

Kindergarten Readiness: What Makes the Difference?

A Special Project

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FACULTY APPROVAL

Kindergarten Readiness: What Makes the Difference?

Approved for the Faculty

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ABSTRACT

What does a child need to be successful in kindergarten? What influences kindergarten readiness? This project researches and forms conclusions as to the impact the following four key aspects have in preparing children for kindergarten: (1) Education level of students mothers, (2) the socio-economic status of the students' families (3) preschool attendance and (4) kindergarten entrance age.

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TABLE OF CONTENTS

	Page
FACULTY APPROVAL.....	ii
ABSTRACT.....	iii
PERMISSION TO STORE.....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	viii
LIST OF FIGURES.....	viii
CHAPTER 1.....	1
Introduction.....	1
Background for the Project.....	1
Problem Statement.....	1
Purpose of the Project.....	2
Delimitations.....	2
Assumptions.....	3
Research Question.....	3
Significance of the Project.....	3
Procedure.....	4
Definition of Terms.....	5
Acronyms.....	5

	Page
CHAPTER 2.....	6
Review of Selected Literature.....	6
Introduction.....	6
Overview.....	6
Child's mother's level of education Effect on Readiness.....	7
Effect of Socio-economic Status and Learning Disabilities.....	8
Effect of Preschool on Kindergarten Readiness.....	13
Preschool Attendance.....	17
High Quality Preschool.....	19
Kindergarten Entrance Age.....	23
Summary.....	27
CHAPTER 3.....	28
Methodology and Treatment of Data.....	28
Introduction.....	28
Methodology.....	28
Participants.....	29
Instruments.....	30
Design.....	31
Procedure.....	31
Treatment of the Data.....	32

	Page
Summary.....	32
CHAPTER 4.....	34
Analysis of the Data.....	34
Introduction.....	34
Description of the Environment.....	34
Research Question	36
Results of the Study.....	36
Findings.....	38
Discussion.....	43
Summary.....	44
CHAPTER 5.....	46
Summary, Conclusions and Recommendations.....	46
Introduction.....	46
Summary.....	46
Conclusions.....	47
Recommendations.....	49
REFERENCES	50

LIST OF TABLES

	Page
Table 1. The ADHD Rating Scale.....	9
Table 2. Specific Action Research Baseline Data.....	36
Table 3. Specific Action Research End of the Year Data.....	37
Table 4. Total Survey Results	37

LIST OF FIGURES

	Page
Figure 1. School Ready	8
Figure 2. Likelihood of Failing to be Being Ready for School	12
Figure 3. Ready by Income.....	13
Figure 4. Longview DIBLES.....	22
Figure 5: Student Demographics.....	35
Figure 6: Length of Preschool Attendance.....	39
Figure 7: Preschool Attendance Correlated with Mothers' Education.....	40
Figure 8: Preschool Attendance Correlated with Household Income.....	41
Figure 9: Overall Preschool Attendance.....	42
Figure 10: Family Socio-economic Status.....	43

CHAPTER 1

Introduction

Background for the Project

Kindergarten is the first year students are in the public schooling system.

Some students excel and succeed, while others do not. This project asks and answers the questions "Do students who start behind eventually catch up with their school-ready peers? Why do some students succeed and why are some students unsuccessful? What experiences prior to school put students at an advantage or disadvantage?" This project considers four kindergarten readiness questions: (1) Students whose mothers had higher education were more ready for Kindergarten. (2) The socio economic status of the students' families also played an important role in kindergarten readiness, as well as (3) kindergarten entrance age and (4) preschool attendance.

Problem Statement

In this action research project, the teacher deliberated about what characteristics does a kindergartener have who is well prepared for success in their current and subsequent educational years? If a well prepared Kindergarten student has the readiness to learn, and if this readiness to learn assists the student

well into their K-12 studies, what factors are most influential towards developing that readiness?

Purpose of the Project

The main objective is to seek a better understanding of the key elements required for a child to be academically successful and well prepared for their kindergarten and subsequent educational career.

Delimitations

This project was completed in Eastern Washington in the Lowline School District, during the academic year of 2012-2013. Participants were students from five teachers' classrooms and all were kindergarteners; some of the students had a pre-school education, and some of which did not. Some of the known and controlled boundaries of the project were as follows. All students were considered, regardless of ethnicity, race, or language barriers. The author gathered data on: (1) Education level of students' mothers, (2) the socio-economic status of the students' families, (3) preschool attendance, and (4) kindergarten entrance age. Two students were chosen better understand the specifics of their educational progress and, to gather more details that could not be accomplished entirely anonymously. This portion of the project was designed to better understand the

possible benefits of attending preschool—while this study is enlightening, and potentially informing of the teacher's question, due to the small participant selection, any outcomes or findings cannot generalize to larger populations.

Assumptions

The author assumed that the school-collected information regarding socioeconomic status and mother's highest education level are true and accurate as reported by the surveys.

Research Question

What are the factors that appear to positively influence kindergarten readiness?

Significance of the Project

The teacher explores inputs for Kindergarten readiness to consider what educational implications may exist. It is possible that this understand may inform policy decisions in school districts. For example, if it appears that attending preschool prior to kindergarten does not significantly improve kindergarten readiness, the school district may have a basis to justify removing previously established preschool classes from the district's public education system.

On the other hand, if the data suggests that there may be a benefit enjoyed by students for a preschool experience, then it may inform discussions around reinstating preschool for the school district. Again, the results of this action research project are insufficient to generalize, but it may suggest that future review and study be conducted to ascertain the potential educational benefit of preschool.

Procedure

The procedural domains are important to quality outcomes and better understandings. The teacher-researcher followed the following steps:

1. Obtained letters granting permission to gather student data.
2. Gathered preschool attendance information on current kindergarteners.
3. Collecting data of student's mother's education level.
4. Acquired the students' family socio-economic status.
5. Determined the entrance age upon start of kindergarten year.
6. Evaluated the research data and formulated correlations between data gathered and the potential correlations to kindergarten readiness relative to the four points explored in this project.
7. Present conclusions that may provide a recommended path forward for a school district.

Definition of Terms

Poverty is defined by the United States Census Bureau, as a varying scale dependent on the ratio of family income to the size of the family (income encompassing earnings, unemployment, noncash benefits, etc.).

Acronyms

ADHD: Attention Deficit Hyperactive Disorder

DIAL-R: Developmental Indicators of Assessment of Learning – Revised

OSPI: Office of Superintendent of Public Instruction.

CHAPTER 2

Review of Selected Literature

Introduction

From the research and the significant literature review the author conducted, four key areas were focused on that appear to contribute to the success of Kindergarten readiness. The areas of study were (1) Education level of students' mothers, (2) the socio-economic status of the students' families (3) preschool attendance and (4) kindergarten entrance age.

Overview

Students who enter kindergarten after being successfully prepared in preschool will be more academically successful throughout their educational career when compared to students who did not attend preschool. Within Isaacs (2012) paper, Duncan et al., (2007, 2010) suggests that "School readiness has effects beyond the first few months of kindergarten; children with higher levels of school readiness at age five are generally more successful in grade school, are less likely to drop out of high school, and earn more as adults, even after adjusting for differences in family background" (p. 2). This initial success has been shown not to wane during the years that follow, but rather stays consistently at (approximately) the same level. In summary, if the student entered kindergarten

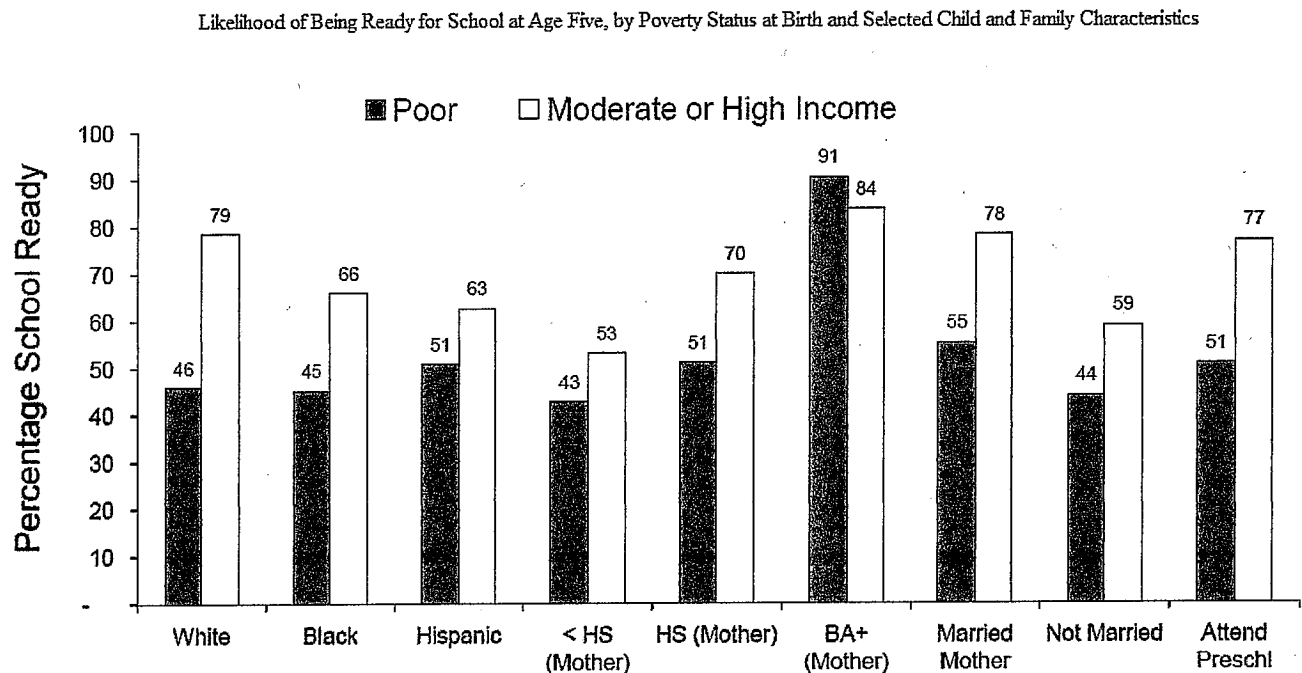
prepared and was successful in preschool, they will remain successful all through their subsequent school year (Duncan et al., 2007; Duncan et al., 2010; Early Learning Technical Workgroup, Nov, 2011; OSPI: Washington Preschool Program, 2011; Winship, Sawhill and Gold, 2011).

Child's mother's level of education effect of on kindergarten readiness

According to Magnuson and McGroder (2002), there is a strong correlation between a student's academic achievements and the mother's education level. Numerous studies have been conducted and the findings of each of the studies showed a strong correlation between higher levels of education and higher academic performance in Kindergarten (Bee et al., 1982; Haveman & Wolfe, 1995; Isaacs, 2012, Magnuson, & McGroder, 2002). Magnuson and McGroder (2012) state, "positive correlations between mothers' educational attainment and children's well-being, and particularly school outcomes and cognitive development, are among the most replicated results from developmental studies" (p.ii). Magnuson, and McGroder recorded "... increases in maternal education are significantly and positively associated with children's academic school readiness, and negatively associated with children's academic problems" (2002, p. ii). This impact of the mother's education level was also discussed by

Isaacs and in Figure 1 it illustrates the impact of the mothers' education level to their student's readiness for school:

Figure 1 – School Ready



Source and Notes: Brookings tabulations of data from the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B). Poor at birth is defined as household income less than 100 percent of poverty and moderate or high income is defined as household income at or above 185 percent of poverty. School readiness of near-poor children (incomes 100-185 percent) is not shown but generally lies between the two other groups (Isaacs 2012, p. 5).

Effect of Socio-economic Status and Learning Disabilities

Currie (2009) speaks to the effects a family's socio-economic status can have on their child's education when a learning disorder or problem is present.

Currie states "According to the hyperactivity subscale of the Strengths and Difficulties Questionnaire of the National Health Interview Survey, 4.19 percent of boys and 1.77 percent of girls have 'clinically significant' ADHD [Attention Deficit Hyperactive Disorder] symptoms... Prevalence is also higher (6.52 percent) in families with incomes less than \$20,000 than in families with higher incomes (3.85 percent)" (Currie 2005, p. 119). As Currie presents in this quote, the occurrence of learning disorders such as ADHD are more prevalent in families below middle class status. Some of the symptoms that are characteristic of a student struggling in school due to ADHD are shown in Table 1 (DuPaul 1991, p. 18):

Table 1. The ADHD Rating Scale

Child's Name _____ Age _____ Grade _____				
Completed By _____				
Circle the Number in the <i>One</i> Column That Best Describes the Child				
	Not at All	Just a Little	Pretty Much	Very Much
1. Often fidgets or squirms in seat.	0	1	2	3
2. Has difficulty remaining seated.	0	1	2	3
3. Is easily distracted.	0	1	2	3
4. Has difficulty awaiting turn in groups.	0	1	2	3
5. Often blurts out answers to questions.	0	1	2	3
6. Has difficulty following instructions.	0	1	2	3
7. Has difficulty sustaining attention to tasks.	0	1	2	3
8. Often shifts from one uncompleted activity to another.	0	1	2	3
9. Has difficulty playing quietly.	0	1	2	3
10. Often talks excessively.	0	1	2	3
11. Often interrupts or intrudes on others.	0	1	2	3
12. Often does not seem to listen.	0	1	2	3
13. Often loses things necessary for tasks.	0	1	2	3
14. Often engaged in physically dangerous activities without considering consequences.	0	1	2	3

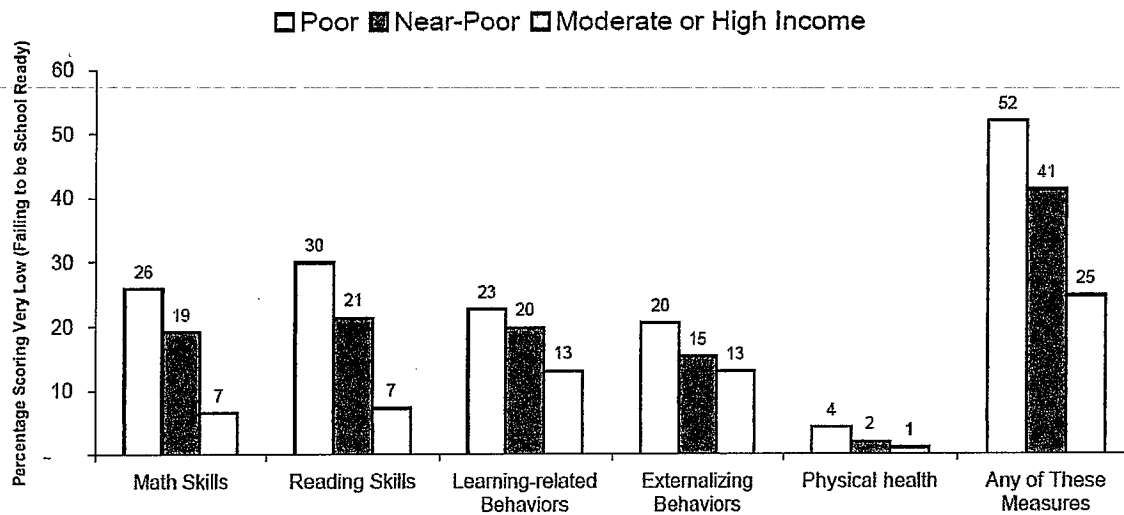
Based on DuPaul's (1991) observations, when a student is already apt to struggle in school due to ADHD, the amount that a student's education is at risk is increased by poverty. Speculation may lead one to believe that perhaps the low socio-economic status of a student may contribute to the ADHD symptoms by not only nature, but nurture as well. For example, if a parent is required to work two jobs in order to make a livable income, these parents may not have the time or money to provide their children with educational activities such as visits to the zoo or the beach, where very valuable vocabulary and other life experienced based knowledge is gained. This can limit the entering Kindergarten student's academic vocabulary (Marzano, 2004, p.10). Many such scenarios leave parents unable to pay for evening babysitters, and because of this the television is often used as a tool to do much of the babysitting. When preschoolers are set in front of the television for extended periods of time, their attention span is lowered and therefore it is often hard for these children to maintain the required cognitive focus when a teacher is reading a book to a class (Anderson & Collins, 1988). This may be from lack of 'scene changes', bright colors, and other excitement they are used to experiencing while watching television. As a study conducted by Christakis, DiGiuseppe, McCarty, and Zimmerman (2004) asserts, "It is also possible that there are characteristics associated with parents who allow their children to watch excessive amounts of television that accounts for the

relationship between television viewing and attentional problems. For example, parents who were distracted, neglectful, or otherwise preoccupied might have allowed their children to watch excessive amounts of television in addition to having created a household environment that promoted the development of attentional problems” (Christakis, DiGiuseppe, McCarty, & Zimmerman, 2004, p. 708).

Currie (2009) also discusses that families of lower socio-economic statuses may lack insurance or funds to purchase medications for ADHD, which makes it very difficult to deal with the effects of ADHD on school performance. This can become a vicious cycle for a family that is living in poverty; because they may not be financial capable to access medications needed to help their child succeed in school, the child does not obtain the education required to break out of the cycle of generational poverty.

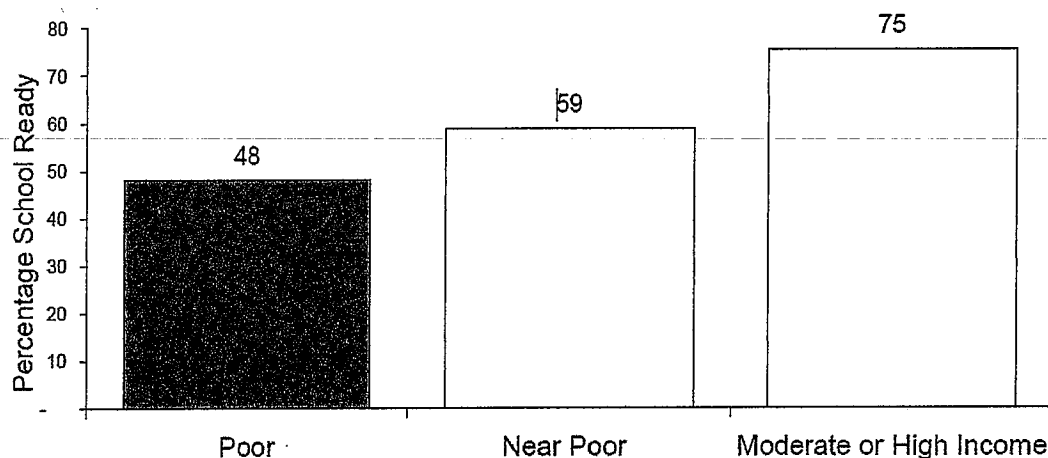
In Figures 2 and 3, Isaacs (2012) presents correlates across a continuum of educational areas.

Figure 2: Likelihood of Failing to be School Ready (Scoring Very Low) on Measures of School Readiness, by Poverty Status



Source and Notes: Brookings tabulations of data from the Early Childhood Longitudinal Study – Birth Cohort (ECLS-B). Very low is defined as more than one standard deviation below average on the academic and behavioral measures and in poor/fair health on the physical health measure (Isaacs 2012, p. 4).

Figure 3: Likelihood of Being Ready for School at Age Five, by Income



Source and Notes: Brookings tabulations of data from the Early Childhood Longitudinal Study – Birth Cohort (ECLS-B). Near poor is defined as household income between 100 and 185 percent of poverty and moderate or high income is defined as household income above 185 percent of poverty (Isaacs 2012, p. 3).

Effect of Preschool on Kindergarten Readiness

Within the Washington Preschool Program: Increasing Access and Outcomes for Children publication from 2011 were the Final Recommendations of the Early Learning Technical Workgroup. From these recommendations, the workgroup suggests that there are three main points that are discussed:

Improve Educational Gains for Children:

- (1) Two years of preschool are more effective in achieving educational outcomes.

Children with two years of preschool make far greater gains than those with one year of preschool. A rigorous evaluation of New Jersey's Preschool program found that the Pre-K group closed more than 50 percent of the achievement gap, versus 18 percent for the —no Pre-K group at the end of the kindergarten year. Two years of program participation roughly doubled the gain at second grade on most measures.

(2) Preschool produces long-term education gains. Two studies of preschool have followed children into adulthood. The High Scope Perry Preschool and the Chicago Child-Parent Centers both found substantial gains in high school graduation of study participants compared to the control groups. Perry Preschool increased high school graduation from 54 percent to 71 percent. Chicago Child Parent Centers increased high school graduation rates from 54 percent to 66 percent. Each also resulted in K-12 cost savings, and increases in lifetime earnings. (See Outcomes and Benefit-Cost Analysis on Page 14.)

(3) Preschool can reduce grade-level retention and special education costs—to schools and to children. In New Jersey, grade retention was cut in half by second grade for participating 3- and 4-year-olds. In Pennsylvania, historical school district special education placement rates

were reduced from 18 percent to 2.45 percent for PreK Counts children; 3-year olds who participated for two years showed the greatest gains.

Each child qualifying for special education in Washington is funded at an average of \$5,400 per year, in addition to the basic per student allocation. As of May 2011, 135,852 (13%) Washington students were receiving special education services. Every one percent reduction in special education placements (1,359 students) will save the state approximately \$7.3 million per year. To illustrate the magnitude of potential savings, cutting special education placements in half, like New Jersey, would save \$366 million each year. (p.9)

These compelling three points concerning public preschool education may lead educational leaders to consider preschool as an effective avenue for preparing children for success not only in kindergarten, but throughout their entire educational career. Isaacs (2012) summarizes these three previously discussed points in the following powerful statement, "School readiness has effects beyond the first few months of kindergarten; children with higher levels of school readiness at age five are generally more successful in grade school, are less likely to drop out of high school, and earn more as adults, even after adjusting for differences in family background" (Duncan et al., 2007, 2010 as referenced by Isaacs 2012, p. 2). "Entering school ready to learn can improve one's chances of

reaching middle class status by age 40 by about 8 percentage points, according to a recent analysis that uses linked data sets to track success from birth to age 40” (Winship, Sawhill and Gold, 2011 as referenced by Isaacs 2012, p. 2).

In another compelling article, Isaacs (2011) states, “With respect to maternal education, we find higher levels of education predict higher achievement” (p. 1). The studies conducted showed significant differences in the addition of just one extra year of schooling for the mother: “Our estimates imply that an additional year of school would increase math and reading scores by 0.06 to 0.09 standard deviations” (p. 1). Isaacs (2012) suggests that there are several risks for students of poverty, and explores effective methods to prepare students for Kindergarten:

Poverty is one of several risk factors facing poor children... In addition to poverty, key influences on school readiness include preschool attendance, parenting behaviors, parents’ education, maternal depression, prenatal exposure to tobacco, and low birth weight. For example, the likelihood of being school ready is 9 percentage points higher for children attending preschool, controlling for other family characteristics, and is 10 percentage points lower for children whose mothers smoke during pregnancy and also 10 percentage points lower for children whose mothers score low in supportiveness during parent-child interactions... Preschool

programs offer the most promise for increasing children's school readiness, according to a simple simulation that models the effects of three different interventions. Expanding preschool programs for four-year olds has more direct effects on school readiness at age five than either smoking cessation programs during pregnancy or nurse home visiting programs to pregnant women and infants, the two other alternatives considered. (p. 1)

Among all the things that could be changed in a family of poverty, the most impactful method to get students ready for success is clearly attending preschool.

Preschool Attendance

Attending preschool has been found to better prepare children for kindergarten (Isaacs 2012, OSPI 2011, University of Minnesota, 2011). If taking advantage of one year of preschool has a positive impact on kindergarten readiness, does each additional year provide even more positive influence?

According to the Office of Superintendent of Public Instruction (OSPI, 2011):

Two years of preschool are far more effective than one year, in achieving educational outcomes. New Jersey's rigorously evaluated preschool program closed more than 50 percent of children's achievement gap after one year, versus 18 percent for the 'no Pre-K group.' Two years of participation roughly doubled the gain at second grade on most measures...

Preschool can reduce grade-level retention and special education costs...

Grade level retention was cut in half by second grade for participating 3- and 4- year-olds in New Jersey. In Pennsylvania, only 2.45 percent of Pre-

K Count children needed school district special education, versus 18

percent for non-participants; 3-year olds who participated for two years

showed the greatest gains. Kindergarten readiness assessments of

Washington's Longview School District show that nearly twice as many

children (48 percent) who have no preschool require alternative curricula

and intensive supports for reading skills as children who participate in

community preschool (25 percent)... Children of all income levels and

abilities benefit from preschool. In Oklahoma's state-funded preschool,

children from lower-middle class families (130 percent to 185 percent

federal poverty level or FPL) showed a 74 percent increase in letter-word

identification and a 37 percent increase in spelling (p. 2).

As expressed in the aforementioned OSPI publication, *Washington Preschool*

Program: Increasing Access and Outcomes for Children (2011), there are some

very compelling numbers that substantiate that preschool has a tremendous impact on kindergarten readiness.

According to Science Daily's article *Early Childhood Education Program*

Yields High Economic Returns (2011), "For every \$1 invested in a Chicago early

childhood education program, nearly \$11 is projected to return to society over the children's lifetimes—equivalent to an 18 percent annual return on program investment, according to a study led by University of Minnesota professor of child development Arthur Reynolds in the College of Education and Human Development” (p. 1). The article also concluded that students who were at a higher educational risk would benefit the most from a preschool experience. It is noteworthy that in Gibbs, Slate and Taylor's article (2000), there was no difference found when comparing public versus a private preschool attended, the benefits were in essence identical. In addition, Gibbs, Slate and Taylor also revealed that within their study of 171 students, "Students who had attended preschool demonstrated statistically higher overall school readiness, higher Physical scores, and higher Personal scores than students who did not attend preschool” (2000, p. 1). This study led the researchers to believe that participation in a preschool program did indeed positively affect the students' kindergarten readiness.

High Quality Preschool

In a moving quote from Sullivan-Dudzic, Gearns, & Leavell (2010), the authors strongly assert that there is an urgency for a high quality preschool system to be integrated into the public elementary schools:

Numerous statistics keep us up at night and confirm the need for PreK-3 intervention. The United States has the largest per capita prison population in the world (Pew Study, 2008). Sixty percent of America's prison inmates are illiterate and 85 percent of all juvenile offenders have reading problems (National Adult Literacy Survey, 1992). The cost of illiteracy to businesses and taxpayers is \$20 billion per year ("Illiteracy: A National Crisis," United Way). The committee for Economic Development found that investing \$4,800 per child in preschool could reduce teenage arrest by 40 percent (Carroll, 2008). Just as compelling is the growing body of research that confirms the significant impact we make when children receive quality early education aligned with quality K-3 education.

It is no wonder that there is a renewed energy around early learning across our nation. (p. 2)

Not only are the children who are ill prepared for kindergarten often cause disruptions within classrooms, but according to the research done by Sullivan-Dudzic, Gearns, and Leavell in 2010, they often continue to disrupt – to the extent of causing crimes into adulthood.

In 2005, Haight, studied The Effects of Preacademic Experiences on Kindergarten Readiness. The goal of the study was to determine if there was a

significant difference in test scores (specifically the Developmental Indicators of Assessment of Learning – Revised (also known as the DIAL-R) test which assesses for kindergarten readiness) between students who attended preschool less than three days per week and those who attended preschool three days or more per week. This study concluded that children who attended preschool at least 3 times per week performed better on the DIAL-R Test of Kindergarten Readiness than children who did not.

Not only are there benefits to the preschool aged students associated with attending preschool, but there are also benefits to them up to and including adulthood. The act of attending preschool may have a substantial effect on the life of the students monetarily. Ultimately the economy of the United States may enjoy a benefit by increased preschool attendance, making it clear that providing a public preschool option nationwide is well worth the investment to our country. Bartik's (2012) assertion suggests a powerful academic benefit tied to future income:

Improving a child's kindergarten test scores by 1 percentile is estimated to raise average adult earnings by about one-half of 1%. A 1 percentile increase in a group of children's test school performance is likely to translate into an increase in kindergarten readiness by a similar amount."

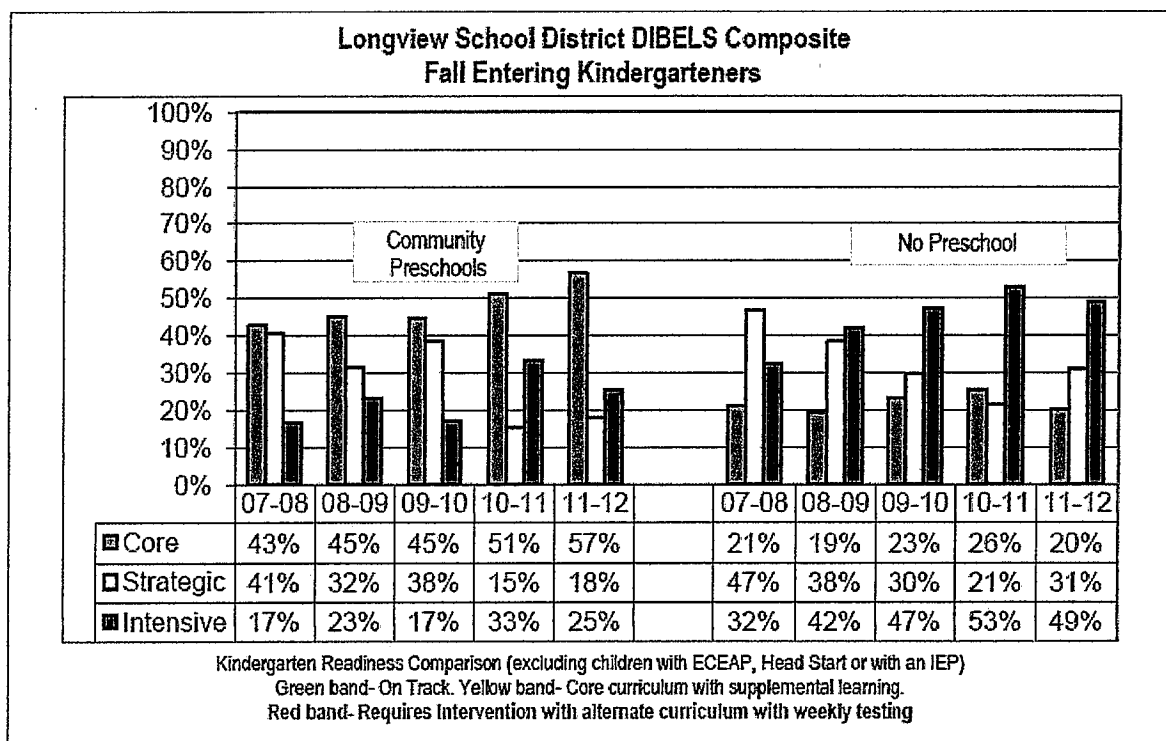
Therefore, if we can increase the kindergarten readiness of all poor

children by 10% or so, we would be likely to improve their average lifetime incomes by at least 5%. This would be a quite large dollar figure.

(p. 1)

Through the studies by Issacs (2012), referenced in Bartick's (2012) article, preschool attendance was the most effective way to help students be successful in school. Figure 4 (Final Recommendations Workgroup 2011, P. 10), there is a remarkable difference between students who attended preschool and those who did not, as measured by students' DIBELS test scores.

Figure 4 – Longview DIBELS



Kindergarten Entrance Age

It is common for many schools to use entrance age as an indicator for Kindergarten readiness. At first review it might appear that an older child may be more ready—however, little is controlled for in the aspect of home life. As Gladwell (2008) discusses, other factors need to be factored in to more accurately assess the effect of entrance age alone. For example, questions such as “are children who enter kindergarten at age 6, as compared to the average age of 5, of high socio-economic status, and are they therefore more involved in multiple educational and social activities?” need to be asked. Contrasting questions need to be addressed as well, “are the parents of those who enter kindergarten the day after they turn 5 unable to provide child care because of a low socio-economic status?” In summary, there are too many uncontrolled factors to accurately determine *why* an older student does better, and why a younger is more apt for failure.

According to Gladwell (2008), most often when we look at kindergarten students who are older than their peers who are more successful, we assume that this unleveled success is due to the maturity of the child having another year under their belt, but if we were to analyze the situation, we would find that these older students have had an extra year of practicing the skills they learned previously. Gladwell (2008) offers a very powerful example that has implications

for Kindergarten readiness and specifically the chronological age of entering Kindergarten. Gladwell tells the story of hockey players by birth date. It becomes apparent quite quickly that these children had months of extra practice of hockey, while the younger students didn't have those valuable months to prepare. This is exposed beautifully in the following segment of the book:

The explanation for this is quite simple. It has nothing to do with astrology, nor is there anything magical about the first three months of the year. It's simply that in Canada the eligibility cutoff for age-class hockey is January 1. A boy alongside someone who doesn't turn ten until the end of the year—and at that age, in preadolescence, a twelve-month gap in age represents an enormous difference in physical maturity... these exact same biases also show up in areas of much more consequence, like education. Parents with a child born at the end of the calendar year often think about holding their child back before the start of kindergarten: it's hard for a five-year-old to keep up with a child born many months earlier. But most parents, one suspects, think that whatever disadvantage a younger child faces in kindergarten eventually goes away. *But it doesn't.* It's just like hockey. The small initial advantage that the child born in the early part of the year has over the child born at the end of the year persists. It locks

children into patterns of achievement and underachievement, encouragement and discouragement, that stretch on and on for years.

The sociologist Robert Merton famously called this phenomenon the “Matthew Effect” after the New Testament verse in the Gospel of Matthew: “For unto everyone that hath shall be given, and he shall have abundance. But from him that hath not shall be taken away even that which he hath.” It is those who are successful, in other words, who are most likely to be given the kinds of special opportunities that lead to further success. It’s the rich who get the biggest tax breaks. It’s the best students who get the best teaching and most attention. And it’s the biggest nine- and ten-year-olds who get the most coaching and practice. Success is the result of what sociologists like to call “accumulative advantage.” The professional hockey player starts out a little bit better than his peers. And that little difference leads to an opportunity that makes that difference a bit bigger, and that edge in turn leads to another opportunity, which makes the initially small difference bigger still – and on and on until the hockey player is a genuine outlier. But he didn’t start out an outlier. He started out just a little bit better. (Gladwell 2008, p. 24-30)

A quote (Chang, 2008) from Publisher Weekly encapsulates the idea Gladwell (2008) presents succinctly, “...a provocative look at why certain five-

year-old boys enjoy an advantage in ice hockey, and how these advantages accumulate over time. We learn what Bill Gates, the Beatles and Mozart had in common: along with talent and ambition, each enjoyed an unusual opportunity to intensively cultivate a skill that allowed them to rise above their peers" (p. 1).

According to analyses conducted by Gullo and Burton (1992), children entering the public school preschool program at age 3 or age 4 scored considerably higher on the Metropolitan Readiness Test (testing for first-grade readiness) than children who entered school at age 5. In Gullo and Burton's article (1992), "The findings also indicated that if children were the youngest in their class they did not score as high as their older counterparts in the [age]4 and [age]5 cohorts. However, no difference was found on achievement scores between the oldest and the youngest for the K3 cohort" (p.174). Gullo and Burton also explain that "...regression analysis revealed that age of entry and number of years of preschool accounted for a significant amount of the variance, while sex did not" (Gullo, Burton, 1992, p. 175). Those children who started school earlier were afforded much more practice than their later-entering counterparts.

Summary

In summarization of the author's research, the literature shows that students whose mothers had higher education were more prepared for kindergarten. The literature also shows that the socio-economic status of the students' families was a valuable indicator of the likelihood of kindergarten readiness, as was the attendance or lack of attendance in a preschool. Entrance age was found not to be a decisive factor relative to kindergarten readiness. Students who are ready for success in kindergarten are shown to be successful throughout their educational career.

CHAPTER 3

Methodology and Treatment of Data

Introduction

The author retrieved and examined pre-school attendance records from the Lowline School office staff, as well as gathered typical income and education levels of the kindergarten students as well as two focus students. Principal-approved surveys were also sent home to ascertain (1) Education level of students mothers, (2) the socio-economic status of the students' families (household income of the family) (3) preschool attendance and (4) kindergarten entrance age. The sample size of the study was limited; therefore the results are not generalizable.

Methodology

The author used action research which combines both qualitative and quantitative components. A qualitative approach fit well with the data being gathered. The research consisted of observing and assessing patterns between children who had attended preschool as well as the child's entrance age to kindergarten, and the socio-economic status of the family, as well as the mother's education level. According to L.R. Gay, G. E. Mills, and P. Airasian (2009), the qualitative approach fit the researcher's question because qualitative data as well

as quantitative data will be utilized, but the quantitative in a lesser amount than qualitative. The author will examine records (attendance), collect survey data regarding the various topics of the literature review, as well as collect qualitative and observational data from two case-study students. Gay, Mills, and Airasian state, "Action research in education is any systematic inquiry conducted by teachers, principals, school counselors, or other stakeholders in the teaching-learning environment that involves gathering information about the ways in which there particular schools operate, the teachers teach, and students learn. This information is gathered with the goals of gaining insight, developing reflective practice, effecting positive changes in the school environment (and on educational practices in general) and improving student outcomes in the lives of those involved" (2009, p. 508).

Participants

Out of a total of 113 kindergarten students, the researcher gathered specific data regarding preschool attendance as was available. The attendance of preschool as well as the duration of the attendance was collected. The researcher selected two students to perform detailed action research. The participants were selected as a stratified sample. Surveys were sent home for collecting data concerning mothers' level of educational attainment, the families' socio-economic

status (as found with the household income level), the mother's highest level of education, what age the students entered kindergarten at, and which students attended preschool.

The detailed action research student's mothers had different education levels at the time they entered kindergarten, and one student attended preschool while the other did not. Specifically, student A attended preschool and their mother's education level was a Master's degree. Student B did not attend preschool, and their mother's education level was a G.E.D. certificate. Student A's scores (as shown in Table 1 within chapter 4) that were recorded at the beginning of the school year were significantly higher than Student B's scores. Throughout the year Student A maintained higher scores than that of Student B, although both advanced their knowledge.

Instruments

The data of students who attended preschool was collected through the school office, based on the previous year's preschool attendance records. The birthdates of the students were used to generate the age of the students when entering kindergarten. There was also a questionnaire sent home asking about preschool attendance. This survey was translated into Spanish, the other language of our students and their families. Of the 113 surveys, 108 were returned (a 95.5%

return rate). Using the attendance records has a high reliability, but does not account for extended absences, drop out students, private preschool attendance, or out-of district preschool attendance. The surveys sent home helped to rule out any errors because of private preschool attendance, and therefore a lack of attendance records within the public school this research was conducted.

Design

The author chose to utilize an action research format that combined aspects of both qualitative and quantitative methodology for this study, and within this method the researcher conducted action research.

Procedure

The researcher gathered preschool attendance data for as many registered kindergarteners as possible, while selecting two students for the action research. The students for the detailed action research were chosen with one being a preschool attendee and one who did not attend any preschool. Parent demographic and preschool attendance surveys were sent home to be returned to school, to determine the mother's highest level of education, as well as the entrance age of the students upon entrance of kindergarten. Based on the level of knowledge the action research students entered kindergarten with, the researcher correlated those

levels with preschool attendance for those individuals. Regarding the large kindergarten class of 113 students, the researcher gathered preschool attendance and correlated those scores with the mother's education level as well as household income and compared that with students who did not receive preschool education. Graphs were created to show the connection between preschool attendance and mother's highest level of education, as well as student scores connected with mother's highest level of education, and were used as a method of comparison.

Treatment of the Data

The author utilized Microsoft Excel to create the correlational graphs of preschool attendance and mothers' education level as well as household income. The names of students were coded using a random number generator, assigning random numbers to students, so no identifiable information could be gleaned from the graphs. All data was secured in a locked file cabinet.

Summary

The research concerning Kindergarten readiness was conducted in four separate sections, (1) evaluating Student's mother's highest education level (2) the socio-economic status (taken from the family's household income) of the students' families, (3) kindergarten entrance age and (4) preschool attendance.

Collecting these four points of information was done by sending home an optional demographic survey that requested information on education levels, household income level, kindergarten entrance age, as well as preschool attendance. Baseline scores for the action research students were collected at the beginning of the school year 2012-2013. This information was combined to provide an insight to the observational data collected throughout the year, collected in a journal. While this information proves insightful, because the sample size is very limited, further study would need to be performed before generalization of the results of this study can feasibly occur.

CHAPTER 4

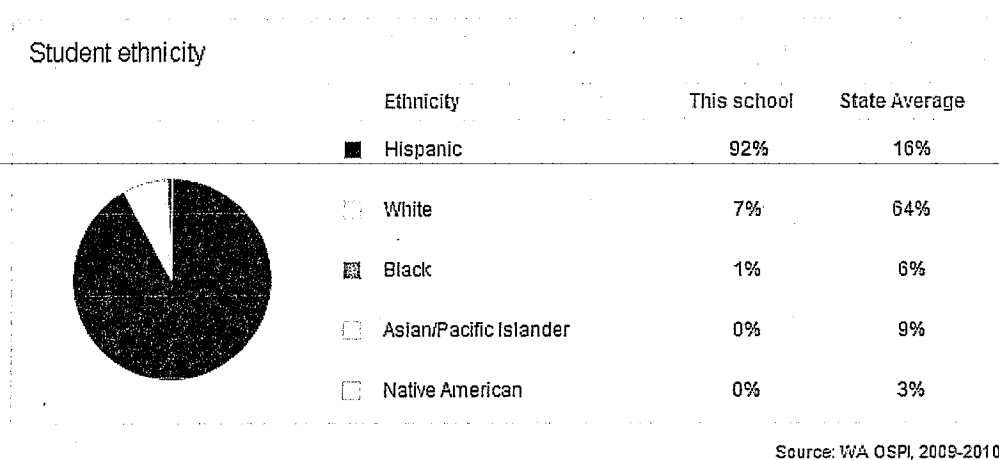
Analysis of the Data

Introduction

According to the research conducted by the author, students who are successful in kindergarten are successful throughout their entire school career. If schools can educate parents and the community what will help their child to come to kindergarten ready for success, the educational gap will decrease—bringing more students to success, with fewer students being unsuccessful.

Description of the Environment

The environment in which this study was performed was the Lowline School District in Central Washington, which serves approximately 600 students in grades K-5. This study consisted of five kindergarten classes. 92% of the school is Hispanic, as compared to the state average of 16%. The school has 81% of students who are eligible for free or reduced-price lunch; however because of a state program with the school location and relative poverty in the area, the school gives free breakfast, lunch, and afternoon snack to all students. According to OSPI, the demographics of the school the author studied are shown in the graph shown in Figure 5.

Figure 5: Student demographics of Lowline Elementary (OSPI 2009-2010).

Student subgroups

	This school	District average	State average
Students eligible for free or reduced-price lunch program	81%	N/A	42%
Special education	16%	N/A	13%
Transitional bilingual	42%	N/A	8%

Source: WA OSPI, 2009-2010

Background data was gathered to determine what percentage of the current kindergarten population accessed preschool education. Surveys were sent home with the students for the parents/care givers to complete and return, asking if their child attended a preschool of any kind, what their mothers' highest level of education attained was, and what was the income-level of the family.

Research Question

What does a child need to be successful in kindergarten?

Results of the Study

Baseline data for the action research individuals upon entering kindergarten are presented in Table 2:

Table 2 – Specific Action Research Baseline Data

Student	SES	PA	ME	Letters	Colors	Counted	Numbers	Shapes
A	high	yes	Masters degree	49	11/11	29	0-15	4/5
B	low	no	High school	36	7/11	10	0-10	3/5

*SES = social-economic status, PA = preschool attended, ME = mother's highest education level, Letters = letter names known, upper and lower case, Colors = color names known out of 11 shown, Counted = the highest a student could count on their own, Numbers = number names known, Shapes = shape names known out of 5.

Table 3 – Specific Action Research End of the Year Data

Student	Letters	Colors	Counted	Numbers	Shapes
A	52	11/11	120	0-100	5/5
B	49	11/11	100	0-50	5/5

* Abbreviations are the same as Table 2 – Specific Action Research Baseline Data

Table 4 – Total Survey Results

Total Students Enrolled in Kindergarten through Lowline Elementary	Surveys Returned	Total Attended Preschool**	Mothers' Education above HS	SES: Annual Household Income	Entrance Age**
113	108 (95.5% return rate)	47.5% (57)	28% (30)	>10k: 18 >20k: 15 >30k: 30 >40k: 24 >50k: 8 >60k: 3 >70k: 4 >80k: 5 >90k: 0 >100k: 0 >150k: 1 <150k: 0	4yo: 12 5yo: 90 6yo: 6

******(based on school records as well as surveys)

Findings

The action research students contrasted in that Student A attended preschool, her mother's level of education was a master's degree, and the family's socioeconomic status was middle class. Both Student A and B entered kindergarten at 5 years old, however, Student B was older – Student A was born in December and Student B was born in August, so there were four months

between the two. One might assume that because Student B was older, they were more likely to do well on the entrance testing, however, it was clear with the results gathered at the beginning of the year, that the adage which Gladwell speaks about it true, 'practice makes perfect': Student A attended a full-year of preschool while Student B did not attend preschool at all. Student B's mother's education level was to a high school diploma, the socioeconomic status of the family was low, and they did not attend preschool.

The survey results are stated in Figure 7, Figure 8, Figure 9, Figure 10, and Figure 11 (*108 out of 113 surveys were returned—a 95.5% return rate*):

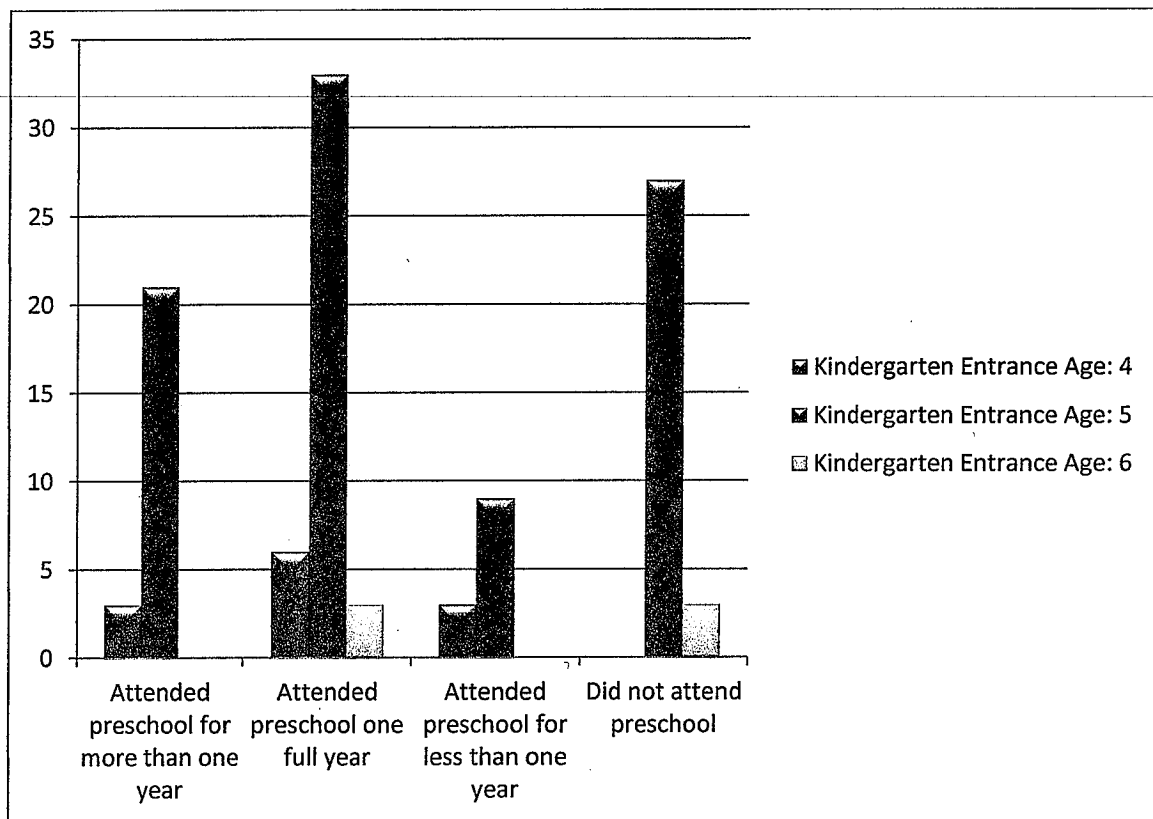
Figure 6 – Length of Preschool Attendance

Figure 7 – Preschool Attendance correlated with mothers' education

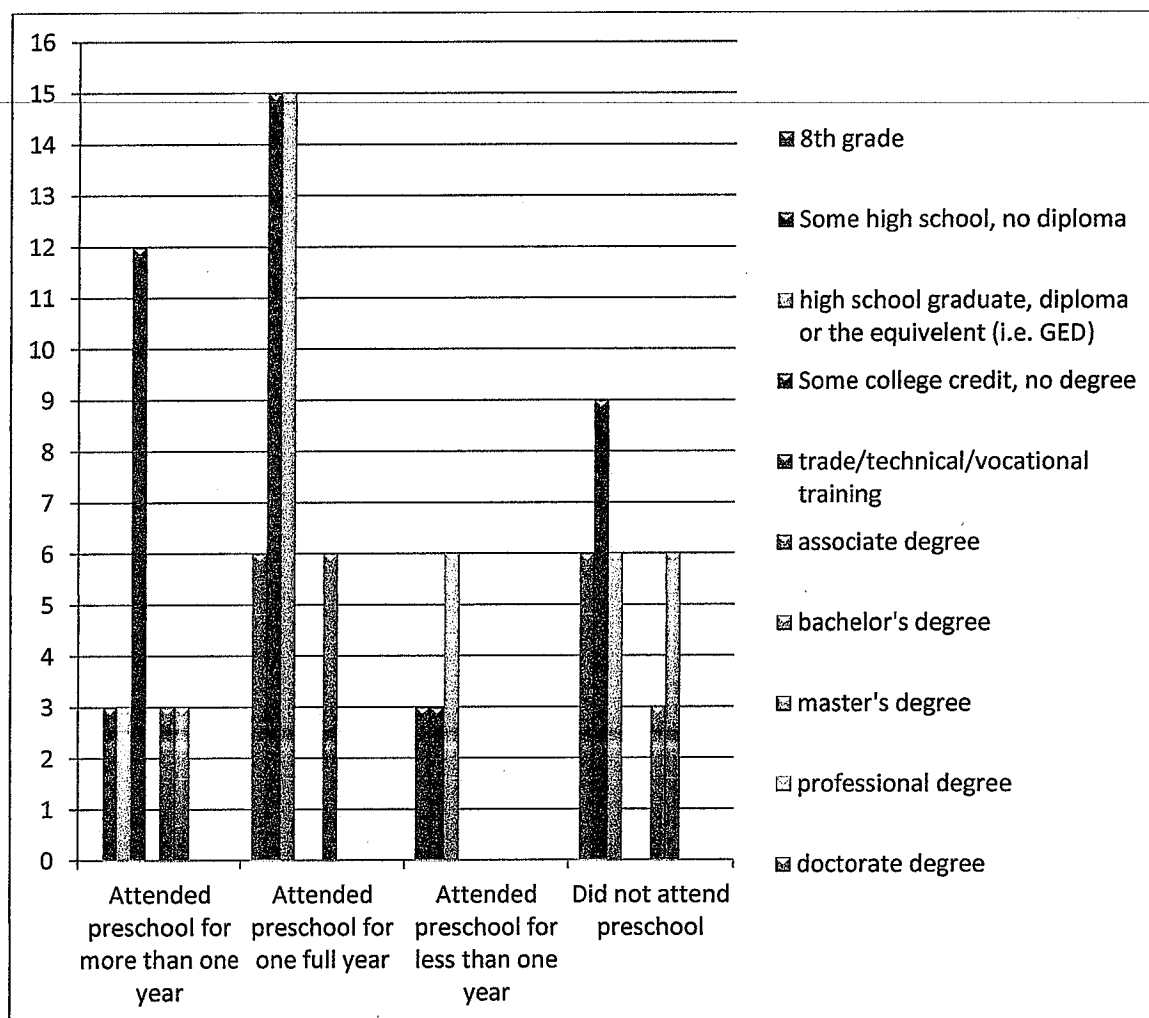


Figure 8 – Preschool Attendance correlated with Household Income

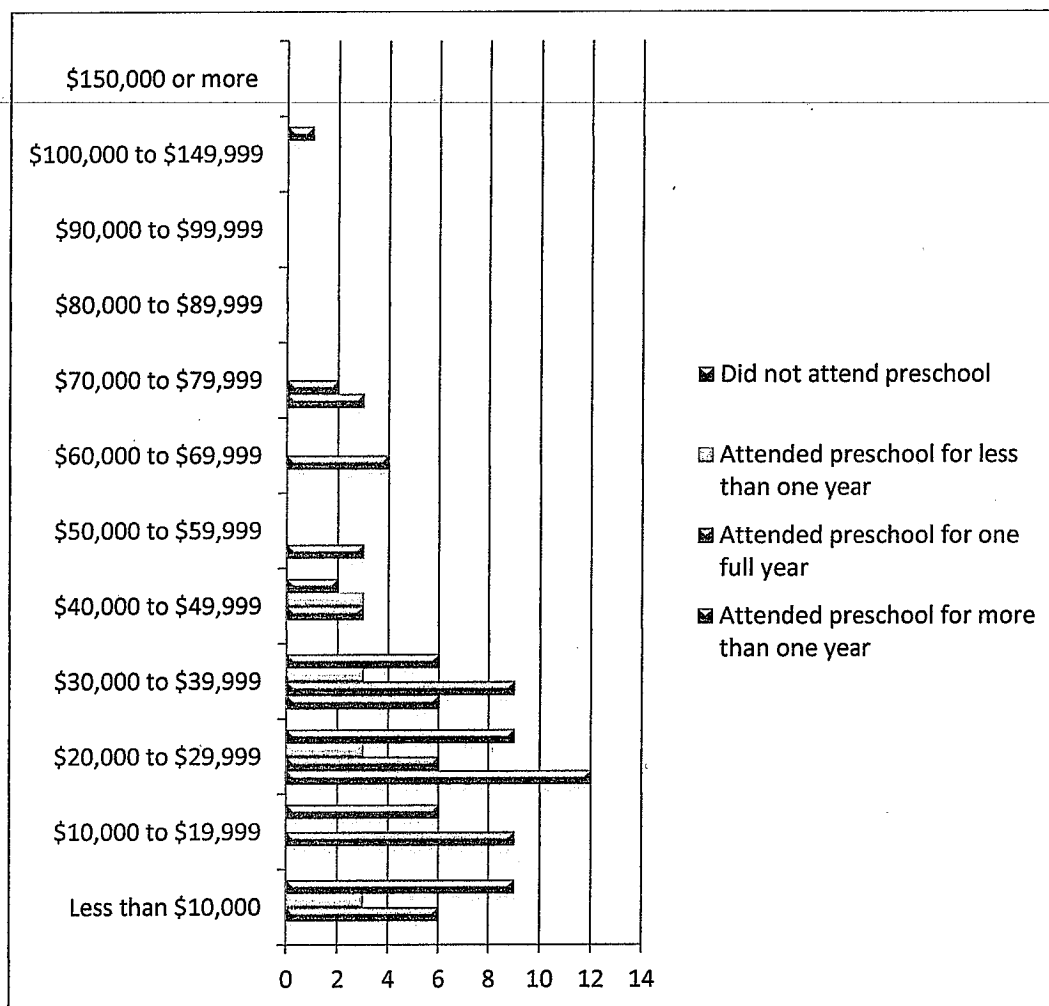


Figure 9 – Overall Preschool Attendance

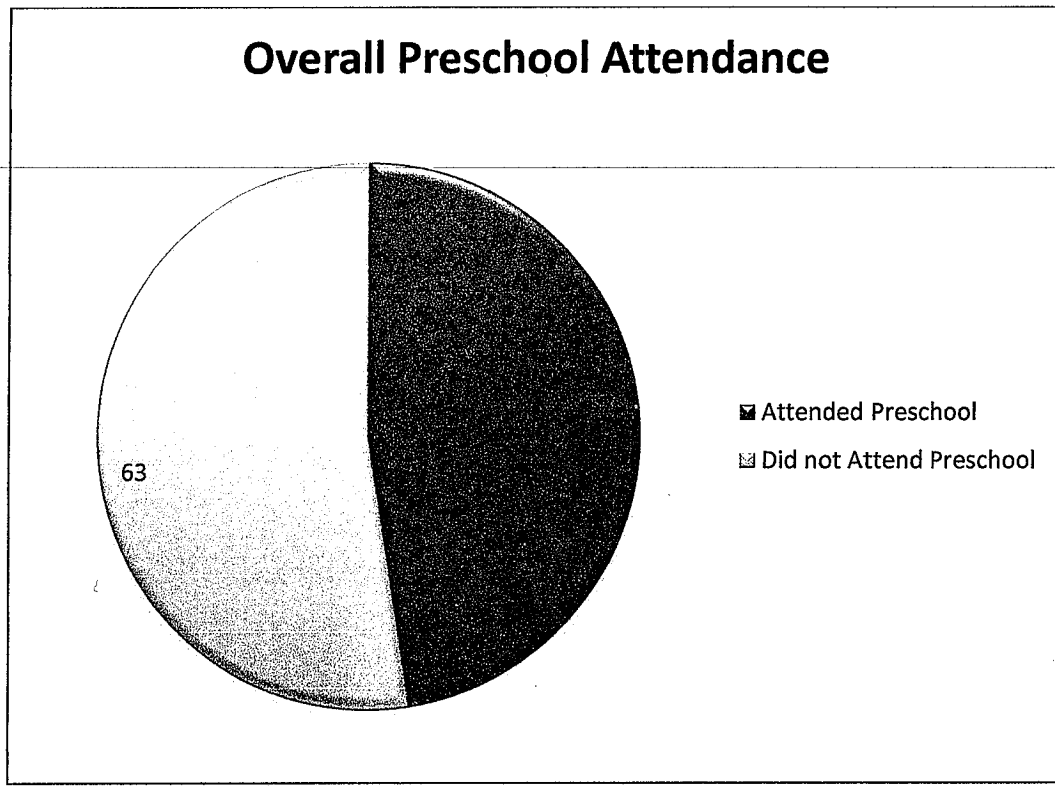
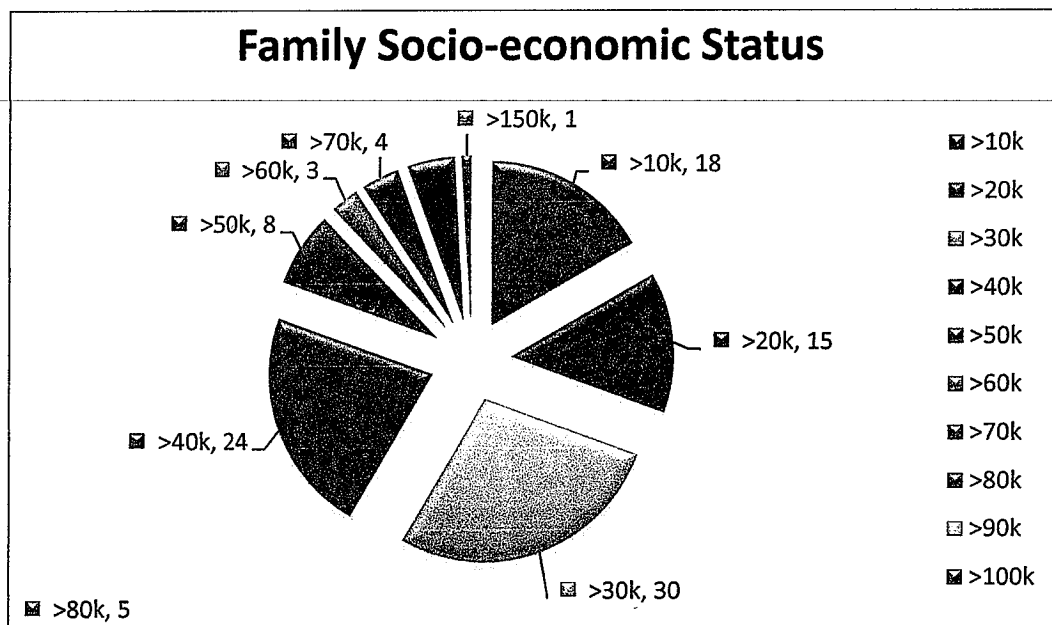


Figure 10 – Family Socio-economic Status



*estimated median household income in 2009: \$36,470 (retrieved from: <http://www.city-data.com>)

Discussion

The results of the study presented in the project are in close agreement with similar studies that have been completed in the past and have been researched herein. As an example, a study very similar to this study was Isaacs, referenced in Bartick's (2012) article. This study (mentioned in chapter 2, Literature Review) described preschool attendance as the most effective way to help students be successful in school. A chart from Issac's article comparing DIBELS scores shows a significant difference between students who attended

preschool and those who did not. The preschool attendees scored significantly higher than those who did not attend preschool. Issacs also compared the mother's education level (among various other variables as well) with kindergarten readiness, and found that of all the factors tested for, the single most impactful variable was if the mother's education level was a bachelor's degree or higher – for both poor and moderate-to-high income families. Those students whose mothers had higher education turned in their surveys sooner, as well as their students were some of the top performers in their class.

The entrance age for kindergarten did not yield much understanding, as the results were varied. Children who entered kindergarten young/average/older had no observable relationship between age and success. And as Gladwell (2009) suggests, it may very well be a case of one student being afforded more practice time than another.

Summary

By conducting the research, the author observed what appeared to be an association between the students' readiness for kindergarten and the student's mother's educational attainment. The research also revealed that socio-economic status may play a role in the students' readiness for kindergarten, although the effect was not found to be as easily measured compared to other factors, for

example, income may have been reported as upwards of \$70,000 annual household income, when the mother did not have an education level higher than a G.E.D. The researcher observed areas for future research such as there were other factors that may have possibly skewed the resulting readiness of their child, that individual mother may have been married to a high-earning spouse, and chose to be a stay-at-home mother. Pre-school attendance was observed to make the most obvious positive impact on a child's readiness for kindergarten (and thus the rest of their educational career), while the least obvious impact was determined to be the entrance age of the kindergartener. Concerning the many variables involved regarding kindergarten entrance age, it is difficult to know what may cause one younger/older child to be better prepared for kindergarten than another.

CHAPTER 5

Summary, Conclusions and Recommendations

Introduction

Kindergarten readiness: what makes the difference? If leaders in education are able to identify what makes the most impactful differences for students who enter kindergarten ready and prepared versus those who do not, measures may be taken to strengthen the community and education system to help produce more children who enter kindergarten ready for success.

Summary

This Project focused on evaluating the impact of the following four areas relative to children's kindergarten-readiness: (1) impact of the students' mothers' highest education level, (2) the socio-economic status of the family (based on the family's household income), (3) the entrance age of the kindergarteners, and (4) students' preschool attendance.

The mother's education level may be significant in helping their child be more kindergarten-ready, and most often if the education was at a bachelor's degree level or higher. There may be a relationship between the impact of a mothers education on her family's poverty status. Future studies may find that the

socioeconomic status of families may impact a students' kindergarten-ready success (i.e. the lower the income, the lower the preparedness on average). The author wonders if larger studies might find that if the mother obtained a bachelor's degree or higher, her children would be found to be able to perform as well as, if not better than, students who come from more affluent families.

The portion of the project discussing entrance age of the student points to the more practice the child has, the more prepared he/she is. The earlier the student has access to high quality early learning and growing experiences, the more educationally advanced the student will be. Moreover, the student who has attended at least one year of preschool may have an advantage over those students who did not gain access to a preschool program. The students who attend preschool may be more prepared for success in kindergarten – as well as their subsequent years in school.

Conclusions

Based on the findings of this project, the researcher has come to the understanding that a high-quality pre-school education plays a very important role in a child's readiness for Kindergarten and beyond. The author also recognizes that mothers who have higher education levels may have children who are better prepared for kindergarten entrance as well as having a higher level of success

throughout their educational career as compared to children whose mothers do not have higher education levels.

The author's research regarding entrance age lead to a confounding observation: children who may be deemed "too young" for kindergarten may be from homes of low socio-economic status. One such scenario could be that a family may not be able to afford babysitters and therefore may choose to enroll their child into kindergarten early, versus the other end of the spectrum, a scenario where a child who enters kindergarten at an older than average age may have been spending that extra year at home going to the zoo and the beach gaining vocabulary and valuable life experiences that help make him/her more ready for kindergarten. There are many variables involved when considering kindergarten entrance age—the author considered it difficult to make true observations of kindergarten readiness based solely on entrance age.

Some of the possible outcomes from living in a lower socio-economic household may affect a students' readiness for kindergarten. The lack of experiences (due to low socio-economic status) may lead to a less plentiful vocabulary, but may be overcome when a mothers' education level is a bachelor's degree or higher. Students of families who were at poverty level or below (whose mothers had no higher education) were found to be impacted concerning

kindergarten-readiness, as compared to those children of poverty whose mothers did have an education of at least a bachelor's degree.

Recommendations

Based on the small sample and this beginning action research project, it is recommended that further research is conducted, with a larger sample size to gather information that may be more informing and possibly generalizable. Based on the conclusions, the author recommends that the State-level education association may want to look further into the implementation of high-quality pre-school programs in all public schools. Further, school districts may want to look at providing classes for parents of the community to share what effective parenting strategies and experiences help to create a child who is ready for Kindergarten, as well as identify the signs that a child is ready to enter school (age, skills, vocabulary, etc.). Lastly, communities may want to consider publicizing and make more readily available means to attain higher educations for parents, realizing that besides improving their own life this also makes a remarkable positive impact on the success of their children throughout their educational careers. The benefits of this cannot be adequately quantified, improving communities, and each generation to follow.

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