindergarten and the half-day kindergarten programs. Significance was determined for $p \geq .05, .01, .001$.

Results of the Study

To test this hypothesis, a kindergarten assessment tool was used as a pre-test and a post-test with results for each administered time and growth over the entire time study tabulated for each student in the all day and the half-day

kindergarten program. Of the 92 students currently enrolled in the two different kindergarten programs for the 2007-2008 school year, 44 students participated in all day kindergarten and 48 students participated in half-day kindergarten. The breakdown of the females and males participating in the assessment was 24 male students and 20 female students in the all day kindergarten class and 19 males and 29 females in the half-day kindergarten class (see Figure 1).

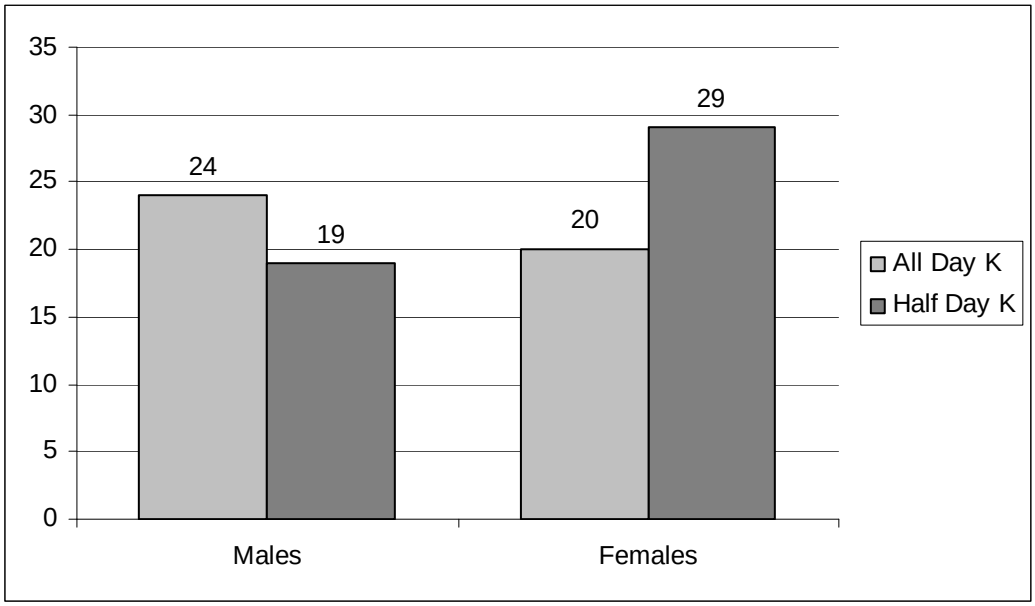

Figure 1: Breakdown of males and females participating in study

The data based on using the Tenino School District's assessment of kindergarten skills for the area of language arts that was collected by the researcher was tabulated and put in a table for both all day kindergarten students as well as for half-day kindergarten students. As the table demonstrated each

student was classified by a letter and number along with their September pre-test score, their March post-test score and their amount of growth over the time of the research study (see tables 1 and 2).

Table 1

All Day Kindergarten Language Arts Scores From District Assessment

All Day Kindergarten Student Scores

student #	September Scores	March Scores	Difference Mar. – Sept.	student #	September Scores	March Scores	Difference Mar. – Sept.
x1	56	101	45	x23	18	94	76
x2	3	60	57	x24	31	87	56
x3	15	99	84	x25	45	98	53
x4	39	103	64	x26	8	85	77
x5	26	99	73	x27	34	100	66
x6	17	89	72	x28	63	101	38
x7	47	103	56	x29	35	93	58
x8	67	99	32	x30	43	100	57
x9	65	103	38	x31	28	97	69
x10	60	103	43	x32	52	103	51
x11	28	92	64	x33	48	100	52
x12	32	87	55	x34	11	48	37
x13	64	99	35	x35	38	102	64
x14	12	100	88	x36	2	61	59
x15	21	99	78	x37	5	82	77
x16	94	103	9	x38	2	102	100
x17	69	103	34	x39	4	56	52
x18	9	100	91	x40	0	38	38
x19	6	75	69	x41	49	87	38
x20	16	94	78	x42	25	88	63
x21	50	101	51	x43	67	101	34
x22	67	102	35	x44	32	101	69

Table 2

Half- Day Kindergarten Language Arts Scores From District Assessment

Half-Day Kindergarten Student Scores

student #	September Scores	March Scores	Difference Mar. – Sept.	student #	September Scores	March Scores	Difference Mar. – Sept.
y1	52	103	51	y25	60	103	43
y2	10	92	82	y26	54	87	33
y3	43	97	54	y27	13	37	24
y4	28	86	58	y28	49	96	47
y5	52	98	46	y29	67	94	27
y6	32	96	64	y30	32	90	58
y7	27	76	49	y31	15	51	36
y8	59	103	44	y32	54	97	43
y9	61	103	42	y33	50	97	47
y10	21	98	77	y34	45	89	44
y11	73	103	30	y35	11	67	56
y12	28	103	75	y36	37	89	52
y13	58	93	35	y37	24	85	61
y14	36	87	51	y38	84	103	19
y15	11	92	81	y39	34	101	67
y16	94	103	9	y40	4	98	94
y17	55	103	48	y41	10	91	81
y18	46	98	52	y42	82	103	21
y19	7	69	62	y43	5	84	79
y20	9	52	43	y44	49	102	53
y21	30	96	66	y45	40	103	63
y22	25	91	66	y46	39	102	63
y23	74	101	27	y47	33	100	67
y24	51	100	49	y48	19	71	52

The amount of growth from the pre-test to the post-test on the language arts component of the Tenino School District's kindergarten assessment tool was entered into the statistical software application called Statpak where the t score

was determined. The analysis revealed that the t score was 1.48 with 90 degrees of freedom based on the number of students that participated in the study (see figure 2).

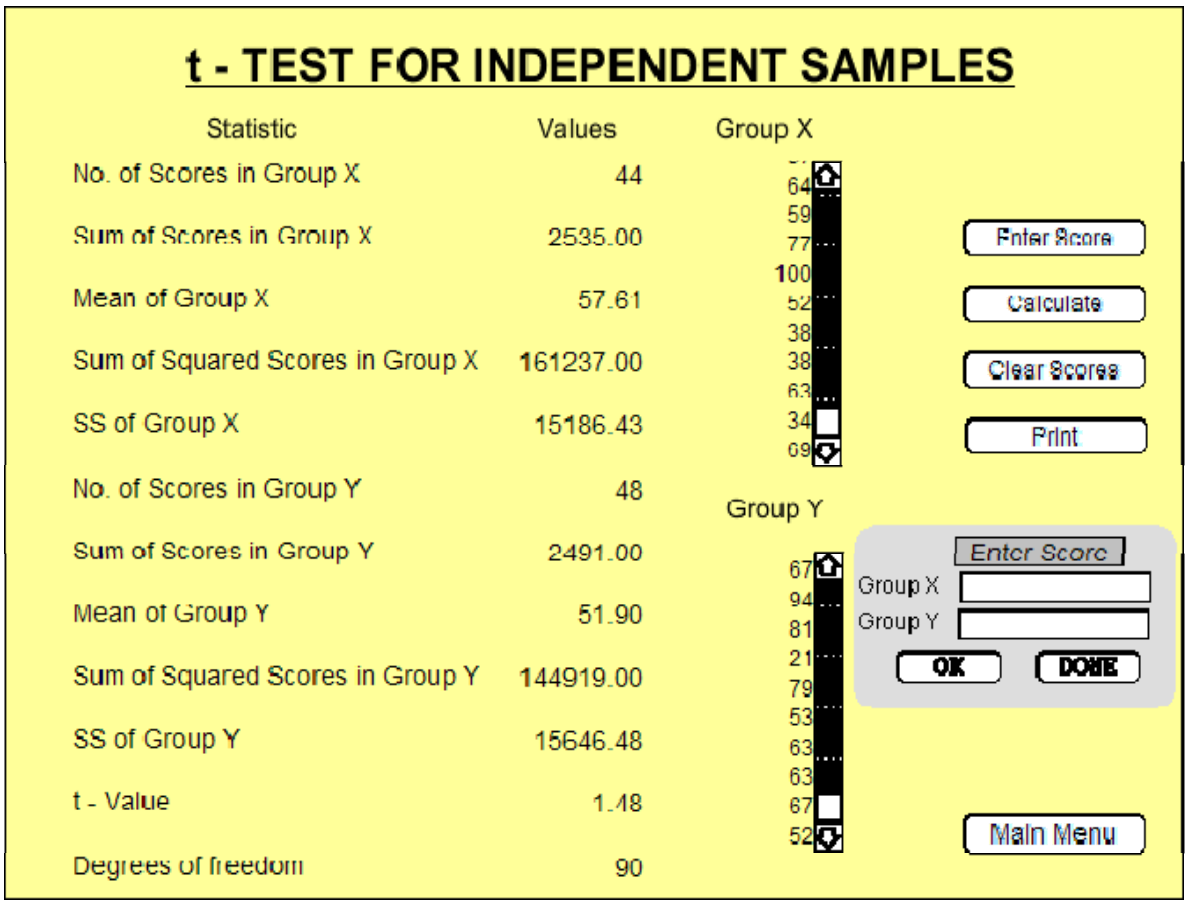

Figure 2: Results of t test for the growth of language achievement

Based on the t-score of 1.48 and 90 degrees of freedom the level of significance for the research conducted on all day and half-day students in the area of Language Arts for .01, .05, and .001 (see table 3). In order for significance to be shown in the area of Language Arts the t- score for .01 would

have needed to be greater than 1.99 and for .05 the t-score would have needed to be greater than 2.64 and for .001 it would have needed to be greater than 3.42. As a result the null hypothesis was accepted and there was no support for the hypothesis at .01, .05, and .001 (see table 4).

Table 3: Distribution of t with 90 degrees of freedom showing for significance

df=90	.01	.05	.001
t			1.48
df= 90			3.42
		1.48	
df= 90		2.64	
	1.48		
df= 90	1.99		

Table 4: Level of acceptance and support for the null hypothesis and hypothesis

	.01	**.05**	**.001**
Null Hypothesis	Accept	Accept	Accept
Hypothesis	No Support	No Support	No Support

The data based on using the Tenino School District's kindergarten assessment tool for the area of Math that was collected by the researcher was tabulated and put in a table for both all day kindergarten students as well as for half-day kindergarten students. As the table demonstrated each student was classified by a letter and number along with their September pre-test score, their March post-test score and their amount of growth over the time of the research study (see tables 5 and 6).

Table 5

All Day Kindergarten Math Scores From District Assessment

All Day Kindergarten Student Scores

student #	September Scores	March Scores	Difference Mar. – Sept.	student #	September Scores	March Scores	Difference Mar. – Sept.
x1	85	87	2	x23	19	59	40
x2	14	18	4	x24	27	46	19
x3	32	84	52	x25	84	87	3
x4	59	87	28	x26	35	84	49
x5	23	87	64	x27	53	87	34
x6	12	54	42	x28	48	87	39
x7	44	86	42	x29	38	55	17
x8	79	87	8	x30	39	80	41
x9	80	87	7	x31	86	87	1
x10	57	87	30	x32	41	87	46
x11	75	78	3	x33	46	87	41
x12	49	59	10	x34	20	72	52
x13	59	87	28	x35	30	86	56
x14	47	87	40	x36	15	78	63
x15	25	87	62	x37	26	86	60
x16	86	87	1	x38	17	81	64
x17	85	87	2	x39	18	57	39
x18	24	86	62	x40	0	35	35
x19	30	55	25	x41	52	85	33
x20	22	76	54	x42	47	79	32
x21	81	87	6	x43	78	87	9
x22	47	84	37	x44	26	87	61

Table 6

Half- Day Kindergarten Math Scores From District Assessment

Half-Day Kindergarten Student Scores

student #	September Scores	March Scores	Difference Mar. – Sept.	student #	September Scores	March Scores	Difference Mar. – Sept.
y1	86	87	1	y25	85	87	2
y2	11	39	28	y26	50	80	30
y3	62	87	25	y27	9	49	40
y4	28	87	59	y28	86	87	1
y5	44	87	43	y29	85	79	-6
y6	28	87	59	y30	18	84	66
y7	24	56	32	y31	16	61	45
y8	47	87	40	y32	52	87	35
y9	46	87	41	y33	60	87	27
y10	25	84	59	y34	48	43	-5
y11	87	87	0	y35	16	47	31
y12	44	87	43	y36	43	86	43
y13	42	80	38	y37	24	49	25
y14	24	87	63	y38	52	87	35
y15	21	85	64	y39	23	87	64
y16	86	87	1	y40	18	69	51
y17	53	85	32	y41	24	62	38
y18	82	87	5	y42	86	87	1
y19	10	83	73	y43	15	55	40
y20	13	59	46	y44	49	86	37
y21	69	78	9	y45	36	87	51
y22	68	78	10	y46	29	50	21
y23	49	87	38	y47	45	80	35
y24	35	74	39	y48	15	36	21

The amount of growth from the pre-test to the post-test on the math component of the Tenino School District's kindergarten assessment tool was entered into the statistical software application called Statpak where the t score was determined.

The analysis revealed that the t score was -.01 with 90 degrees of freedom based on the number of students that participated in the study (see figure 3).

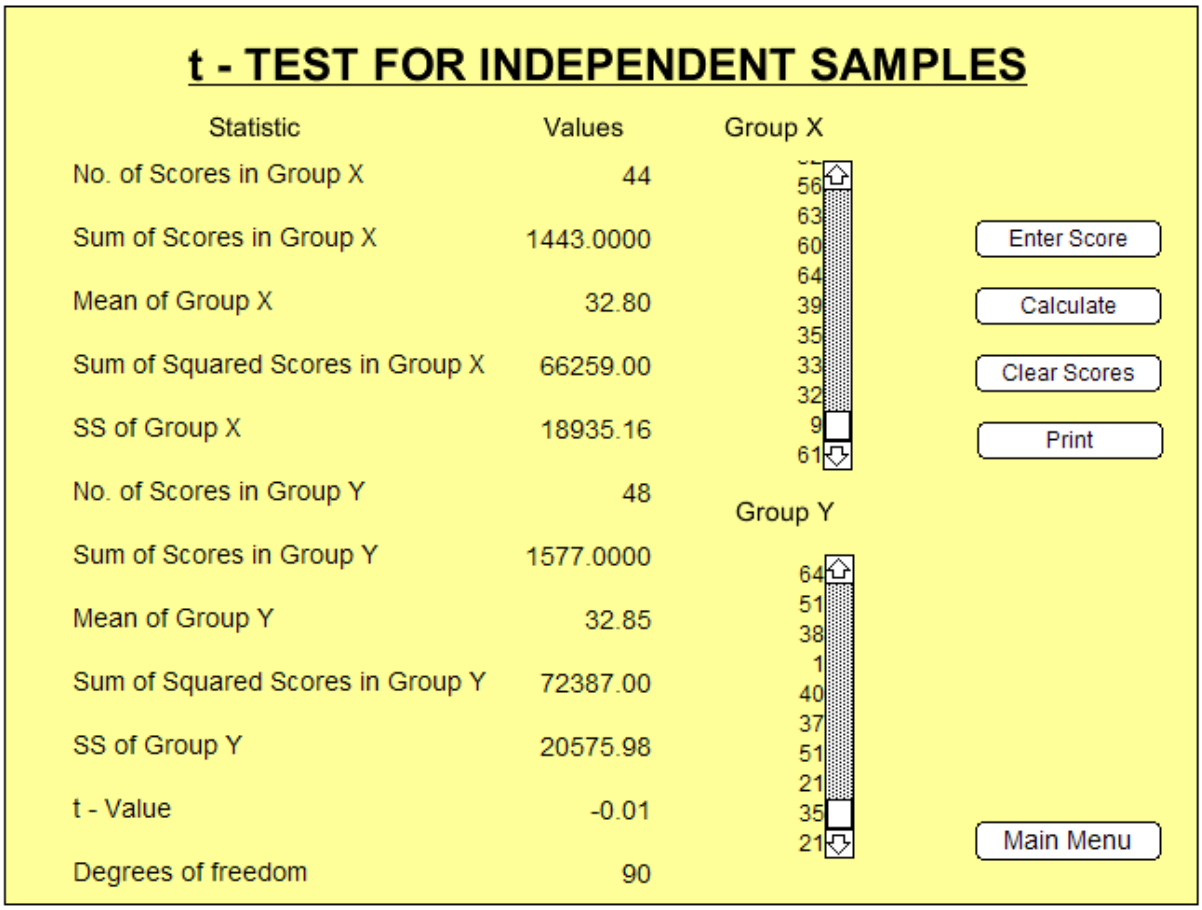

Figure 3: Results of t test for the growth of math achievement

Based on the t-score of -.01 and 90 degrees of freedom the level of significance for the research conducted on all day and half-day students in the area of math for .01, .05, and .001 (see table 7). In order for significance to be

shown in the area of math, the t- score for .01 would have needed to be greater than 1.99 and for .05 the t-score would have needed to be greater than 2.64 and for .001 it would have needed to be greater than 3.42. As a result the null hypothesis was accepted and there was no support for the hypothesis at .01, .05, and .001 (see table 8).

Table 7: Distribution of t with 90 degrees of freedom for math scores

df=90	.01	.05	.001
t			-0.01
df= 90			3.42
		-0.01	
df= 90		2.64	
	-0.01		
df= 90	1.99		

Table 8: Level of acceptance/support for the null hypothesis/ hypothesis for math

	.01	**.05**	**.001**
Null Hypothesis	Accept	Accept	Accept
Hypothesis	No Support	No Support	No Support

Summary

Parkside Elementary's two kindergarten programs: all day kindergarten and half-day kindergarten were tested in September as well as in March based on developmentally appropriate skills in the areas of language development and math. By having calculated their pre-test scores to see where each participant had started at and then their post-test score to see where each participant was at after 6 months of kindergarten gave the researcher data on the amount of growth over that time. The researcher's hypothesis was not supported, due to the results that there was not enough significant growth throughout the course of the study. The data was inconclusive about the academic advantages of attended all day kindergarten as compared to those who attended half-day kindergarten. There was growth in the area of language but no real difference in the area of math. The t score for comparing the growth of language between the two groups was close to showing significance at the .01 level but not enough to support the hypothesis.

CHAPTER 5

Summary, Conclusions, and Recommendations

Introduction

The nation and schools identified the need for kindergarten students to be better prepared for the rigors of first grade and subsequent years of academic success. It was imperative that kindergarten students were given a stable academic foundation to meet the increasingly higher expectations and standards in order to pass standard based assessments and be better prepared to meet the needs of society, the global economy and the future. With the pressure of getting students earlier and earlier to academically proficiency the need to address the shortcomings of students as compared to the standards set was apparent. Implementing all day kindergarten programs in our public schools was one answer to the problem of students meeting and exceeding the standards set forth by the No Child Left Behind Act and the Grade Level Expectations set by the state of Washington. The positive impact on academic proficiency at the kindergarten level was the intent of attending all day kindergarten.

Summary

To effectively impact the academic gains of young learners schools must look at where students are as they enter the public school system. As students enter the school system and attend kindergarten their parents at many schools have the

option to enroll their child in either half-day or all day kindergarten. In looking at the significant growth that the students can gain by the end of kindergarten the researcher needed to know what the students' pre-readiness skills are and what type of kindergarten program that they are going to enroll in. It is also important to see that if students do not enroll in the all day kindergarten program how does that student spend the extra half of day. While all these factors are important, the importance of attending all day kindergarten has been seen as aiding students in reaching higher levels of understanding.

At the beginning of the year at Parkside Elementary all kindergarten students were administered the Tenino School District's kindergarten assessment of kindergarten skills tool. The scores from the assessment tool for the areas of language arts and math were tabulated. Each kindergarten student received the basic core curriculum that was adopted by the Tenino School District during the duration of the research study. In addition to the core curriculum components, all day kindergarten students were given added language and literacy instruction, curriculum, enrichment/remediation, and added learning time to develop reading and math skills using whole group, individual, and small group work. The students were tested again using the same test as a post-test in the first week of March. Those results were tabulated. The amount of growth over that time was determined for each participant. After looking at the amount of growth for students in all day kindergarten as compared to those students in half-day

kindergarten, the researcher had concluded that there was growth in the area of language arts but not to the level to show significance set by the project. The researcher has also concluded that there was no difference in the level of academic growth in the area of math. As a result, the hypothesis was not supported and the null hypothesis was accepted. The data does not support the project at the levels needed.

Conclusions

The researcher concluded that the study was inconclusive as to the overall academic gains of all day kindergarteners as compared to half-day kindergartners. Even though all day kindergarten students made greater gains in the area of language arts as compared to half-day kindergarteners it was not at a significant level. The researcher also concluded that the study showed no difference in the amount of growth all day kindergarten students made compared to half-day kindergarten students in the area of math development.

Recommendations

The time frame, of the project of the academic growth of all day kindergarten as compared to half-day kindergarten, was relatively short. Students were first assessed in September but because of time constraints the post-test was administered in March. The researcher would recommend the time of the research study to either conclude at the end of the 2007-2008 school year or even at the beginning of the 2008-2009 school year. The researcher believes giving all

day kindergarten students the extra time, more enrichment activities, and time for more individualized student groupings throughout the end of the year and up to the beginning of the next school year will help to show even greater gains in not only language arts skills but also math skills. The researcher believes that all day kindergarten students will have more retention and be able to better apply and transfer the skills that are developed in an all day kindergarten program.

Many of the specialized and enrichment activities that all day kindergarten students receive do not get started until the last trimester of the school year. Students in all day kindergarten get a supplemental math curriculum starting in April because with having students all day every day they have finished the basic math curriculum in March. This additional time spent on math while the half-day kindergarten classes are still trying to finish the basic math curriculum the researcher feels gives all day kindergarten students a better understanding and transfer of skills to higher levels of math. Also, the individualized reading groups that all day kindergarten students get to experience start in April as well. The researcher feels that students get a chance to apply and practice their language skills through this program. Students get individual time to be instructed at their level in the fundamentals of reading development especially in decoding words and fluency.

Overall, the researcher believes that by extending the length of the study will help to show the increase in academic gains needed to support the hypothesis. All

day kindergarten students will have a greater ability to easily transfer and apply the necessary kindergarten language and math skills to be better prepared for the rigors of first grade.

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