

## ABSTRACT

Wendy Kelly Jordan, A STUDY OF THE EFFECT OF KINDERGARTEN ENTRANCE AGE ON THE REFERRAL AND PLACEMENT RATE INTO THE EXCEPTIONAL CHILDREN'S PROGRAM (Under the direction of Dr. James McDowelle). Department of Educational Leadership, November 2012.

This study examined relationships between specific data on students referred for and placed in the exceptional children's program. The context is a rural North Carolina county and included 206 records of K – 6<sup>th</sup> graders spanning academic years 2007-08, 08-09 and 09-10. The kindergarten entrance ages of students were divided into categories of on time, early and late entrants. Redshirted students were also included. Both Pearson Product Moment correlations and a logistic regression model of analysis were employed as these statistical measurements allowed the researcher to examine variables and their relationships that served to predict likelihood of outcomes related to placement. When referring students for testing, statistically significant relationships were determined between a student's race and age at referral ( $r = .152$ ), a student's race and his/her low socioeconomic status ( $r = -.226$ ), a student's age at kindergarten entry and the age at which he/she is referred for testing ( $r = .182$ ) and a student's age at kindergarten entry and number of retentions ( $r = -.162$ ). When determining placement into the exceptional children's program, statistically significant relationships were determined with gender ( $\beta = -.684$ ) and number of in grade retentions ( $\beta = .705$ ).

Practically significant findings, although not statistically significant, that may prove beneficial for practitioners, included the predictability between a student's race and the likelihood for placement ( $\beta = -.351$  for black students). Considering kindergarten entrance age, early entrants are predicted to be placed in the exceptional children's program at a much higher rate than other entrants ( $\beta = .993$ ).

A STUDY OF THE EFFECT OF KINDERGARTEN ENTRANCE AGE ON THE  
REFERRAL AND PLACEMENT RATE INTO THE  
EXCEPTIONAL CHILDREN'S PROGRAM

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## CHAPTER ONE: INTRODUCTION

The demand for teacher accountability to complement and increase student performance has grown since the launching of Sputnik over 50 years ago (Powell, 2007). More recently, the passage of *No Child Left Behind* (NCLB) in 2001 has raised the bar for teachers and students. Section 101 of the NCLB document asserts that it will increase the academic achievement of the disadvantaged. To practitioners, that means that all children must be at or above grade level by the year 2014 (U.S. Department of Education, 2001). The proficiency levels on both state administered reading and math tests have steadily increased over the past eight years with the expectation that all children, regardless of individual capabilities or circumstance, will be able to perform at grade level by 2014 (U.S. Department of Education, 2001).

While few would dispute the need for accountability for both teachers and students, the rigor of the curriculum has placed many demands and strains on both factions of the school population. There are fewer and fewer classrooms implementing developmentally appropriate practices in kindergarten classrooms across our state and nation (Bryant, Clifford, & Peisner, 1991; Crosser, 1998). Accountability has forced curriculum rigor down to the point where even the tiniest and youngest students are feeling the effects (Crosser, 1998; Frey, 2005; Graue, 2003; Graue & DiPerna, 2000; Marshall, 2003; May, Nundeft, & Brent, 1995; Meisels, 1992; Shepard & Smith, 1988; Weil, 2007). This means that skills previously taught in one grade are pushed down to the grade below it. For example, reading used to be a skill solely reserved for first grade. The expectation now is that children will leave kindergarten reading or beginning to read (North Carolina Public Schools, 2009c). In North Carolina, our third graders are the first group to be measured and assessed by both state and national standards; thus, they have to be ready for the rigor that the tests present (North Carolina Public Schools, 2009d). In order to prepare them

for that rigor, sacrifices must be made. Those sacrifices are being made in the kindergarten classrooms across our state and nation with direct instruction and regimented curriculum replacing self-exploration and discovery learning (Frey, 2005; Horowitz, Kaloi, & Petroff, 2007; March, 2005; Marshall, 2003; Shepard & Smith, 1988).

Prior to the passage of *No Child Left Behind* (2001), the days of early kindergarten were synonymous with play, exploration, honing social skills and learning through developmentally appropriate instructional methods (deCos, 1997; March, 2005). Accountability has transformed the face of kindergarten classrooms across the country. Fluid learning environments and individually tailored learning experiences have been replaced with rigid curriculums delivered to all with little thought given to individual differences or varied levels of readiness (Crosser, 1998; Frey, 2005; Graue, 2003; Graue & DiPerna, 2000; March, 2005; Marshall, 2003; Shepard & Smith, 1988).

Children enter kindergarten with varying levels of school readiness and different degrees of developmental preparedness to receive formal instruction (May & Kundert, 1997). When some children are unable to master the grade level curriculum, questions are raised and the referral process to the exceptional children's program, synonymous with special education, begins as a way to meet the child's educational needs (Elder & Lubotsky, 2009; May et al., 1995; Pugach, 1985). Sometimes, children that are young for their grade are referred for special education when the underlying issue may actually be social or cognitive immaturity (Elder & Lubotsky, 2009; Martin, Foels, Clanton, & Moon, 2004; Shepard & Smith, 1986; Uphoff & Gilmore, 1985). Other times, children that are over average age for their grade due to retention or from being intentionally held out of school for a year are referred for special education

services (Graue, 2003; Graue & DiPerna, 2000; May et al., 1995; National Association of Early Childhood Specialists in State Departments of Education, 2000).

### **Background and Statement of the Problem**

Children enter kindergarten at different points on the school readiness spectrum with varying experiences that enable them to access the curriculum they will be challenged to master. While many children are fully prepared for the rigor of our 21<sup>st</sup> century kindergarten classrooms, some of their peers are not.

In North Carolina the age of compulsory attendance and kindergarten entrance age are incongruent, meaning that the ages of students in a kindergarten classroom may have a span of up to twelve months (de Cos, 1997; May et al., 1995; Shepard & Smith, 1988; Weil, 2007). To illustrate this point, consider the deadline for enrolling a child in kindergarten in North Carolina being October 16 of each calendar year. Generally, the academic year begins in August, so an average classroom will have students who will not turn five years old on October 16 of the current year, while some may have turned 5 on October 17 of the previous year (see Table 1).

Additionally, classrooms may host developmental spans of children ranging up to twenty four months (Meisels, 1992). Age eligibility for school is not synonymous with school readiness (deCos, 1997; Horowitz, 2006; National Center for Education Statistics, 2000). Age eligibility refers to the age that children are legally eligible to attend public school. That age varies by individual states, as there is not a national standard (National Association of Early Childhood Specialists in State Departments of Education, 2000). Readiness denotes a child's capacity to benefit from formal schooling (Graue, 2003; May & Kundert, 1997). Some children enter school as soon as they are age eligible (Narahara, 1998; National Association of Early Childhood Specialists in State Departments of Education, 2000); however, some are held out an additional

Table 1

*Entrance Age Categories*

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On Time Entrants					Early Entrants				Late Entrants			
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct16	Oct17	Nov	Dec
5.7	5.6	5.5	5.4	5.3	5.2	5.1	4.10	4.11	5.0	5.10	5.9	5.8

year at their family's discretion despite the fact that they are age eligible for school (Crosser, 1998; Graue, 2003; Marshall, 2003; Meisels, 1992; National Association of Early Childhood Specialists in State Departments of Education, 2000; National Center for Education Statistics, 2000). This combination of early, on time and late entrants creates a stratification of kindergarten classrooms across North Carolina (Meisels, 1992).

The fact some children enter kindergarten as soon as they are age eligible, despite their degree of readiness, can be difficult for the students, their peers and their teachers. They are oftentimes unable to meet the curricular demands placed upon them by state and federal standards (Bryant et al., 1991; Crosser, 1998). Consequently, instruction continues with little or no consideration as to their place in this brand new world. Some student's inability to keep up with their peers and teacher may draw attention to them and cause concern. While teachers may contend that many factors are considered when evaluating academic success, a dominant factor in determining a successful kindergarten year is chronological age (deCos, 1997; North Carolina General Assembly, 2009a).

### **Purpose of the Study**

This study examined three cohorts of children entering kindergarten in a rural county of the North Carolina Sandhills. The study looked at the stratification in kindergarten classrooms as defined by the chronological age of the students and the likelihood for resulting placements in special education. Researchers have long contended that the youngest children in any classroom experience difficulty with socialization, readiness skills and mastering the curriculum (Bryant et al., 1991; Gay, 2002; May et al., 1995; National Association of Early Childhood Specialists in State Departments of Education, 2000; Shepard & Smith, 1988). Consequently, children as young as five years old are being referred for testing and placement in the exceptional children's

program. The purpose of this study was to examine any relationships between pre-determined variables and a student's likelihood for referral for the exceptional children's program. Additionally, the researcher sought to examine a student's likelihood for placement into the exceptional children's program. While many criteria were examined, the student's age at kindergarten entrance was of special interest. The findings of this study provide practicing school administrators with data that enables them to employ more effective and informed leadership skills during the referral process for possible placement into the exceptional children's program.

### **Significance of the Study**

By analyzing existing relationships between kindergarten entrance age, referral and possible placement into the exceptional children's program, the study will add to the literature on special education referral and placement, and also address a significant problem of practice extant in the special education referral and placement process. Additionally, the study of this problem of practice will allow school leaders to exercise more effective leadership in the school referral process. If children begin school equipped with the skill set necessary for success, the likelihood of school failure may be diminished.

Educators must consider multiple selection criteria for exceptional children's program referral and placement. The findings yielded from this study may influence practitioners to examine kindergarten entrance age more thoroughly when a child is considered for the referral process and utilize kindergarten entrance age as a significant factor in at-risk student identification. Furthermore, to identify and analyze the reasons why a child may be underperforming in the classroom before an initial referral for testing will enhance the opportunity for a quality education for all children (Elder & Lubotsky, 2009; Gadeyne, Onghena,

& Ghesquiere, 2008; Horowitz et al., 2007; May et al., 1995; Pugach, 1985). Multiple criteria must be scrutinized prior to a referral and should include the age at which children started school, their individual level of school readiness and currently employed classroom instructional strategies. The triangulation of these data may give a more accurate picture of the need for the specialized and expensive services offered by the exceptional children's program. In illuminating a significant factor in the referral of students for special education services, the study adds to the literature on special education referral and placement and addresses a serious problem of practice extant in the special education referral process.

### **Limitations**

This study is limited in scope and its findings may not be generalized to all populations of children. The conclusions drawn from this study are not able to be generalized due to the fact that the study considers only three cohorts of kindergarten entrants from one county in North Carolina. The district is unified; hence, there can be no comparison within the county boundaries. A more in depth discussion of limitations can be found in Chapter 3: Methodology.

### **Research Questions**

The overarching question is: Is there is a correlation between a child's date of birth, the age at which s/he started kindergarten, and his/her likelihood for referral to and placement, or not, in the exceptional children's program. The data to be examined include academic years 2007-08, 2008-09 and 2009-10. Additionally, the phenomenon of *redshirting* will be explored to the extent possible. Redshirting is the practice of withholding a child from school for one year to allow for cognitive, social, behavioral and physical growth for an additional year (Horowitz, 2006; March, 2005; Marshall, 2003). A comprehensive list of research questions are further detailed in Chapter 3: Methodology.



## Definition of Terms

*Developmentally Appropriate:* The developmental preparedness for formal instruction (May & Kundert, 1997).

*Early Entrant:* Those children who begin school with a birthday between June 1 and October 16 of the given calendar year.

*Gift of Time:* Allowing children an additional year to mature in grade or prior to school entry.

*Kindergarten Entrance Age:* The legal age children may enroll in public school; Synonymous with age eligibility.

*Late Entrant:* Those children who begin school with a birthday between October 17 and December 31 of the previous calendar year.

*Minority:* Those children who are not Caucasian. In other words, minority children are those who are African American, Native American, Pacific Islander, Multiracial, Hispanic, or Other.

*Non-minority:* Those children who are white/Caucasian.

*On Time Entrant:* Those children who begin school with a birthday between January 1 and May 31 of the given calendar year.

*Redshirting:* The practice of holding children out of school despite the fact that they are age eligible to begin kindergarten (Horowitz, 2006; March, 2005; Marshall, 2003).

*Retention:* Having a child repeat a grade due to non-mastery of academic material.

*School Readiness:* Age range when most children are deemed old enough to benefit from formal school experiences (Graue, 2003) and the skill level, behaviors or attributes of children in relation to the expectations of school (Ackerman & Barnett, 2005).

## CHAPTER TWO: REVIEW OF LITERATURE

### History of Kindergarten

Kindergarten literally means children's garden in the German language (deCos, 1997). Freidrich Froebel established the first kindergarten nearly two centuries ago in Germany in 1837 (deCos, 1997). The German word *kleinkinderbeschäftigungsanstalt*, later shortened to *kindergarten*, was coined by Froebel who believed that education should foster the natural development of children (Murray, 1974). Froebel often used the metaphor of a garden when describing a kindergarten classroom in that a garden denotes beauty, growth and the cycle of life repeating itself over and over (deCos, 1997). The roots of American kindergarten were established in 1856 by Margaret Schurz, who established the first kindergarten in her home located in Watertown, Wisconsin (deCos, 1997). She met Elizabeth Peabody in Boston, New York and shared with her the news of kindergarten. Ms. Peabody went on to establish the first English speaking kindergarten in 1860, and traveled across the country to share the need for and benefits of kindergarten with all that would listen (deCos, 1997; Vanderwalker, 1971). In 1873, Ms. Peabody convinced the superintendent of the St. Louis public schools to establish the first public kindergartens (deCos, 1997).

Kindergarten schools spread and were embraced by entities beyond private and public settings to include churches, factories and trade unions (deCos, 1997). As kindergarten took hold and then began to spread in the later nineteenth and twentieth centuries, it began to change from the original premise of play fostering natural skill development (March, 2005).

Kindergarten became the place to *Americanize* many of the immigrant children coming to America (deCos, 1997). As kindergarten classes began to grow in public schools and join with primary and elementary schools, it underwent a transition from a separate setting designed to

play and manipulate, explore and understand the world to a place where children were socialized in preparation for the rigor of the primary grades (deCos, 1997).

In reaction to the launch of Sputnik in 1957, the pressure on American schools was felt all the way to its youngest students—kindergarteners. The launching of Sputnik, the country's focus on national security, the war on poverty and significant social events such as the Civil Rights Movement, changed the face of kindergarten. Kindergarten was now viewed as a way to jump start education. deCos (1997) closes her discussion on the origin of kindergarten by indicating that since the 1960s, kindergarten classrooms moved more toward an academic focus rather than a social one.

The first public kindergartens in North Carolina were established in Asheville (Murray, 1974). In 1889, the Asheville Free Kindergarten Association established and maintained three kindergartens; however, they desired to turn them over to the public school's jurisdiction. The Association was experiencing financial difficulties, and as a result, turned over control of the kindergartens along with the land, buildings and supplies to support the kindergarten classrooms to the city of Asheville. The North Carolina General Assembly authorized the city of Asheville to take control of the classrooms in 1907. Years later in 1920, a resolution was passed by the North Carolina Congress endorsing the establishment of kindergarten in public schools as soon as possible. While the steady interest in kindergarten was maintained, no state-wide kindergarten had been established by 1940. The efforts to publicize and promote public school kindergarten continued from 1940 through the late 1960s. Still feeling the ripple effects of Sputnik and the beginning of accountability, public school kindergarten in North Carolina was recommended by the Governor's Study Commission in 1968. The following year, eight kindergartens were opened followed by the ten more in 1970.

In 1970, 10.5% of five year olds in North Carolina were enrolled in public kindergartens (Murray, 1974). Today, kindergarten children account for 7% of the total enrollment in North Carolina Public Schools (North Carolina Public Schools, 2009a).

## **School Attendance Policy**

### **Policy Overview**

Most states do not require children to attend kindergarten, and eight states (Alaska, Colorado, Idaho, New Hampshire, New Jersey, New York, North Dakota and Pennsylvania) do not even require districts to offer kindergarten (Kauerz, 2005). Only 14 states require children who are age eligible to attend a half day kindergarten program (Kauerz, 2005). There are nine states, including North Carolina, that require the districts to offer a full day kindergarten program and two states that require full day participation in kindergarten (Kauerz, 2005; Sadowski, 2006). Sadowski's (2006) research notes that 60% of kindergarten programs today are full time, and Graue (2003) punctuates this statistic with the fact that 98% of first graders have attended kindergarten. North Carolina requires that districts offer kindergarten; but, children are not required to attend (North Carolina Public Schools, 2009a). However, once children enroll in public school kindergarten they are bound to attend school by compulsory attendance laws (North Carolina General Assembly, 2009b). Compulsory attendance is the age range in which, by law, children must attend public school (North Carolina General Assembly, 2009b). According to North Carolina General Statute (GS) 115C-378, children between the ages of seven and sixteen must attend public school once they are presented for enrollment (North Carolina General Assembly, 2009b). While state statutes are consistent in allowing children to begin formal schooling at the age of five, the varying policies across states and the nation create a disconnect for families and children (Ackerman & Barnett, 2005). For example, one state may

allow children to begin kindergarten in August of the year they turn five years old while a neighboring state may not allow the children to enroll until October of that same year. If families move from one state to another, their children may not be allowed to continue their kindergarten year due to varying state policies. Additionally, this age difference presents early schooling opportunities to some while others are not beneficiaries of the same opportunity. A more universal approach to kindergarten participation and eligibility may aid in issues of opportunity and, subsequently, equity among all. Referencing North Carolina particularly, Rep. Dale Folwell (personal communication, September 28, 2007) indicated that dramatic changes in expectations at kindergarten entry and throughout the year have resulted in “well-intentioned interventions that are inequitable, ineffective and wasteful of public resources.”

The entrance age for kindergarten varies by state as well. In the 1950s, many states had a cutoff date for beginning public school for children with birthdates between December 1 and January 1 (Graue, 2003; Shepard & Smith, 1988). Five states still adhere to that time frame: California, Connecticut, Hawaii, Michigan and Vermont (Kauerz, 2005). Currently, thirty-five of our states have cut off dates for those born between August 31 and October 16 (deCos, 1997; Kauerz, 2005), while three states (Alaska, Indiana and Missouri) have a cutoff date of August 15 (Kauerz, 2005). Colorado, Massachusetts, New Hampshire, New Jersey, New York and Pennsylvania do not determine kindergarten entrance cut off dates, but leave that to the individual district’s discretion (Kauerz, 2005). It is clearly evident that the date for kindergarten entrance across our nation has changed over the past several decades. Datar (2006) notes that 1/3 of all school districts raised their kindergarten entrance age between 1974 and 1997. Ackerman and Barnett (2005) indicate that cut off dates that correspond with the beginning of the academic year are a recent trend in the United States.

The changes to the kindergarten entrance age are correlated with the academic demands associated with accountability in districts nationwide (Datar, 2006; National Association of Early Childhood Specialists in State Departments of Education, 2000). Most states have raised the entrance age due to accountability and the hope that older students will test better (deCos, 1997, March, 2005, National Association of Early Childhood Specialists in State Departments of Education, 2000). As educational curriculums evolve and intensify, so does the need to have children better equipped to handle testing rigor and school life, in general. However, researchers contend that raising the age of kindergarten entrance will not resolve the problem of school readiness, as there will always be a group of young children with varying degrees of readiness in every classroom (Bryant et al., 1991; National Center for Education Statistics, 2000; Shepard & Smith, 1986; Shepard & Smith, 1988). Moreover, researchers assert that raising the kindergarten entrance age does not solve the relative problem of youngness (deCos, 1997; Shepard & Smith, 1986) because there will always be a younger group and older group of children in a classroom. deCos (1997) goes on to say that chronological age is an objective measure that states use to determine kindergarten eligibility. Children who are chronologically young are simply disadvantaged when compared to their older peers (Ackerman & Barnett, 2005).

Raising the age for kindergarten entry may actually contribute to widening the achievement gap as some of those children that will become ineligible for school entry live in impoverished homes where an additional year of preschool is not an option for families that are already financially disadvantaged (Datar, 2006; Meisels, 1992; Shepard & Smith, 1988). Shepard and Smith (1988) assert that raising the kindergarten entrance age is bad policy, in general, because it delays access to public education. Delaying access to education for those that need it also ensures that the level of readiness between varying groups of children will be

accentuated (National Center for Education Statistics, 2000). Furthermore, the delay to public education can be detrimental to children that are poor and minority, which are factors that place them in the at-risk category before entering school (Datar, 2006; Shepard & Smith, 1988). Contrary to being a detriment to children, raising the entrance age can benefit districts as an increased entrance age means increased test scores without any additional investments or changes to the existing educational program (Datar, 2006). Simply put, older children test better.

### **North Carolina Kindergarten Entrance Age**

Public kindergarten opportunities in North Carolina began in the early 1970s (Murray, 1974). Murray (1974) indicates that kindergarten classrooms in public schools began to grow in the mid to late 1970s, and this researcher was in one of the early kindergarten classrooms in a rural, textile community located in the Sandhills of North Carolina.

The North Carolina General Statute governing kindergarten entrance age is 115C-364, and was established in 1955 (North Carolina General Assembly, 2009a). Since the inception of public kindergartens in North Carolina, the date for kindergarten entrance had not changed, although entrance age has been a hot educational topic for many years, (North Carolina General Assembly, 2009a). In 2006, Representative Dale Folwell (R) from Forsyth County, North Carolina introduced legislation to have the minimum age for kindergarten entrance amended from turning five years old on or before October 16 of the academic year to August 31 beginning with the 2009-10 school year. House Bill 150: *Every Child Ready to Learn* was enacted into law on July 4, 2007 (North Carolina General Assembly, 2009c). The bill reads: “A bill to be entitled ‘An Act for Modifying the School Admission Requirements to Ensure That Every Child is Ready to Enter Kindergarten and Thereby Reduce Student Dropout Rates in Later Grades’” (North Carolina General Assembly, HB 105, 2006). The rewritten law is stated below:

**SECTION 1.** G.S. 115C-364 reads as rewritten:

**"§ 115C-364. Admission requirements.**

(a) A child who is presented for enrollment at any time during the first 120 days of a school year is entitled to initial entry into the public schools if:

(1) The child reaches or reached the age of 5 on or before ~~October~~

~~16~~August 31 of that school year; or

(2) The child did not reach the age of 5 on or before ~~October 16~~August 31 of that school year, but has been attending school during that school year in another state in accordance with the laws or rules of that state before the child moved to and became a resident of North Carolina (North Carolina Legislature, 2009).

This legislation was met with much support and fanfare from educators and business leaders statewide including the North Carolina Association of Educators (NCAE), the North Carolina School Boards Association (NCSBA), North Carolina Association of School Administrators (NCASA), the Executive Director of the North Carolina PTA and Education: Everybody's Business Coalition (D. Folwell, personal communication, September 28, 2007).

In a telephone interview, Rep. Dale Folwell stated that the entrance age date change actually originated far beyond the scope of four kindergarten walls. He indicated that the issues that raised the kindergarten entrance age to the forefront of discussion were teacher retention and the high school dropout rate, both of which have little to do with 4 or 5 year old children. Rep. Folwell elaborated in saying that teachers were having experiences in classrooms that were not conducive to remaining in education, thus contributing to our teacher attrition rate and teacher shortage in North Carolina. Also, our high school students taking the Scholastic Aptitude Test (SAT) were at a disadvantage due to their youngness (D. Folwell, personal communication, September 28, 2007). The premise of raising the kindergarten entrance age is that it prohibits approximately one fourth of children from enrolling in kindergarten; hence, the kindergarten classroom is more homogenously grouped in relation to ability by eliminating the youngest children (Datar, 2006; deCos, 1997; March, 2005; Shepard & Smith, 1986; Shepard & Smith, 1988).



Research suggests, however, that the theory of raising the entrance age of kindergarten is flawed because it does not solve the problem it is intended to solve (Shepard & Smith, 1988). There will always be a twelve month age span in any kindergarten classroom, and raising the entrance age simply creates a new group of young children (Bryant et al., 1991; deCos, 1997; Shepard & Smith, 1986; Shepard & Smith, 1988).

An additional observation made by Rep. Folwell was the existing policy of beginning kindergarten on or before October 16 was decreasing the investment in our state supported More at Four Programs and Head Start (D. Folwell, personal communication, September 28, 2007). Consequently, the entrance age for More at Four changed from turning 4 years old on or before October 16 to August 31 with the 2008-09 school year, one year ahead of public kindergartens as to create a seamless transition from one experience to the next. A closing quote to the phone interview was that the current system of kindergarten entry is “rewarding the overinformed to the detriment of the underinformed” (D. Folwell, personal communication, September 28, 2007). Intentionally holding children out of school when they are age eligible further separates the advantaged from the disadvantaged; thus, creating more inequity in public school (March, 2005).

### **Impact of Entrance Age on Classroom Composition & Instruction**

While there will always be a group of younger children in the kindergarten classrooms of America (Bryant et al., 1991; deCos, 1997; Shepard & Smith, 1986), the stratification is widened when the kindergarten entrance age is months away from the beginning of the school year. For example, in California where the kindergarten entrance age is 5 on or before December 1, but the beginning of the school year is in September, there will be a group of children 57 months old for 3 months before reaching the entrance age. Conversely, a child who turned 5 on January 1 of the previous year will now be 71 months old when the entrance age date arrives. That’s a

chronological age span of 16 months, and the likelihood of the developmental span being equal to or greater than that is high (deCos, 1997; Meisels, 1992).

### **School Readiness**

Chronological age is the objective measure by which school systems determine school eligibility (deCos, 1997). However, just because a child is age eligible for kindergarten does not necessarily mean that he is developmentally ready for the rigors of formal instruction (Uphoff & Gilmore, 1985). A universal definition of school readiness is non-existent (Horowitz et al., 2007). Readiness denotes the age range when most children are deemed old enough to benefit from formal school experiences (Graue, 2003). Additionally, readiness assesses a child's skills, behaviors and attributes in relation to the expectations established by individual classrooms or schools (Ackerman & Barnett, 2005). Teachers judge school readiness upon registration for public school through screening instruments. There is no consensus about specific screenings or instruments, and there is broad variability in practice across the nation (Costenbader, Rohrer, & DiFonzo, 2000; Horowitz et al., 2007). A study by Costenbader, Rohrer and DiFonzo (2000) revealed the most commonly utilized tools for kindergarten screening are (a) DIAL-R, (b) Brigance K & 1 screen, (c) Gesell School Readiness Test, and (d) locally developed assessments with components of human drawings, (e) Peabody Picture Vocabulary Test-Revised and (f) Developmental Test of Visual Motor Integration. Their research notes that the Brigance Test provides no data on reliability or validity in the administrator's manual; hence, the scores should be used for information only. It would be unfair to the student to base educational decisions on an instrument with no accompanying psychometric data.

While the use of screening tools can provide a starting point for educators, they cannot tell the whole preschool story of cognitive development. A survey of kindergarten teachers

indicated the belief that over 35% of all children are not adequately prepared for school (Gay, 2002). A similar survey by the National Center for Education Statistics (1993), reported findings about teachers' varying views on readiness and their relationship to school (see Table 2).

The survey results seem somewhat contradictory in that a high percentage of teachers, 94%, agree that they were able to enhance readiness through experiences in skill building; however, 55% of these same teachers would suggest holding children out of school, even though they were age eligible, if their level of readiness seemed questionable (National Center of Education Statistics, 1993). The screening instrument results were sometimes used to encourage parents to hold their age eligible children out of kindergarten for an additional year (Ackerman & Barnett, 2005). There also appears to be a philosophical divide among the teachers surveyed in that over half of the teachers surveyed, 56%, believe that children should begin school when age eligible; however, an additional 55% admit that they would suggest delayed enrollment if readiness issues were apparent (National Center for Education Statistics, 1993). While schools cannot legally deny age eligible children enrollment in public school, they can counsel families on the benefits of holding them out an additional year (Graue, 2003). Research completed by Shepard and Smith (1988) noted that teachers are caused more trouble by those students that are not yet ready for the rigors of formal schooling. Beyond a philosophical divide, there also appears to be a cultural and/or racial divide in views on school readiness and entrance. Those that teach in impoverished schools with high enrollments of minority children believe that children with readiness issues need to begin school as soon as they are age eligible so that they may benefit from the school experience (National Center for Education Statistics, 1993).

Table 2

*Teacher Survey*

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<u>Survey View</u>	<u>Percentage in Agreement</u>
Readiness comes as children grow, and it can't be pushed	88% of teachers agree
Teachers can enhance a child's school readiness through experiences in skill building	94% of teachers agree
Children with readiness problems should begin school as soon as they are age eligible	56% of teachers agree
If a child appears unready to begin school, they would suggest waiting for a year for enrollment	55% of teachers agree
<u>Attending preschool is very important to kindergarten success</u>	<u>53% of teachers agree</u>

Specifically, 76% of teachers surveyed that were black, non-Hispanic advocated for beginning school when age eligible compared to only 54% of their white, non-Hispanic colleagues holding this view (National Center for Education Statistics, 1993).

School readiness and socioeconomic status share an invisible, but apparent, relationship considering that the socioeconomic status of the home is one of the strongest predictors of school success at school entry (Sadowski, 2006). With nearly half of all children under the age of five claiming a racial or ethnic minority status (Sadowski, 2006), ensuring readiness upon school entry to minimize pre-existing risk factors is essential. Lee and Burham's study (as cited in Sadowski, 2006) found that the cognitive scores upon kindergarten entry were 60% higher for children in the highest socioeconomic group than the lowest. This gap can be attributed, in part, to the fact that 78% of three and four year old children from households with an annual income exceeding \$100,000 attend a preschool program prior to formal school entrance compared to only 50% of children living in households making less than \$50,000 per year (Sadowski, 2006). The power of preschool to assist in lessening the achievement gap is evident in a study by Magnuson, Waldfogel and Ruhm (as cited in Sadowski, 2006). These researchers found that participation in a Pre-K program is associated with increased reading and math scores upon school entry. A report by the Carnegie Corporation Task Force on Learning in the Primary Grades (as cited in May & Kundert, 1997) actually recommended that all children need access to two years of high quality preschool to ensure school success. Other researchers concur that preschool experiences have a positive effect on kindergarten performance (Frey, 2005; Gay, 2002; May et al., 1995). Most interesting is the fact that the academic benefits gained in preschool appear to be longest lasting for the students in the lower socioeconomic groups, who also happen to be black, immigrants or Hispanic (Sadowski, 2006).

Not only does socioeconomic status serve as a strong indicator of school success, but chronological age appears equally important to school success (Sadowski, 2006). Researchers deCos (1997) and Shepard and Smith (1986) have spent many years studying the age effect upon school entry, and conclude repeatedly that the younger children in a grade are generally less successful than their older classmates. This lack of success may actually be a combination of chronological age and low ability (Shepard & Smith, 1986).

One might wonder what can be done to counteract lack of school readiness. In order to counteract the problem, it must first be placed into perspective. Lack of readiness, as mentioned above, often coincides with being at-risk (May & Kundert, 1997; Sadowski, 2006). While the term at-risk is used freely in education today, the actual definition is interpreted and applied differently among settings. May and Kundert (1997) discuss the term at-risk as being defined according to demographics or familial characteristics that put them at-risk. The factors include poverty, racial or ethnic minority status, an overall low socioeconomic status, limited parental education or living in single parent households (May & Kundert, 1997). While these characteristics are certainly measurable, the causal relationship between the risk factors described and at-risk status in a school setting is sometimes difficult to establish according the work of May and Kundert (1997). May and Kundert (1997) describe in their work a mutual relationship between home and school where the influences of both impact the success of each other. For example, a child's circumstance combined with how well or how poorly a child interacts with his school environment will certainly impact his level of school success (May & Kundert, 1997). A student's readiness for the rigors of formal schooling is synonymous with the level and degree of academic success in kindergarten.

## **Learning Theories**

There are many learning theories associated with kindergarten education. The maturationist or nativist believes that human behavior develops in a very patterned and predictable way. They assert that we cannot force children to be ready for school. Readiness will come naturally and in its' own time (deCos, 1997; Smith & Shepard, 1988). Arnold Gesell is often associated with the maturationist viewpoint that behavior develops in a very predictable and prescribed manner that cannot be rushed along by experiences. The maturationist views children's readiness as an evolving and unfolding process that can be enhanced, but not forced, into development with a stimulating educational environment (deCos, 1997). Additionally, the gift of time is the only thing that can help children that have readiness issues with formal education (deCos, 1997; Smith & Shepard, 1988).

The behaviorist believes that learning does not just happen, but children assimilate new experiences into their existing experiences thus making sense of the world around them. They are to be rewarded for doing things the correct way and responding appropriately in given situations (deCos, 1997). B. F. Skinner contributed much to behaviorist learning theory research. His impact on modern education is observable today with the practice of rewarding desirable behavior and withdrawal of that same reward for undesirable behavior. Skinner did not believe that punishment for inappropriate behaviors would cause those behaviors to cease or modify permanently. Punishment of inappropriate behaviors yielded only temporary results with no real modification toward more desirable behaviors (Bare, 1967). Skinner's belief that all individuals respond differently to reinforcement is apparent in 21<sup>st</sup> century classrooms as teachers (a) consistently differentiate instruction, (b) create individual behavior plans for children and (c) plan and re-plan classroom management systems to find what works best for students (Skinner,

1953). A behaviorist ascribes to the notion that knowledge is external to children, and they must put together bits and pieces of learning to create a whole (deCos, 1997). The process of learning is reinforced with rewards for correct responses and actions (deCos, 1997; May & Kundert, 1997).

A variation of the behaviorist point of view is the environmentalist. The belief here is that knowledge in the external world, and kindergarten, for example, is the place where new skills, opportunities and experiences are cultivated in children. Teachers should, according to this theory, diagnose, assess and then teach children (deCos, 1997).

One of the most famous educational theorists, Jean Piaget, had a very rigid belief about child development that seemingly marries both the maturationist and the behaviorist view. Piaget believed that children developed in a prescribed manner that coincided with chronological age. Piaget's stages of development are (a) sensory motor, (b) pre-operational, (c) concretely operational and (d) formally operational. A child's ability to genuinely learn new tasks depended upon his stage of development (Burkhalter, 1994). Additionally, Piaget believed that children could assimilate new learning into their existing schema; however, they had to be nearing the appropriate time of readiness in order to do so (Burkhalter, 1994; McGuire & Roland, 1966).

An interactionist, or constructivist, believes that knowledge exists in children and in the external world. As children grow and develop, they adapt and learn from the world around them. In accordance with this view, educators should provide rich and stimulating environments that motivate children to learn and question the world around them (deCos, 1997; Smith & Shepard, 1988). Another pioneer in child development, Lev Vygotsky, is known for his contribution to interactionist theory. Vygotsky emphasized that children have the capacity to learn if those in



the teaching role create optimal circumstances for learning to occur. Vygotsky theorized that children have a space to learn new things on their own and another space to learn new things with the support of an adult or peers. The distance between those spaces is called the zone of proximal development. Given the right conditions and the right support, children are capable of learning more than perhaps their chronological age would indicate (Burkhalter, 1994).

Maria Montessori's theory of learning is viewed by some as an amalgamation of other theories. An empiricist believes that children learn best through factual learning. This learning is by rote and teacher directed. As mentioned earlier, a nativist believes that learning develops in a prescribed manner. Children are born with pre-existing knowledge that has to be developed before use. A loose combination of the two resulted in constructivist theory. Children do have innate knowledge; however, experiences and opportunities help to expand and refine that knowledge. Components of all of these are associated with Montessori's theory of making the child the center of learning in all situations (Elkind, 2003). Montessori believed that all children were learners with a natural curiosity and desire to learn; however, the acquisition of new learning was sometimes held back or redirected by the teacher. Addressing the whole child and his needs are imperative according to Dr. Montessori (Montessori, 1949).

Social cognitive theory or observational learning is credited to Dr. Albert Bandura. Bandura posited that children learn from observation. Activities don't have to be reinforced through reward or punishment for learning to occur, but it does if children are attentive to the activity occurring. Bandura's research with the BoBo doll demonstrates observational learning. Bandura found that aggressive behavior didn't have to be reinforced for children to emulate it simply observed. Aggressive behavior could occur if children simply observed aggressive behavior (Bandura, Ross, & Ross, 1961).

Children's readiness for participation in the formal school experience is interpreted in different ways by different theorists. A survey by the National Center for Education Statistics (1993) indicated that 88% of teachers believe that a child's readiness comes as children grow, and that it can't be forced. This line of thinking coincides with the maturationist view of development as being the innate time clock that chimes when it's ready, but not before maturation (deCos, 1997; Marshall, 2003; May & Kundert, 1997). Most teachers can be categorized as maturationists or nativists (Smith & Shepard, 1988).

The goal of the school setting is to assess and identify the learning deficiencies of children, and then provide prescriptive instruction that will help fill those learning gaps (deCos, 1997). Intervention and remediation are key instructional strategies for those that ascribe to this theory of the learning process (deCos, 1997). Remediationists and diagnostic prescriptive teachers are committed to additional and specific instruction to minimize learning deficits (Smith & Shepard, 1988). Regardless of what a teacher's belief about learning is, her/his expectations for the performance of children directly impact student learning (Shepard & Smith, 1986).

### **Early Kindergarten**

Kindergarten was originally designed to be a place of play and exploration focused primarily on the arts, not academia (deCos, 1997). Kindergarten classrooms in America were influenced by the learning theories and research of great education and psychological experts including Sigmund Freud, John Dewey, Stanley Hall and Edward Lee Thorndike along with Maria Montessori (deCos, 1997). Their contributions to the literature impacted the curriculum of kindergarten and the practices therein.

However, the social changes that were surfacing in the 1960s began to spill over into classrooms across the nation, including kindergarten (deCos, 1997). Kindergarten was no longer

the place for play and socialization (Bryant et al., 1991; March, 2005; Shepard & Smith, 1988). With the introduction of Sesame Street to televisions across the country, children were beginning their formal school careers with more background knowledge than in the past (Moses, 2009; Shepard & Smith, 1988; Wright, Huston, Scantlin, & Kotler, 2001; Zill, 2001). Quite suddenly, kindergarten became the place to exercise the benefits of experiences and opportunities rather than a place to have them.

### **Impact of Accountability**

The American education system has felt the pressure of accountability since the publication of *A Nation at Risk*. The report stated that our education system was not capable of producing the globally educated students that other nations were producing, and was in need of revamping (United States Department of Education, 1983). Several years later at the 1989 Education Summit, early childhood school readiness was identified as a key national priority (Meisels, 1992). Three years after that the National Education Goals Panel (1992) declares the first national goal is that by the year 2000, all children in America will start school ready to learn. The term ready to learn emphasizes five dimensions related to development (Marshall, 2003). In order for children to be successful in the formal school setting, the following dimensions of development must be nurtured: (a) physical well-being and motor [gross and fine] development; (b) social and emotional development; (c) approaches to learning; (d) language and language use; and (e) cognition and general knowledge (Marshall, 2003).

The most recent piece of legislation affecting students, even kindergarten students, is the 670 page document PL 107-110 (US Department of Education, 2001). It reads, “An act to close the achievement gap with accountability, flexibility and choice so that no child is left behind” (U.S. Department of Education, 2001, p. 1). We commonly refer to the act as the *No Child Left*

*Behind* Act of 2001. Most notably, the act decrees that all students, regardless of handicapping condition, race, creed, sex or national origin, will be on grade level by 2014 (U.S. Department of Education, 2001). In order for children to work on grade level, they have to be assessed.

Meisels (1992) notes that standardized testing is more prevalent in our society today than in any other time in history. According to the Educational Testing Service, or ETS, about nine days per year are spent on district and state testing, or 5% of the school year (Educational Testing Service, 2009).

Consequently, kindergarten has felt the impact of the accountability culture intended for upper and tested grade levels (Shepard & Smith, 1988). Policy makers began to see that older children entering school resulted in increased test scores when no other variable changed or educational investments were added (Datar, 2006); hence, the school entrance age began to increase across the country. Datar (2006) noted that 1/3 of all districts nationwide increased their kindergarten entrance age by three or four months between the years of 1974 and 1997.

Increased entrance ages across the country resulted in older children entering school. This caused a ripple effect of the kindergarten curriculum increasing in complexity over time to meet the needs of the older children now entering school (Crosser, 1998; deCos, 1997; Frey, 2005; Graue, 2003; Graue & DiPerna, 2000; Marshall, 2003; Meisels, 1992; Shepard & Smith, 1988).

### **Kindergarten Curriculum**

In addition to simple chronological age issues impacting the curriculum, there were other factors as well. There was now pressure from local and state governments to raise expectations due to increased accountability (Graue, 2003; Shepard & Smith, 1988), there was an influx of children with more pre-school experience resulting in an increased ability to socialize along with a higher basic skill set (deCos, 1997) and increased parental expectations (Graue & DiPerna,

2000; Meisels, 1992; Smith & Shepard, 1988). These factors, when considered together, are especially unfair to those children who come to school with limited experiences, little exposure to academics or school routines and immaturity (March, 2005). Research conducted by Graue (2003) noted that more than half of all kindergarteners attending school at the time came with some type of preschool experience.

An upward shift in the curriculum also meant a shift in the fundamental premise of kindergarten. With the expectations of kindergartens increasing and the time for content mastery decreasing, the original intent of kindergarten also changed from developmentally appropriate to more rigorous and structured (Crosser, 1988; Elkind, 1986; Frey, 2005; Graue, 2003; Graue & DiPerna, 2000; March, 2005; Marshall, 2003; Shepard & Smith, 1988; Smith & Shepard, 1988). The term developmentally appropriate can be defined as “[a program] based on knowledge of the stages of child development, and an understanding that each child is unique and that each child’s experiences should match his or her development abilities” (Southern Regional Educational Board, 1994).

A study conducted by the Frank Porter Graham Center in Chapel Hill, North Carolina found that only 20% of classrooms in our state met or exceeded the criteria for developmental appropriateness in kindergarten. Their basis for inappropriateness included (a) too much time in whole group settings as opposed to free play, (b) too many teacher directed activities instead of self-directed exploratory activities, (c) worksheets and rote learning in place of authentic instruction and discovery learning, (d) too little individualized instruction, and (e) too few manipulative activities in classrooms (Bryant et al., 1991). Teachers who fail to individualize their instruction and teach to the average child will increase their demands for knowledge, skills and behavior to the detriment of young students (Ackerman & Barnett, 2005). The curriculum

content from grades beyond kindergarten is forced down, thus necessitating direct instruction in the areas of reading and math. Direct instruction is becoming common practice in kindergarten classrooms, which takes away from more developmentally appropriate instructional practices such as experiential learning (March, 2005). Elkind (1986) cautioned that there is the potential to do harm to a child's motivation if direct instruction is presented too early to young children.

The school culture and peer relationships also impacts the curriculum. The learning theories espoused by teachers and administrators have a direct impact on the developmental appropriateness of kindergarten classrooms (Bryant et al., 1991). Additionally, first grade teachers are now looking for mastery of material in kindergarten as opposed to exposure to material in kindergarten (Smith & Shepard, 1988). Increased demands and rigor in the kindergarten classroom has necessitated a closer look at the skill sets of children entering those classrooms.

### **Familial Options for Kindergarten Entrance**

Families have several options when their children become eligible for school entrance. In this paper, two options are discussed. First, families can allow their children to begin public school on time. The second option is that they can choose to keep their children at home or in preschool for an additional year even though they are age eligible for public school.

#### **On Time School Entry**

Ideally, children should be enrolled in school as soon as they are age eligible (Narahara, 1988; National Association of Early Childhood Specialists in State Departments of Education, 2000). Researchers and policymakers alike feel that it is the school's responsibility to meet the needs of the children that are age eligible to attend (Graue & DiPerna, 2000; Marshall, 2003; May et al., 1995). Holding children out of school when they are age eligible to attend has not

been substantiated in research to show it improves achievement, social development or boosts self-esteem (Marshall, 2003). Graue and DiPerna (2000) note that while the number of children entering school with more preschool experience is increasing, the number of those same children beginning kindergarten on time is not.

### **Redshirting**

Parents who hold their children out of school do so with the hope that this gift of time will afford their children extra time to mature both physically and cognitively in preparation for the rigor of their initial school experience (Crosser, 1998; Gay, 2002; Graue, 2003; Graue & DiPerna, 2000; Malone, West, Flanagan, & Park, 2006; March, 2005; Marshall, 2003; National Association of Early Childhood Specialists in State Departments of Education, 2000).

Additionally, families want their children to emerge as leaders and helpers in the kindergarten classrooms who will outperform their younger classmates (Graue, 2003). This holding out phenomenon is often referred to as redshirting. The term is borrowed from the world of sports, and it means that a player is kept out of varsity competition for a year (Horowitz, 2006). Frey (2005) cites that in 1995, 9% of all first and second grade students experienced delayed entrance into kindergarten. Redshirting is sometimes referred to as the Graying of Kindergarten meaning that children who begin kindergarten today are more likely to be 6 years old than 5 years old (Crosser, 1998). Nationally, about 7% of parents delay their age-eligible child's entrance into kindergarten by one year or more (Ackerman & Barnett, 2005). Again, the academic year begins in August, so an average classroom will have students who will not turn five years old on or until October 16 while some may have turned 5 on October 17 of the previous year. Children who are redshirted may have turned 5 years old in August, but their families elected to hold them out of school an additional year making them older than 6 at the beginning of the year (see Table 3).

These 6 year olds share the same classroom with students who may still be 4 years old three months into the start of school!

In his book *Outliers*, Malcolm Gladwell (2008) highlights sports team rosters noting that the birthdates are clustered rather than dispersed; hence, a more concentrated range of ability on the playing field. He goes on to liken the sports phenomenon to education stating that young children don't just catch up. In fact, Gladwell (2008) asserts that children are almost tracked into paths of success or underachievement well into adulthood based strictly on the time of year in which they were born. Those children that are older for grade, as in the sports world, simply perform better (Gladwell, 2008).

Children who are redshirted are most likely to be young white boys from affluent homes (Crosser, 1998; Frey, 2005; Graue, 2003; Graue & DiPerna, 2000; Horowitz, 2006; Meisels, 1992; National Center for Education Statistics, 2000). While Marshall (2003) states there is little research available about why families elect to hold their age eligible children out of school, other researchers indicate that families are often encouraged to delay entry of their age eligible children due to immaturity or lack of school readiness (Crosser, 1998; Gay, 2002; National Association of Early Childhood Specialists in State Departments of Education, 2000).

Children who are redshirted do show promise over their younger age peers initially (Ackerman & Barnett, 2005; Datar, 2006; Gay, 2002; March, 2005; Marshall, 2003; National Association of Early Childhood Specialists in State Departments of Education, 2000); however, any notable gains generally disappear completely by the third grade year (Horowitz, 2006; Marshall, 2003; National Association of Early Childhood Specialists in State Departments of Education, 2000). Datar (2006) indicated that the benefits from delaying kindergarten entrance



Table 3

*Entrance Age Categories and Redshirts*

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On Time Entrants					Early Entrants			Late Entrants				
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct16	Oct17	Nov	Dec
5.7	5.6	5.5	5.4	5.3	5.2	5.1	4.10	4.11	5.0	5.10	5.9	5.8

*Note.* Redshirts: Did not enroll when age eligible to do so.

are influenced by poverty, disability and gender. There is no research to substantiate any long-term benefits of redshirting.

The body of research does yield findings that redshirted children are from more affluent homes (Crosser, 1998; Frey, 2005; Graue, 2003; Horowitz, 2006; Meisels, 1992), are boys (Ackerman & Barnett, 2005; Crosser, 1998; Frey, 2005; Graue, 2003; Graue & DiPerna, 2000; Horowitz, 2006; March, 2005; May et al., 1995; National Center for Education Statistics, 2000) and the families want more time for them to mature (Ackerman & Barnett, 2005; Crosser, 1998; Frey, 2005; Gay, 2002; Graue & DiPerna, 2000; March, 2005; Marshall, 2003; National Association of Early Childhood Specialists in State Departments of Education, 2000) .

A report from the National Association of Early Childhood Specialists in State Departments of Education (2000) indicated that children who begin school late are often racial and language minority males from low socioeconomic status (SES) households. They further assert that these students are subjected to delayed entry, which infers that it was not the parent's sole decision to hold the children out of school. Oftentimes, the parents of children who are young for age or appear unready for school are counseled by the school to give their children the gift of time; hence, holding them out of school for a year despite the fact that they are age eligible (National Association of Early Childhood Specialists in the State Department of Education, 2000).

Other research findings note that minority families or those living in poverty send their children to school when they are age eligible (Horowitz, 2006; Narahara, 1988). Staying out of work or paying daycare expenses for an additional year would create an economic hardship on these families, so delayed entry is rarely an option for these children (Frey, 2005; Graue & DiPerna, 2000). Additionally, Frey (2005) contends that gender and race are stronger indicators

of redshirting as a practice than socioeconomic status (SES). This is supported by the National Center for Education Statistics (2000) data indicating that more boys than girls are redshirted and whites are redshirted at twice the rate of minorities.

There is also research that outlines the negative effects of redshirting. Some of the effects associated with holding children out of school are (a) social difficulties (Graue & DiPerna, 2000; Marshall, 2003; National Association of Early Childhood Specialists in State Departments of Education, 2000), (b) behavioral issues (Ackerman & Barnett, 2005; Datar, 2006; Graue, 2003; Graue & DiPerna, 2000; Marshall, 2003), (c) retention (Graue, 2003; May et al., 1995), (d) propensity to drop out of school due to being overage in grade (Graue & DiPerna, 2000; Marshall, 2003), and (e) a likelihood for participation in Special Education Services (Marshall, 2003; May et al., 1995).

Shepard and Smith (1986) suggest that parents consider the long-term implications of holding age-eligible children out of school such as a young girl entering puberty barely out of primary school or a young man dropping out of school his senior year because he's older than everyone else. With data available to support that children who are old for grade have a higher chance of dropping out of school, redshirting should be discouraged as a social practice (Gay, 2002).

Children who are redshirted are deprived of the opportunity to interact with the kindergarten curriculum or their grade level classmates on any level. Some researchers have likened redshirting to a form of retention in that children are held back before even beginning school (National Association of Early Childhood Specialists in State Departments of Education, 2000). Also, some children who are redshirted may have legitimate educational needs that go unmet because they are not in an educational setting. Hence, they do not receive the early

intervention services that they need in a timely and efficient manner (Graue & DiPerna, 2000). There is no research to substantiate the claims of increased academic performance, improved social skills or bolstered self-confidence for redshirted children (Marshall, 2003). Research does, however, indicate that children that are redshirted have no advantages socially, they are likely to become behavior problems in later schooling, they have a higher propensity to drop out of school and they are more likely to receive special education services later in their school careers (Marshall, 2003).

### **Cognitive and Social Implications of Atypical Entrants**

The popularity of kindergarten and the benefits it has to offer have certainly gained popularity over the years. The demand for earlier schooling opportunities for children has brought with it challenges for the teachers in kindergarten classrooms. One of those challenges is the varying degrees of readiness inherent for the children.

#### **Readiness**

According to May and Kundert (1997), readiness is the developmental preparedness of school aged children for formal instruction. Shaping developmental preparedness are such things as experiences within a child's world and exposure to academic material prior to school enrollment (S. Boyette, personal communication, November 14, 2007). Socioeconomic status is one of the strongest predictors of skill at school entry (Sadowski, 2006). Lee and Burkham (as cited in Sadowski, 2006), found that the academic scores of children in a high socioeconomic (SES) range were 60% higher than those scores of children in the lowest SES range. They also found that 78% of children from households making over \$100,000 per year attended preschool for two years prior to beginning kindergarten compared to less than 50% of children from households making under \$50,000 a year. Educational disparity is present before formal

schooling ever begins. The public schools should begin to address the lack of school readiness in some children by first understanding and preparing for those children. Nearly one half of all children under age five are from a racial or ethnic minority group according to the 2006 census (as cited in Sadowski, 2006). Moreover, Lee and Burkham (as cited in Sadowski, 2006) note the Hispanic population is the fastest growing population in America with English not being the primary language spoken in the home. Public schools must begin to strategize to close the achievement gap that exists before kindergarteners are ever enrolled in public school.

One indicator of readiness is participation in a pre-school experience. Fifty-three percent of teachers surveyed indicated that preschool experience is important for kindergarten success (National Center for Education Statistics, 1993). This fact is punctuated with researchers asserting that preschool experience has a positive effect on kindergarten performance (Frey, 2005; Gay, 2002; May et al., 2006). A study conducted by Magnuson, Waldfogel and Ruhm (as cited in Sadowski, 2006) found that participation in a pre-kindergarten experience is associated with significantly higher reading and math scores at school entry. They go on to say that these academic benefits appeared long-lasting for low-income children, who also happen to be black, Hispanic or immigrant. Today, Oklahoma is the only state that offers a universal pre-kindergarten program (Sadowski, 2006).

### **Retention**

Retaining children does not produce lasting academic advantages (Malone et al., 2006). The preponderance of research indicates that retention in grade is ineffective; however, educators across the nation continue to employ its use as a remedial practice (Gadeyne et al., 2008; Gay, 2002; Maddux, 1980; Malone et al., 2006; National Association of Early Childhood Specialists in State Departments of Education, 2000; National Center for Education Statistics, 2000;

Shepard & Smith, 1986; Shepard & Smith, 1988). Frey (2005) cites statistics from the National Association of School Psychologists stating that retention as a remedial practice has increased by 40% in the last 20 years. Meisels (1992) supports that with research indicating that 8.6% of all kindergarten children in North Carolina were retained in 1990.

While retention in kindergarten is designed to boost academic achievement by giving students another year to grow, research cannot substantiate that claim (Gadeyne et al., 2008; Shepard & Smith, 1988). In fact, students that are retained in kindergarten do make minimal academic gains but not at the level demonstrated by their promoted peers who were considered for retention (Gay, 2002; Malone et al., 2006; National Association of Early Childhood Specialists in State Departments of Education, 2000). Not only does it not help students get ahead academically, but it also has a negative impact on self-esteem and social relationships (Shepard & Smith, 1986).

Just as the practice of redshirting is correlated with affluence, so is the practice of retention associated with poverty. Children that are retained are most likely to be minority males from low socioeconomic status (SES) homes (Gadeyne et al., 2008; Gay, 2002; Graue & DiPerna, 2000; Malone et al., 2006). Frey (2005) indicated that poverty is a powerful predictor of retention. While poverty is a strong indicator of retention probability, Frey (2005) also asserted that parent involvement is a key factor in determining a child's promotion or retention status. Frey (2005) referenced the National Longitudinal Study of Adolescent Health which found that 33.9% of retained children were from the lowest SES quartile compared to only 8.6% from the highest SES quartile. Gadeyne et al. (2008) conducted a study in Flanders, Belgium that yielded results very similar to findings in the United States regarding retention. Children who were behind their peers prior to first grade were retained, referred to the exceptional

children's program or sent to a transitional class. Most students referred to the transitional class did not qualify for the program; however, the study found that the transition class was utilized far less than referral to the exceptional children's program or retention. Children were less likely to be promoted if they were born in the last months of the calendar year, spoke a non-native language and had low math and reading skills. Gadeyne et al. (2008) indicate that in American research, factors such as socioeconomic status, age, gender, and parent involvement do not relate to non-promotion decisions; however, all factors are very much considered in non-promotion decisions in Belgium.

A by-product of retention that does not manifest itself until much later than kindergarten is dropping out of school. According to Gay (2002), a child that is retained once is 25% less likely to graduate from high school, and a child that is retained twice has less than a 5% chance of graduating. Frey (2005) cites the High School and Beyond Study indicating that the overall dropout rate was 12.4%; however, that rate more than doubled to 27.2% for retainees.

The National Longitudinal Study of Adolescent Health has been following 120,000 7<sup>th</sup> thru 12<sup>th</sup> graders from 132 high schools and 80 communities since 1984 (Frey, 2005). A stratified sample of that database was accessed totaling 12,118 indicated that 21.3% of those students have been retained in grade (Frey, 2005). If we ascribe to Gay's (2002) research, then approximately 2,500 students from the sample have their chances of graduating cut by one fourth!

A study by Smith and Shepard (1988) yielded interesting results that highlight the disconnect between the theory and practice of retention. Interestingly, the teachers in their study thought that there were few problems or costs associated with retention. Consequences such as (a) dropping out of school, (b) social stigma, (c) behavioral issues, and (d) low self-esteem are all

associated with retention (Gay, 2002; Horowitz, 2006; Malone et al., 2006; Shepard & Smith, 1986). Additionally, the average cost per year in North Carolina to retain a student is approximately \$7,500 (Kindergarten Readiness Issues Group, 2003).

The teachers in the study also felt as if retention had no stigma associated with it as long as parents were supportive. Parents, on the other hand, felt as if there were many problems with retention that included (a) physical stature, (b) separation from friends, (c) negative comments from friends and family members, (d) feelings of failure, (e) teasing, and (f) boredom with the same curriculum (Smith & Shepard, 1988).

With retention not a solution and dropping out a problem, what do educators do? One educational practice is social promotion. Social promotion means to keep age cohorts together to promote both individual self-esteem and group cohesiveness (Smith & Shepard, 1988). Those students who are socially promoted have not mastered grade level curriculum (Frey, 2005). By the mid-1980s, public opinion polls indicated that 72% of the American Public felt that promotion to the next grade in school should be based upon mastery of in grade academic requirements (Frey, 2005). President Bill Clinton (as cited in Frey, 2005) even addressed the issue of social promotion in his 1998 State of the Union Address. “When we promote a child from grade to grade who hasn’t mastered the work, we don’t do that child any favors. It is time to end social promotion”. North Carolina ABC’s of Accountability sought to end social promotion with establishment of Gateways in grades three, five and eight (North Carolina Public Schools, 2009d). While a strong statement made with good intentions, the practicality of such a requirement proved impractical for public schools. Educators found themselves faced with throngs of students unable, or unwilling, to master in grade requirements in grades three, five and eight, and little space for classrooms for the retained students. A principal from a rural school in



North Carolina recalled that with the institution of gateways, there was an increase in retentions that inaugural year. However, achievement levels showed no increase the subsequent year of retention; hence, principals in his county were more lax with the policy during year two of implementation (J. Butler, personal communication, September 1, 2009). The district found itself at a crossroad of implementing policy or making sound educational and fiscal decisions in the best interest of students.

### **Referral and Placement into Exceptional Education Programs**

Research supports that a child's age does impact his formal school career (Datar, 2006; deCos, 1997; Graue, 2003; Graue & DiPerna, 2000; Marshall, 2003). Those children who are old for grade exhibit more behavior problems (Datar, 2006; deCos, 1997; Graue, 2003; Marshall, 2003) and have an increased likelihood of dropping out of school (deCos, 1997; Graue & DiPerna, 2000; Marshall, 2003). Those children who are the youngest in their class do not achieve as well academically when compared to their older classmates (deCos, 1997; March, 2005; National Association of Early Childhood Specialists in State Departments of Education, 2000; Shepard & Smith, 1986). Children who are young or display immature characteristics are sometimes intentionally held out of school despite the fact that they are age eligible to attend (Crosser, 1998; deCos, 1997; Frey, 2005; Gay, 2002; Graue, 2003; Horowitz, 2006; Malone et al., 2006; March, 2005; Marshall, 2003; National Association of Early Childhood Specialists in State Departments of Education, 2000).

With this knowledge, schools are still struggling with how to meet the individual needs of children. The expectation should be that schools are ready for children instead of children being ready for school (Crosser, 1998; March, 2005; May et al., 1995; Sadowski, 2006; Shepard & Smith, 1986; Shepard & Smith, 1988). Children vary in many different ways; however, the

curriculum presented to them is very uniform, rigorous and inflexible (Frey, 2005; March, 2005). In terms of kindergarten, classrooms should strive toward a more developmentally appropriate curriculum (Bryant et al., 1991). A 1991 study by the Frank Porter Graham Center in Chapel Hill determined that only 20% of classrooms in North Carolina met or exceeded the established criteria for developmental appropriateness (Bryant et al., 1991). May et al. (1995) suggested that a developmentally appropriate kindergarten curriculum could eliminate the redshirting phenomenon and early grade retention. When schools and teachers are faced with a stratification of ability levels and a broad spectrum of readiness levels, they sometimes fail to consider the fundamentals of appropriate primary age instruction and assume that the problem lies with the child instead of the method of instruction (Crosser, 1998; Frey, 2005; Graue & DiPerna, 2000; March, 2005; Shepard & Smith, 1986; Shepard & Smith, 1988). When children are not progressing academically parallel to their classmates and steps are not taken to instruct in developmentally appropriate methods, referrals to the exceptional children's program may be a logical next step for educators. Some children may only need a short term intervention, which the teacher may not be equipped to offer. In such cases, the referral process is certainly over utilized (Pugach, 1985).

The decision to refer children for testing to qualify for the exceptional children's program often lies with teachers (Pugach, 1985). Pugach's (1985) research indicates that teachers typically refer children for testing that have an ethnicity other than theirs and attributes the failure to acquire knowledge and skill as a consequence of home circumstance or parental contribution rather than having anything to do with the instruction provided by the teacher. She goes on to say that with the predominance of white teachers in education, minority children are disproportionately presented for testing over their white peers. Relative to grade span in the

referral process, Pugach (1985) found that elementary educators were more likely to offer intervention strategies once recognizing that students were experiencing learning difficulties than their junior high colleagues.

The research on who is referred to and subsequently placed in the exceptional children's program is mixed. Some researchers have found that the older kindergarten entrants experience more academic difficulty, thus necessitating the need for extreme intervening services, while other researchers claim that the younger kindergarten entrants experience the most academic difficulty (Elder & Lubotsky, 2009; Gay, 2002; Graue, 2003; Graue & DiPerna, 2000; Maddux, 1980; Martin et al., 2004; May et al., 1995; National Association of Early Childhood Specialists in State Departments of Education, 2000; National Center for Education Statistics, 2000; Shepard & Smith, 1986; Uphoff & Gilmore, 1985).

Some researchers contend that older students are referred to and placed in the exceptional children's program at a disproportionate rate (Gay 2002; Graue, 2003; Graue & DiPerna, 2000; May et al., 1995; National Association of Early Childhood Specialists in State Departments of Education, 2000). Children can be old for grade due to retention or to being redshirted, intentionally held out of school despite the fact that they were age eligible to attend (Horowitz, 2006; Marshall, 2003). Gay (2002) indicated that 61% of children with the Learning Disabled diagnosis had been retained at least once by the time they entered sixth grade. Redshirted children experience placement in the exceptional children's program at a higher rate than their normally entered peers (Graue, 2003; May et al., 1995). A study by May et al. (1995) highlighted 6% of redshirted children having been retained and 17.5% of redshirted children being placed in the exceptional children's program. Moreover, of the 17.5% referred for exceptional children's participation, 74% were boys. The National Center for Education

Statistics (2000) reports that twice as many redshirted children were identified as Developmentally Delayed in 1993 than their own time peers.

Conversely, other researchers contend that those children that are the youngest in grade are more likely to be referred for placement in the exceptional children's program (Elder & Lubotsky, 2009; Shepard & Smith, 1986; Uffhoff & Gilmore, 1985). Younger children are more likely to be referred for testing and placed in the exceptional children's program than their older classmates (Martin et al., 2004; Shepard & Smith, 1986; Uphoff & Gilmore, 1985). Elder and Lubotsky (2008) contend that being young at the start of kindergarten increases the likelihood of an Attention Deficit Disorder (ADD) or Attention Deficit Hyperactivity (ADHD) diagnosis by 2.9 percentage points with a baseline of 4.3. The youngest children in a class are diagnosed with a learning disability at a 50% higher rate than the oldest children (Elder & Lubotsky, 2009). A study by Martin et al. (2004) looks at the season of a child's birth in relation to his school performance and finds that early entrants with a birthday in June, July or August are diagnosed with a Specific Learning Disability (SLD) at higher rates than all other months of the year and that those same children are 25% more likely to be retained than their older peers. The rate of Learning Disabilities (LD) for these summer born boys was seven times greater than the rate for fall and winter boys. A closer look reveals fact that this group of summer-born children is using district, state and federal resources at a much higher rate than their fall, winter and spring peers (Martin et al., 2004).

The research on retention presented in this paper indicates that it is not a best practice in education (Gay, 2002; Horowitz, 2006; Malone et al., 2006; National Association of Early Childhood Specialists in State Departments of Education, 2000; National Center for Education Statistics, 2000; Shepard & Smith, 1986; Shepard & Smith, 1988); however, it is still utilized as

a remedial effort (Malone et al., 2006; Shepard & Smith, 1986). Reasoning among educators has not wavered since the late 1970s when kindergarten was introduced in North Carolina (Murray, 1974), and the research of that decade advised that kindergarten retention should be the initial and most important step in preventing the school failure of early entrants (Maddux, 1980). Research shows that children who are most likely to be retained are young minority males from low socioeconomic households (Gay, 2002; Graue & DiPerna, 2000). If teachers refer children for exceptional children's testing who are of an ethnicity other than their own, then minority males are overrepresented in both retention and exceptional children's program statistics (Pugach, 1985).

The turbulence of the 1960s created by the Civil Rights Movement, the fallout from Sputnik and the implications of *A nation at risk* all had powerful effects on primary grade instruction (deCos, 1997). Kindergarten was no longer the avenue to refine socialization and acquire basic skills. It was becoming Ground Zero for an educational career of rigor, inappropriate developmental concepts and instructional methods delivering a curriculum designed for former first graders and older classmates (Bryant et al., 1991; Crosser, 1988; Frey, 2005; Graue, 2003; Graue & DiPerna, 2000; March, 2005; Marshall, 2003; Meisels, 1992; Shepard & Smith, 1986; Shepard & Smith, 1988). Contributing to the increased expectations of kindergarten classrooms across the country was the introduction of cognitively focused television programming including Sesame Street and the Electric Company. The show's content was geared more toward skill acquisition than entertainment; hence, they contributed to raising the norms for kindergarten learning (Shepard & Smith, 1988). A study by Elkind (1986) revealed that the delivery methods employed by such shows were much too rapid for the information processing abilities of young children. As a result, the focus on attention spans of

young children has increased. Elkind (1986) highlighted that the diagnosis rate for a leading disability among school age children, Attention Deficit Disorder, commonly referred to as ADD, has steadily increased over the last twenty years concurrent with the programming history of such television shows. In today's public schools, a diagnosis of Attention Deficit Disorder is quite common. It is especially prevalent among young children. Children that begin school a year younger at school entry increases the likelihood of an ADD or ADHD (Attention Deficit Disorder with Hyperactivity) by 2.9 percentage points with a 4.3% baseline rate. Conversely, being a year older at kindergarten entry reduces the chance of an ADD or ADHD diagnosis by 67% relative to the baseline diagnosis rate (Elder & Lubotsky, 2009).

The push to raise the entrance age to kindergarten could have unintended consequences for the youngest students as well (Bryant et al., 1991; Datar, 2006; deCos, 1997; Meisels, 1992; Shepard & Smith, 1988). Elder and Lubotsky (2009) posit that moving the kindergarten entrance age from December 1 to September 1 could increase the baseline diagnosis rate of ADD and ADHD by up to 25%. And the question remains if the diagnosis is truly Attention Deficit Disorder or an incompatibility between school readiness and developmentally appropriate practice in elementary school. Children who are young for grade are much more likely to be referred by their teachers for learning disabilities testing and diagnosed with learning disabilities than their older classmates (Uphoff & Gilmore, 1985). Research by Elder and Lubotsky (2009) presents that age-related differences in school are more about experiences and opportunities prior to beginning school than actual learning once enrolled in a formal school setting. Children who are older have simply had longer to acquire experiences than younger children. Additionally, those children who were redshirted tend to be from higher socioeconomic households, which afford them access to opportunities and experiences beyond their younger and under resourced

classmates (Crosser, 1998; Frey, 2005; Graue, 2003; Graue & DiPerna, 2000; Horowitz, 2006; Meisels, 1992). Elder and Lubotsky (2009) further discussed the positive relationship between kindergarten entrance age and achievement as long as the level of parental investment is commensurate with parental resources. Any discrepancy in skill acquisition for older school entrants among higher socioeconomic status children is diminished by eighth grade according to Elder & Lubotsky (2009).

### **Summary**

Kindergarten was designed as a place of play and socialization, but as the demands of education evolved, so did the kindergarten classroom. It became a place to jump start formal schooling (deCos, 1997). Most states do not require children to attend kindergarten, and many states do not offer public kindergarten (Kauerz, 2005). North Carolina offers full day kindergarten programs; however, the age of compulsory attendance is seven meaning that children do not *have* to attend kindergarten (North Carolina General Assembly, 2009b; North Carolina Public Schools, 2009a).

Kindergarten entrance is largely determined by chronological age and school readiness (deCos, 1997). Kindergarten readiness is more of an issue for teachers than parents, and teachers factor in the level of readiness when children are presented for school entrance (Gay, 2002). If children are age eligible to attend school, readiness issues can be used to discourage enrollment, but not used to deny enrollment (Ackerman & Barnett, 2005; Graue, 2003). Some teachers believe that if children are emotionally immature and unready to accept the rigor imposed by the formal school setting, then holding them out for an additional year is beneficial to the child (Shepard & Smith, 1988). However, little research exists to support this claim (Marshall, 2003). In fact, research states that children should begin school as soon as they are age eligible

(National Center for Education Statistics, 1993). Children who enter school for the first time can be considered on time entrants, young entrants or late entrants. The three age spans create a diversified classroom regarding ability and readiness for formal school participation (deCos, 1997; Horowitz, 2006; Meisels, 1992; National Center for Education Statistics, 2000).

Learning theories that educators ascribe to can help shape their view on school entry. Maturationists believe that human behavior develops in a very predictable pattern and cannot be rushed (de Cos, 1997; Shepard & Smith, 1988). Behaviorists believe that learning doesn't just happen, that children take new experiences and combine them with existing knowledge to make sense of their world (deCos, 1997). Interactionists believe that knowledge exists in the world and within children, and the two interact to allow learning to occur for children (deCos, 1997; Shepard & Smith, 1988).

Since the publication of *A Nation at Risk*, the American education system has undergone substantial reform in the name of international competition (United States Department of Education, 1983). While many documents have been produced addressing accountability in public schools, the most recent is the 670 page PL 107-110 often referred to as No Child Left Behind (U.S. Department of Education, 2001). The overarching premise of the act is that all children will be on grade level by 2014. That charge does not exclude the youngest of public school children, kindergarteners. In an effort to meet established accountability standards, many systems have increased the minimum age of kindergarten entrance. Children who are older upon school entry simply perform better (Datar, 2006).

Older children entering kindergarten indirectly impacted the instruction that all children in kindergarten received. Developmentally appropriate practices gave way to more direct instruction and paper and pencil tasks once reserved for first grade (Bryant et al., 1991).



Additionally, teachers taught the average child often failing to individualize for younger students (Ackerman & Barnett, 2005).

When children become age eligible for kindergarten, families may choose to enroll them in public school or not. The literature supports children enrolling in school when they are age eligible to attend (Graue & DiPerna, 2000; Marshall, 2003; May et al., 1995; Narahara, 1988; National Association of Early Childhood Specialists in State Departments of Education, 2000). The literature is not so favorable regarding the practice of redshirting. Redshirting is a term borrowed from the world of sports meaning that a player is kept out of varsity competition for a year (Horowitz, 2006). In education, redshirting means that children are intentionally held out of school to allow them additional time to mature both physically and cognitively, often with the hope of providing some sort of academic *edge* (Crosser, 1998; Gay, 2002; Graue, 2003; Graue & DiPerna, 2000; Malone et al., 2006; March, 2005; Marshall, 2003; National Association of Early Childhood Specialists in State Departments of Education, 2000). About 7% of parents delay school entry for their age eligible children (Ackerman & Barnett, 2005).

Children typically redshirted are males with summer birthdays from affluent homes (Crosser, 1998; Frey, 2005; Graue, 2003; Graue & DiPerna, 2000; Horowitz, 2006; Meisels, 1992; National Center for Education Statistics, 2000). While these children often show initial academic gains over their younger peers, the gains are short-lived and negligible by third grade (Ackerman & Barnett, 2005; Datar, 2006; Gay, 2002; Horowitz, 2006; March, 2005; Marshall, 2003; National Association of Early Childhood Specialists in State Departments of Education, 2000).

The negative effects of redshirting that are often not realized until later in school careers include (a) social difficulties, (b) behavioral issues, (c) retention, (d) a propensity to drop out of

school due to being overage for grade, and (e) an increased likelihood for participation in Special Education (Ackerman & Barnett, 2005; Datar, 2006; Graue, 2003; Graue & DiPerna, 2000; Marshall, 2003; May et al., 1995; National Association of Early Childhood Specialists in State Departments of Education, 2000).

For children who do enter kindergarten when age eligible, readiness for participation in formal schooling can be of concern to teachers. Educational disparity and an achievement gap are evident before children even finish kindergarten. A study by Lee and Burkham (as cited in Sadowski, 2006) found that the academic scores of children from high SES homes were 60% higher than those children from the lowest SES range. The study also found that 78% of children from homes making over \$100,000 per year attended two years of preschool before beginning kindergarten compared to less than 50% of children from households making less than \$50,000 per year. Preschool experiences are proven to increase kindergarten performance (Frey, 2005; Gay, 2002; May et al., 2006).

Retention can be a delayed effect of academic redshirting or limited readiness upon school entry. Research clearly does not substantiate any benefits of retaining children in grade, and, in fact, supports the practice of promoting children that were considered for retention (Gadeyne et al., 2008; Gay, 2002; Maddux, 1980; Malone et al., 2006; National Association of Early Childhood Specialists in State Departments of Education, 2000; National Center for Education Statistics, 2000; Shepard & Smith, 1986; Shepard & Smith, 1988). Those children most likely to be considered for retention are minority males from low socioeconomic status households (Gadeyne et al., 2008; Gay, 2002; Graue & DiPerna, 2000; Malone et al., 2006). Thirty-three point nine percent (33.9%) of retained children are from the lowest SES quartile compared to only 8.5% of their peers from the highest SES quartile (Frey, 2005).

Alternatives to retention include promotion, placement in transitional classrooms, and recommended testing for Exceptional Children's Services (Frey, 2005; Gadeyne et al., 2008; National Association of Early Childhood Specialists in State Departments of Education, 2000). Children who were considered for retention, but promoted to the next grade do better academically than their non-promoted peers (National Association of Early Childhood Specialists in State Departments of Education, 2000). In a Belgium study conducted by Gadeyne et al. (2008), transitional classes are often underutilized in favor of testing for Exceptional Children's Services.

The decision to test for specialized educational services, considered by some to be the highest level of intervention available to children in public school, most often lies with the classroom teacher. Factors that influence the recommendation are ethnicity and the teacher's perception of the level of parental involvement (Pugach, 1985). The research is mixed when looking at who is referred most frequently for testing. Some researchers contend that older children are referred most often, and other researchers find that the younger children are most frequently referred (Elder & Lubotsky, 2009; Gay, 2002; Graue, 2003; Graue & DiPerna, 2000; Martin et al., 2004; May et al., 1995; National Association of Early Childhood Specialists in State Departments of Education, 2000; Shepard & Smith, 1986; Uphoff & Gilmore, 1985).

The literature demonstrated that despite raising the kindergarten age, learning disparities among children continue to exist because there can be at least one year's difference in chronological age, and the developmental differences can span as much as two years (Ackerman & Barnett, 2005; deCos, 1997; Horowitz et al., 2007; March, 2005; May et al., 1995; National Center for Education Statistics, 2000; Shepard & Smith, 1986; Shepard & Smith, 1988; Weil, 2007). The literature further indicated that children who begin school as early entrants are

academically behind their on time and late entrant peers (Elder & Lubotsky, 2009; Graue & DiPerna, 2000; Marshall, 2003; May et al., 1995; Meisels, 1992; Shepard & Smith, 1986; Uphoff & Gilmore, 1985).

A child's chronological age is a factor in the decision-making process used to refer him/her for testing and placement in the exceptional children's program. The literature is divided, however, in which age groups of children are referred for testing and placed in programs more frequently. Some researchers contend that younger children, those termed early entrants in this study are referred and placed in the exceptional children's at a disproportionate rate (Elder & Lubotsky, 2009; Maddux, 1980; Martin et al., 2004; Shepard & Smith, 1986; Uphoff & Gilmore 1985). Conversely, other researchers have found that late entrants or redshirted children are referred for testing and placed in exceptional children's programs more frequently (Graue, 2003; Graue & DiPerna, 2000; Malone et al., 2006; Marshall, 2003; May et al., 1995; National Association of Early Childhood Specialists in State Departments of Education, 2000).

## CHAPTER THREE: PROCEDURES AND METHODOLOGY

### Overview

Public schools in North Carolina continue to work toward compliance with directives set forth by both the North Carolina Student Accountability Plan and the Federal Government's *No Child Left Behind* legislation (North Carolina Public Schools, 2009d). Both documents seek to ensure the public school system improves student achievement. Ensuring high student performance in this era of high-stakes testing has proven to be difficult for many systems given the varying levels of school readiness inherent with all children at school entry (Ackerman & Barnett, 2005; National Center for Education Statistics, 1993; Sadowski, 2006). Children who present learning difficulties early in their educational careers can be misdiagnosed as learning disabled when they are actually immature for the rigors of school both physically and cognitively (Elder & Lubtosky, 2009; Martin et al., 2004; Shepard & Smith, 1986; Uphoff & Gilmore, 1985). This study examined any relationships between pre-determined criteria and a student's likelihood for placement in the exceptional children's program. The school entrance age was calculated to the nearest month. The first two years examined in the study were academic years 2007-08 and 08-09 with October 16 as the established cutoff date for kindergarten entrance (North Carolina Public Schools, 2009b); 2009-10 served as the inaugural year for the amended kindergarten cutoff date of August 31 (North Carolina General Assembly, 2009a). Kindergarten students were categorized as On Time Entrants, Early Entrants or Late Entrants based on the day and month of the year they were born. An additional category of redshirted students encompassed all students who entered school after the age of eligibility. The reasons for delayed school entry were not explored.

This study was designed to answer the focused research questions outlined below:

1. Is there a correlation between gender and other variables examined leading to referral for testing for the exceptional children's program?
2. Is there a correlation between race and other variables examined leading to referral for testing for the exceptional children's program?
3. Is there a correlation between socioeconomic status and other variables examined leading to referral for testing for the exceptional children's program?
4. Is there a correlation between kindergarten entrance age and other variables examined leading to referral for testing for the exceptional children's program?
5. Is there a correlation between in grade retention and other variables examined leading to referral for testing for the exceptional children's program?
6. Is there a correlation between beginning school after being age eligible (redshirting) and other variables examined leading to referral for testing for the exceptional children's program?
7. Is gender a factor when determining placement for a child in the exceptional children's program?
8. Is race a factor when determining placement for a child in the exceptional children's program?
9. Is socioeconomic status a factor when determining placement for a child in the exceptional children's program?
10. Is kindergarten entrance age a factor when determining placement for a child in the exceptional children's program?
11. Is in grade retention a factor when determining placement for a child in the exceptional children's program?

12. Is beginning school after being age eligible (redshirting) a factor when determining placement for a child in the exceptional children's program?

The context of the study is a local education agency, LEA, in North Carolina. The local education agency is centrally located in North Carolina within two hours of four urban cities. The population is approximately 47,000 with about 28% of the county's residents being below the age of 19. The county's unemployment rate is high with 13% of residents out of work. The county's current largest single employer is a chicken processing plant with the school system being the second largest employer. The annual median income is \$44,000, and 19.6% of the residents live below the poverty level (Richmond County Chamber of Commerce, Retrieved from <http://www.richmondcountychamber.com/chamber/communityprofile.htm>).

### **Sample**

All student scores for the sample were taken from a de-identified population in the school district. School records were accessed to gather relevant data; thus, *ex post facto* were relied upon for this study. Records included in this study were from all students in kindergarten through sixth grade who were referred for exceptional children's program testing for the academic years 2007-08, 2008-09 and 2009-10. The first two sample years observed the October 16 cutoff date for kindergarten entrance while the third sample of year of 2009-10 observed the new cutoff date of August 31. Three hundred and thirty three student records were initially collected for inclusion in the study representing all students in kindergarten through sixth grade who were referred for placement testing into the exceptional children's program for the academic years 2007-08, 2008-09 and 2009-10. For the 2007-08 school year, 172 students were presented for study inclusion. Of those, 79 students were excluded from the study. Two students moved outside of the county and 77 students did not have a kindergarten enrollment date on file. This

left 93 students eligible for inclusion in the study. In academic year 2008-09, 74 students were presented for study inclusion. Seventeen of these were excluded from the study. One student moved outside of the county and 16 students did not have a kindergarten enrollment date on file. This left 74 students eligible for inclusion in the study. In academic year 2009-10, 87 students were presented for inclusion in the study. Thirty one were excluded from the study with 19 students not having a kindergarten enrollment date on file and 12 having no socioeconomic status (SES) on file. This left 56 students eligible for inclusion in the study. In all, 206 students were examined with relevant data included for study purposes (n = 206).

Three hundred thirty three records of students referred for placement testing into the exceptional children's program were initially obtained from the district. 127 records were excluded from the study for being incomplete and not having the necessary data required for inclusion in the data set. The final sample included 206 eligible records. A summary of the demographic characteristics of students included in the study is represented in Table 4.

Support for the study was granted by the Assistant Superintendent of Curriculum on behalf of the superintendent and local Board of Education pursuant to Board Policy Number 5230 (see Appendix A). The policy indicates that the superintendent may approve a research request if three criteria are met: (1) the results of the study may benefit the children in the system, (2) the study's purpose and methodology are compatible with the goals and objectives of the district and (3) the study does not interrupt instructional time. This researcher's study met all three criteria as provided by the above referenced policy (Richmond County Schools, Retrieved from [www.richmond.k12.nc.us](http://www.richmond.k12.nc.us)). Additionally, the county may use the data gathered from this



Table 4

*Demographic Characteristics of Students (N = 206)*

Characteristic	N	%
<b>Race</b>		
White	82	40
Black	105	51
Hispanic	10	5
Other	9	4
<b>Gender</b>		
Male	111	54
Female	95	46
<b>Socioeconomic Status</b>		
Free/Reduced Lunch	189	92
Paid Lunch	17	8
<b>Entrance Age Category</b>		
On Time	80	39
Early	82	40
Late	28	14
Redshirt	16	7
<b>Retention History</b>		
Never Retained	141	68
Retained Once	65	32
<b>Placement Decision</b>		
Placed	90	44
Not Placed	116	56

study to better inform instructional decisions in the district regarding student placement into the exceptional children's program. More precisely, the findings of this study may equip practicing administrators with a broader knowledge base allowing them to exercise their educational leadership before, during and following the referral process.

The three cohorts of student records that were included and analyzed moved through three departments: The Office of Exceptional Children, NCWISE and the Office of Child Nutrition. Exact procedures are detailed in the following section; however, it is important to note that no student names were contained in the preliminary data collection procedures or in the final research project. Students were identified with ascending numerical values that coincided with their assigned pupil identification number generated by NCWISE. There were no names of children on data collection materials, only numerical and corresponding NCWISE numbers.

### **Data**

The researcher examined records for all children in kindergarten through sixth grade referred for placement into the Exceptional Children's Program for the school years 2007-08, 2008-09 and 2009-10. These three years were selected to establish a finite data set for the researcher as data regarding school lunch status changes throughout the year. Collection of data regarding school lunch status past the 2009-10 year would not have allowed the researcher to compile and employ the selected data analyses in a timely manner. The pertinent data utilized for the study included the child's data tracking number (NCWISE student identification number to be described in the following section), the child's date of birth, the child's gender, the child's race, the child's school lunch status, the number of times the child has been retained in grade at the time of referral, the date of enrollment in kindergarten and the placement decision based on eligibility testing results.

Demographic data about students were collected from the North Carolina Window on Student Education, commonly referred to as NCWISE. NCWISE was established in 2004 replacing the Student Information Management System, or SIMS, as the primary information management tool for North Carolina Public Schools. NCWISE is a web-based application with three primary functions: (1) Electronic Student Information System, or eSIS, which allows schools to manage student data, (2) Electronic Data Interchange allows schools to share data on students and (3) Uniform Education Reporting System, or UERS, transfers student data from local districts to the North Carolina Department of Public Instruction (NCWISE, 2010).

Information contained in NCWISE relevant to this study includes the child's NCWISE number, date of birth, race, gender, number of retentions and date of enrollment in public school kindergarten. The NCWISE number allowed the Department of Child Nutrition and the Department of Exceptional Children to access individual student demographic data to include lunch status, initial date of referral for Exceptional Children's services and the placement decision for Exceptional Children's services.

### **Method of Analysis**

The study was designed to predict the likelihood of placement into the exceptional children's program based on the child's age at initial school entry. The relationship between several factors were examined to determine their impact on and relationship to the student's placement (or not) into the exceptional children's program. The study also examined relationships among variables leading to referral for testing using a Pearson Product Moment Correlation. These factors included race, gender, socioeconomic status (SES) based on school lunch status, age at kindergarten entrance and retention history. Additionally, the study examined the phenomenon of redshirting to the extent possible.

Logistic regression was the most appropriate methodology for this study. Simply put, the researcher obtains scores on two or more measures for a group to determine how a combination of these scores will predict performance or placement in an outcome measure (Gall, Gall, & Borg, 2005; Huck & Cormier, 1996). Having multiple independent variables will provide a more robust prediction of the dependent variable. The researcher should work to ensure that the predictor variables are related to the dependent, or predictive, variables, but not to one another. Additionally, it should be determined that having multiple independent variables will strengthen the relationship between the predictor variables and the predicted outcome (Cokluk, 2010; Salkind, 2008). The alpha level for all statistical analyses was set at  $p < 0.05$

To demonstrate compliance with the university's Institutional Review Board process as well as to ensure confidentiality as suggested in Creswell (2007), no student names were used from the district in which the data were obtained. The district employs a unified school district in rural North Carolina. The post hoc data needed for the study were collected from the school's Central Office as well as the local Chamber of Commerce. The researcher worked with the NCWISE office, the Department of Exceptional Children and the Child Nutrition Office in the district to define and collect the necessary data. First, a list of all students referred for testing for the Exceptional Children's Services were obtained from that office for the school years 2007-08, 2008-09 and 2009-2010. The Department of Exceptional Children retrieved the needed data outlined above and numbered the children chronologically after identification to protect their identity from the researcher. When the researcher received the list, it was in chronological order with associated NCWISE numbers. The researcher had no way to access demographic information using the NCWISE number unless those children were currently enrolled at her school, and the current schools were not indicated. Upon completion of this list, the

chronological list was given to the NCWISE office to attach demographic and enrollment data to each subject. Enrollment data were converted into months for the chronological age. The data were then cross referenced with the kindergarten entrance date for the appropriate year. The last step required the Office of Child Nutrition to attach school lunch status information with the associated subjects. Paid lunch status indicates that a child's family is above 185% of the federal poverty guideline; hence, they are not considered "low SES" (socioeconomic status). A child who receives free lunch lives in a family with income below 130% of the federal poverty guideline and a child who receives reduced priced meals lives in a family with income between 130% and at or below 185% of the federal poverty guideline. These children are considered "low SES" (United States Department of Agriculture, 2010). Since the researcher did not have access to subject names, at no time were the names of children used. All related records and data were secured in a locked filing cabinet in the researcher's home. Data were also stored on the researcher's home computer with password protected access.

The researcher used the Statistical Program for the Social Sciences (SPSS): An IBM Company software program. IBM acquired SPSS in 2009. SPSS is the acronym for Statistical Package for the Social Sciences, and was originally released in 1968 (SPSS, 2010). The current study identified the dependent variable as placement into the Exceptional Children's Program. Independent variables include demographic and educational identifiers of students. The coding system for independent variables is outlined in Table 5 and Table 6.

### **Limitations of the Study**

While many factors influence the academic success of children, kindergarten age has been at the center of debate for many years (Bryant et al., 2000; deCos, 1997; Horowitz, 2006; March, 2005; National Center for Education Statistics, 2000; Shepard & Smith, 1986; Shepard &

Table 5

*Code Assignments for Educational Independent Variables*

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Educational Factors	Designated Code
Early Kindergarten Entrants	4
On Time Kindergarten Entrants	1
Late Kindergarten Entrants	2
Redshirted Entrants	3
Students Never Retained in Grade	0
Students Retained Once in Grade	1
Students Retained Two or More Times	2

---

Table 6

*Code Assignment for Demographic Independent Variables*

---

Demographic Factors	Designated Code
White Students	0
African American Students	1
Hispanic Students	2
Other Nationality Students	3
Male	1
Female	2
Low Socioeconomic Status (SES)	0
High Socioeconomic Status (SES)	1

---

Smith, 1988). This study examined the relationship between kindergarten entrance age and the likelihood of exceptional children's programming placement. It is the researchers hope that the data yielded from this study will enable families and districts to make more informed decisions when enrolling children in public school for the first time. However, the age of a child at school entrance is only one of many home, societal, developmental and social factors to be considered. Analyzing specific demographic and educational data on a targeted population of children may not only help to inform current policies and procedures governing the referral and placement process for the exceptional children's program, but may also help to better inform families, specialized school personnel and practicing school administrators regarding best practices in the educational and social interests of children. Employing logistic regression as the preferred methodology for this study allowed the researcher to look through a very specific and narrow lens regarding potential risk factors for exceptional children's placement.

This study is limited in scope and its findings may not be generalized to all populations of children. The conclusions drawn from this study are not able to be generalized due to the fact that the study considers only three cohorts of kindergarten entrants from one local education agency in North Carolina. The district is unified and there can be no comparison within the county boundaries. It is also important to note that the exceptional children's program contains many sub-categories and classifications. In this study, the sub-categories and classifications for exceptional children's placement were not identified or explored, only the placement into the broad, overarching category of exceptional children.



## **CHAPTER FOUR: ANALYSIS OF DATA**

This chapter provides a crisp picture of the findings yielded and statistical tests employed. The purpose of the study was to examine any relationships between pre-determined criteria leading to a student's referral for placement in the Exceptional Children's Program. Additionally, the researcher examined a student's likelihood for placement into the Exceptional Children's Program. The relationship between several factors were examined to determine their impact on and relationship to the student's placement (or not) in the Exceptional Children's (EC) Program.

To determine any relationship between these identifying factors and the likelihood for placement into the Exceptional Children's Program, Pearson correlations, and a logistic regression model for data analysis was employed utilizing SPSS: An IBM Company or Statistical Package for the Social Sciences. Since all students in the sample were referred for testing, only relationships among those referred were examined, along with their likelihood to be placed in the Exceptional Children's Program.

### **Established Correlations**

Since all students included in this study were referred for testing for the Exceptional Children's Program, the researcher examined the relationships between factors that may contribute to the student's likelihood for referral. The demographic and educational data gathered on those students were examined to determine any correlations between identifying factors and referral for testing. The results of those correlations are detailed in Table 7.

Table 7

*Correlations Among All Factors Examined Leading to Referral*

		race	gender	Age in Months at K entry	Number of Retentions	Age in months at referral	Lunch status
Race	Pearson	1					
	Correlation		-.014	.085	.029	.152*	-.226**
	Sig. (2-tailed)		.838	.225	.683	.030	.001
Gender	Pearson		1				
	Correlation	-.014		.000	-.125	-.004	-.065
	Sig. (2-tailed)	.838		.997	.073	.953	.352
Age in Months at K entry	Pearson			1			
	Correlation	.085	.000		-.162*	.182**	-.028
	Sig. (2-tailed)	.225	.997		.020	.009	.691
Number of Retentions	Pearson				1		
	Correlation	.029	-.125	-.162*		.060	-.090
	Sig. (2-tailed)	.683	.073	.020		.390	.200
Age in months at referral	Pearson					1	
	Correlation	.152*	-.004	.182**	.060		-.043
	Sig. (2-tailed)	.030	.953	.009	.390		.538
Lunch status	Pearson						1
	Correlation	-.226**	-.065	-.028	-.090	-.043	
	Sig. (2-tailed)	.001	.352	.691	.200	.538	

Note. \*. Correlation is significant at the 0.05 level (2-tailed)

\*\* . Correlation is significant at the 0.01 level (2-tailed).

N = 206.

## Research Questions

1. Is there a correlation between gender and other examined variables leading to referral for testing for the exceptional children's program?

There is no correlation between gender and other examined variables leading to referral for testing for the exceptional children's program. Of the 206 students ( $n = 206$ ), 111 (54%) were males and 95 (46%) were females (see Table 4). These data were quite surprising as the literature indicates that the majority of students referred for placement into the exceptional children's program are males (Graue & DiPerna, 2000; Martin et al., 2004; May et al., 1995).

2. Is there a correlation between race and other examined variables leading to referral for testing for the exceptional children's program?

There is a statistically significant correlation between race and other examined variables leading to referral for testing for the exceptional children's program. There is a correlation between a student's race and the age at which he is referred for testing. The relationship is statistically significant at the  $p < 0.05$  level ( $R = .152$ ) (see Table 7).

3. Is there a correlation between socioeconomic status and other examined variables leading to referral for testing for the exceptional children's program?

There is a correlation between a student's socioeconomic status and other examined variables leading to referral for testing for the exceptional children's program. The research indicates that students from low socioeconomic households are more often referred for placement in the exceptional children's program than their more affluent peers (Graue & DiPerna, 2000; Horowitz et al., 2007). The data obtained from these analyses yielded similar results. Of the 206 students examined ( $n = 206$ ), an overwhelming 189 (92%) of those qualified for free and reduced lunch indicating a low socioeconomic status. Table 7 indicates a highly

correlated relationship between minority students, non-whites, and low socioeconomic status when being referred for testing. This correlation is statistically significant at the  $p < 0.01$  level ( $R = -.226$ ). Conversely, only 17 students referred for exceptional children's Placement (8%) paid for lunch, thus indicating a higher socioeconomic status (see Table 4). These relationships are explored in more depth within the logistic regression presented later in this chapter.

4. Is there a correlation between kindergarten entrance age and other examined variables leading to referral for testing for the exceptional children's program?

There is a correlation between a student's kindergarten entrance age and other examined factors leading to referral for testing for the exceptional children's program. The mean age of students included in this study is 64.30, or five years and four months. This age fits into the *on time* entrant category detailed in Table 1. The mean age of students at referral is 93.99, or approximately seven years and ten months. As detailed in Table 7, the age in months that a student begins school is correlated to the age at which he is referred for testing for the exceptional children's program. Although the strength of this relationship is weak at .182, it is statistically significant at the  $p < 0.01$  level.

5. Is there a correlation between in grade retention and other examined variables leading to referral for testing for the exceptional children's program?

There is one correlation between in grade retention and other examined variables leading to referral for testing for the exceptional children's program. It is important to note in Table 9 that the age at which a student begins kindergarten is significantly correlated to the number of times that student is retained in grade. The correlation is statistically significant at the  $p < 0.05$  level ( $R = -.162$ ).

6. Is there a correlation between beginning school after being age eligible (redshirting) and other examined variables leading to referral for testing for the exceptional children's program?

There is no correlation between a student beginning school after being age-eligible (redshirting) and other examined variables leading to referral for testing for the exceptional children's program.

### **Results of Logistic Regression**

The remaining research questions examine the variables that may serve as predictor variables for placement into the exceptional children's program. The logistic regression model was chosen for the study because it helps the researcher determine likelihood of the outcome of interest, in this case, placement or not into the exceptional children's program. The initial data yielded a positive goodness of fit for this test indicating an appropriate model ( $R = .106$ ). While representing a rather small effect size ( $R = .106$ ), the fact that the effect is statistically significant and the relationship is positive, indicates a goodness of fit for the variables selected (see Table 8). While the model accounts for only an approximate 10% of the variability in a decision to place a student into the exceptional children's program, chapter five will discuss the importance to educators of such a result.

In examining the outcomes for logistic regression, the Hosmer and Lemeshow Test should *not* be statistically significant. This indicates that the model is appropriate. The model summary (see Table 9) indicates the R square for the model ( $R = .308$ ).

7. Is gender a factor when determining placement for a child in the Exceptional Children's Program?

Table 8

*Model Summary Produced by SPSS for the Logistic Regression*

---

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	265.329 <sup>a</sup>	.079	.106

---

*Note.* <sup>a</sup>. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Table 9

*Hosmer and Lemeshow Test for the Logistic Regression*

---

Step	Chi-square	Df	Sig.
1	9.419	8	.308

---

According to the statistical analysis, gender is a factor when determining placement in the exceptional children's program. As indicated in Table 10, the statistical significance was .022 ( $p < 0.05$ ). The beta weight for this predictor was -.684. In layman's terms, this means that 68% of the placement decision was related to gender. This makes gender statistically significant when determining placement. Gender is a factor when determining placement for a child in the exceptional children's program.

8. Is race a factor when determining placement for a child in the exceptional children's program?

While race is not a statistically significant factor, it cannot be overlooked as a factor in determining placement. The beta weight for black students is -.351. That is nearly twice the predictor that other races produced and nearly three times higher than Hispanic students (see Table 10). Black students presented for exceptional children's placement comprised 51% ( $n = 105$ ) of all students in the three year cohort. White students followed at a rate of 40% ( $n = 82$ ). Hispanic students were referred at a rate of 5% ( $n = 10$ ) with all other races not represented being referred at a rate of 4% ( $n = 9$ ). See Table 4 for complete information. The gap between white children and children of color in this district is in line with the literature regarding the divide between the two (Gadeyne, 2008; Pugach, 1985).

The beta weight for black students in relation to program placement is -.351 (see Table 10). Since this beta weight is higher than that of other races, black students are more likely to be placed in the exceptional children's program than other races examined; however, as a variable, overall, race was not statistically significant in predicting placement for students.



Table 10

*Variables in the Equation Leading to Placement*

	B Beta weight	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B) Lower Upper	
Race			1.999	3	.573			
Black(1)	-.351	.328	1.144	1	.285	.704	.371	1.339
Hispanic(2)	.225	.762	.087	1	.768	1.253	.281	5.581
Other Races(3)	.313	.769	.166	1	.684	1.368	.303	6.177
Gender(1)	-.684	.299	5.240	1	.022	.505	.281	.906
Retained Once(1)	.705	.335	4.425	1	.035	2.024	1.049	3.903
Free/Reduced Lunch(1)	-.297	.567	.274	1	.601	.743	.245	2.259
Step 1 <sup>a</sup> On Time Entrant			2.428	3	.488			
Late Entrant(1)	.057	.333	.029	1	.864	1.059	.551	2.034
Redshirted Entrant(2)	.148	.466	.101	1	.750	1.160	.465	2.893
Early Entrant(3)	.993	.645	2.367	1	.124	2.699	.762	9.564
Age in Months at Referral	.004	.008	.274	1	.601	1.004	.988	1.021
Constant	.264	.935	.080	1	.778	1.302		

*Note.* a. Variable(s) entered on step 1: race, gender, retained once, free and reduced lunch, entrance age category [on time, late, redshirted, early], age in months at referral.

9. Is socioeconomic status a factor when determining placement for a child in the exceptional children's program?

Examination of Table 10 indicates that the beta weight for free and reduced lunch status, or low SES, is -.297. Students who receive free or reduced lunch are much more likely to be placed in the exceptional children's program than their paid lunch peers. This indicates that 30% of the placement decision for students who receive free and reduced lunch is based on their low socioeconomic status within that socioeconomic status variable.

10. Is kindergarten entrance age a factor when determining placement for a child in the exceptional children's program?

The minimum age at kindergarten entrance was 56 months (4 years 8 months) and the maximum age was 89 months (7 years 5 months). The mean age at kindergarten entry was 64.3 months (5 years 4 months). The minimum age for referral for testing was 59 months (4 years 11 months) and the maximum age was 183 months (15 years 3 months). The mean age at the time of referral for placement into the exceptional children's program was 93.9 months (7 years 9 months). To further illustrate, see Table 4.

While kindergarten entrance age is not a statistically significant factor for early school entrants at the  $p < 0.05$  level, the beta weight for this descriptor (within the entire predictor variable) is .993 (see Table 10). This means that children entering school as early entrants are statistically more likely to be placed into the exceptional children's program. Thinking in terms of practical examples, when entrance age is considered as a complete variable, those students who are considered early entrants have a nine times the likelihood of placement as other Kindergarteners, simply based on their kindergarten entrance age. The analysis indicated that while entrance age, overall, was not a statistically significant factor in determining placement

into the exceptional children's program, when each age category was examined individually, children entering as *early entrants* were highly likely to be referred for testing for the exceptional children's program, and more often placed into the exceptional children's program. It is especially important for practitioners to note the highly correlated relationship between the two regarding early entrants only. The beta weight for late entrants is .057. This small beta weight indicates a very small relationship between this variable and exceptional children's placement. The number does, however, nearly triple for redshirted students which is addressed in the final research question.

11. Is in grade retention a factor when determining placement for a child in the exceptional children's program?

Students never retained in grade represent 68% (n = 141) of referrals to the exceptional children's program while those students having been retained once in grade represent 32% (n = 65) of referrals (see Table 4). The beta weight for this descriptor was .705 indicating a strong relationship between this independent variable and placement in the exceptional children's program (see Table 10). Table 10 illustrates this significance at the  $p < 0.05$  level ( $P = .035$ ).

12. Is beginning school after being age eligible (redshirting) a factor when determining placement for a child in the exceptional children's program?

Beginning school as a redshirted student is not statistically significant at the  $p < 0.05$  level; however, the beta weight is worth noting. The effect size for students beginning school after being age eligible, redshirted, is .148 (see Table 10). This is approximately three times higher than the effect size for late entrants, but about 6.5 times lower than the effect size of early entrants. This is a result of practical significance worth notice of practitioners.

## Summary

While many of the demographic and educational factors selected for analysis did not yield statistically significant relationships, they did yield many points of interest and starting points of conversation for practicing administrators, teachers and significant adults in the lives of children. Of extreme importance causing pause for deliberation is the age at which children should begin kindergarten. This has long been a debate for educators and researchers. Some researchers contend that students that begin as early entrants are at greatest risk for academic failure, or at least lagging behind their own time entrant peers (Ackerman & Barnett, 2005; March, 2005; Meisles, 1992; National Association of Early Childhood Specialists in State Departments of Education, 2000; Shephard & Smith, 1986; Shephard & Smith, 1988). Other researchers contend that children who are intentionally held out of school when age eligible, or redshirted, may initially fare better than their own time peer entrants or even those early entrants; however, these effects diminish drastically or vanish completely within three years (deCos, 1997; Graue & DiPerna, 2000; Malone et al., 2006; March, 2005; Marshall, 2003).

This study examined any relationships between kindergarten entrance age and the referral and placement rate for the exceptional children's program. While kindergarten entrance age certainly impacts exceptional children's placement, the relationship ( $R = .993$ ) indicates a strong likelihood that early entrants, the youngest kindergarten students, when compared to other age entrants in their variable category, are nearly guaranteed placement in the exceptional children's program. Additionally, if a student is retained in grade at least once, his likelihood for placement becomes statistically significant at the  $p < 0.05$  level of .035. Furthermore, 70% of the placement decision, within that variable, can be attributed to the student's previous in grade retention.

Again, readers should take note of the fact that the current study was conducted utilizing a limited number of records from a targeted population. Additionally, the effect size was relatively small ( $R = .106$ ); hence, the results of this study should not be generalized outside of its' context.

## CHAPTER FIVE: CONCLUSION

This study originated because of the researcher's concern that younger students were not experiencing as much success in kindergarten classrooms as their older peers. Younger students enter school with physical, cognitive and behavioral immaturities that can impede the learning process (Ackerman & Barnett, 2005; Horowitz, 2006; Malone, 2006; May & Kundert, 1997; Shepherd & Smith, 1986). The legal age for kindergarten entrance age, the start date of school and the age for compulsory attendance in North Carolina are misaligned; thus creating stratified kindergarten classrooms in the state (de Cos, 1997; May et al., 1995; Shepard & Smith, 1988; Weil, 2007). This stratification imposes many challenges upon students, teachers and administrators alike. Students who struggle to keep up with their peers and display learning needs beyond typical remediation sessions may be considered for testing for the Exceptional Children's Program. In reality, these children may need additional interventions to ensure academic success or another setting more developmentally appropriate to foster independence and skill mastery at the *child's* level.

The passage of *No Child Left Behind* in 2001 put in place higher levels of accountability for teachers across the nation (U.S. Department of Education, 2001). Now not only were states looking into classrooms to see evidences of student learning, but the federal government had a mandate to ensure their view of effective teaching was considered. This new model of accountability, complete with accompanying sanctions for states and districts not meeting the standards, brought pressure into all classrooms that may not have been felt before. Teachers were more aware of the labels associated with their impact on student learning, and increased their demands for content mastery and behavior based on the mean group of students while missing outliers along the way (Ackerman & Barnett, 2005).

The youngest students in kindergarten classrooms are these outliers in many cases. They are the ones that oftentimes missed the core instruction that prepared their peers for instructional rigor. These outliers enter third grade still learning to read instead of reading to learn. Third grade is a pivotal year for grade level proficiency as it is the first year of standardized test administration in North Carolina (North Carolina Public Schools, 2009d).

This study examined students on the fringes of classrooms who were ultimately referred for testing for the exceptional children's program. Specifically, this study examined any relationships between demographic and educational factors of students leading to referral for testing for the exceptional children's program. Additionally, the study examined the student's likelihood for placement into the program.

### **Method of Analysis and Summary of Results**

Logistic regression was selected as the most appropriate model for this study as it enabled the researcher to take existing data on students and determine relationships and likelihoods of outcomes based on those data. Specific demographic and educational data on students were collected and used in the model to determine those factors that, when considered together, were likely to predict referral for testing for the Exceptional Children's Program. Also, those same variables were examined to look at the relationships (correlations) between the factors examined leading to referral for the Exceptional Children's Program.

Demographic and educational factors included for analysis were gender, race, socioeconomic status, kindergarten entrance age, in grade retention and beginning school after being age eligible. Noteworthy relationships were established with race, socioeconomic status, kindergarten entrance age and beginning school after being age eligible.

## Discussion of Findings

This study examined both correlations between variables and likelihood for placement based on identifying variables. There is a correlation between a student's race and the age at which he is referred for testing. The strength of this relationship is .152 and significant at the  $p < 0.05$  level. Additionally, when considering placement into the exceptional children's program, race cannot be ignored although it is not statistically significant factor. The Pearson Correlation for black students and placement into the program is .285. This correlation is two times higher than the relationship between other races and nearly three times higher than Hispanic students. Furthermore, it's important to note that the beta weight for this factor is -.351 indicating that a student's likelihood for placement is higher than that of other races, but not statistically significant when predicting placement.

Research tells us that students from low socioeconomic households enter school less prepared to handle the rigors of the classroom than their more affluent peers. This study yielded a relationship between a student's race and socioeconomic status. The strength of this relationship is -.226, which is statistically significant at the  $p < 0.01$  level. Although socioeconomic status did not yield a statistically significant finding, it should be noted as practically significant in that the beta weight for this predictor variable is -.297 meaning that when socioeconomic status is considered as a complete variable, 30% of a child's placement decision can be attributed to his socioeconomic status. This finding echoes the literature which indicates that students from lower SES homes are more often referred to and placed in the exceptional children's program than their affluent peers (Ackerman & Barnett, 2005; Crosser, 1998; Datar, 2006; deCos, 1997; Graue & DiPerna, 2000; Horowitz et al., 2007; Sadowski, 2006).



Kindergarten entrance age, specifically early entrants, did yield relationships with referral and placement. There is a correlation between kindergarten entrance age and the age at which a student is referred for testing for the exceptional children's program. The strength of this relationship is .182 which is statistically significant at the  $p < 0.01$  level. Additionally, while a statistically significant relationship does not exist regarding program placement, the beta weight for this descriptor is .993. This means that when each age category was analyzed individually, early entrants were more likely placed into the program. Their likelihood for placement was 99%.

The relationship between gender and placement into the exceptional children's program yielded a statistically significant finding which parallels existing research. Research indicates that boys are placed into the exceptional children's program more often than girls (Martin et al., 2004; May et al., 1996). Moreover, Graue and DiPerna (2000) found that boys were 1.4 times more likely to receive exceptional children's services than girls.

Student retention has been dubbed *the biggest disconnect between theory and practice* in education among those that do not routinely employ the practice. Research clearly indicates that retention as a remedial practice is largely ineffective and may even cause more harm than good regarding both emotional and educational outcomes for children (Gay, 2002; Horowitz, 2006; Malone et al., 2006; National Association of Early Childhood Specialists in State Departments of Education, 2000; National Center for Education Statistics, 2000; Shepherd & Smith, 1986; Smith & Shepherd, 1988). In grade retention is significantly correlated to the age at which a student entered school at  $-0.162$  ( $P < 0.05$ ). Furthermore, the beta weight for a student who has been retained once in grade is .705 indicating that a student's likelihood for program placement is 70% when considering in grade retention as a complete variable. Additionally, the level of

statistical significance is .035 ( $P < 0.05$ ). These findings confirmed existing research indicating that students who are retained in grade, thus making them older in their class, are more often referred to and placed in the exceptional children's program (Gay, 2002; Graue & DiPerna, 2000).

### **Implications for Practice**

If the research tells us that starting school early can have negative consequences for children, then why do families continue to do so? Economics and race are the primary reasons supported in the literature. Families with limited finances simply cannot afford another year of childcare and/or cannot afford to stay out of work for an additional year (Datar, 2006; March, 2005; Meisels, 1992; Shepherd & Smith, 1988). Delaying school entry is typically not an option to be considered for low socioeconomic status families. Additionally, minority families often do not consider withholding their children who are age eligible to attend school (Crosser, 1998; deCos, 1997; Frey, 2005; Graue, 2003; Graue & DiPerna, 2000; Horowitz, 2006; Malone et al., 2006; March, 2006; May & Kundert, 1997; Meisels, 1992; National Association of Early Childhood Specialists in State Departments of Education, 2000; National Center for Education Statistics, 2000; Shepherd & Smith, 1986). These families are struggling with meeting basic needs, so considering the educational implications of withholding their children from school when they are legally eligible to attend are not given appropriate consideration.

### **Considerations for Schools**

Families don't typically ask teachers or administrators at kindergarten registration if they have recommendations for the coming year regarding enrollment. If they do, teachers may reluctantly share their anecdotal stories on early entrant performance in kindergarten; however, these stories are seldom supported by research or evidence based outcomes. One consideration

may be for schools to be more proactive in educating parents about potential outcomes for beginning young students in school when they have barely turned five years old prior to the start of kindergarten. Educators should consider hosting outreach community meetings in areas where families are undereducated or reluctant to attend school functions. These same families may also have transportation issues preventing them from attending school sponsored events. These are likely the areas that also house families of a low socioeconomic status. These outreach community meetings should be designed to encourage support while equipping families with tools and options to make the best decisions possible regarding the education of their children.

Ideally, this outreach team would include qualified teachers who could support the families with triangulated data including parent-friendly research conclusions, evidence based outcomes and anecdotal case studies for consideration by families. Those ancillary school personnel who help to support the physical and socio-emotional needs of children should be present as well to field questions i.e. school nurse, counselor, social worker, psychologist. This creates a team of people from the school who have a vested interest in the success of children and presents a united front to families. Conversely, the team should be trained and skilled in dealing with reluctant families or the team approach could be conceived as an ambush which will ultimately benefit no student, no school and no family.

**Possible Alternatives: Transitional Kindergarten Classes and Extended Intervention Time**

Since families can legally enroll children in public school when they are age eligible, what can schools do if the children aren't ready for the rigors of formal schooling but the families are insistent upon their enrollment? One alternative is the development of a *transitional kindergarten classroom*. A student could be holistically evaluated at kindergarten enrollment through observation during testing, assessment data gathered on site and notes taken during a

parent interview. Those data could later be analyzed by a school team to determine placement for the coming year. If it is determined that kindergarten is not the most appropriate educational setting, but the student is too old for enrollment in a pre-kindergarten program then he might be eligible for a *transitional kindergarten classroom*.

This opportunity would enable the child to adjust to the routine and expectations of a kindergarten classroom while building pre-requisite skills to kindergarten success. So often those young students who do not experience success in kindergarten are ones who lack maturity, experiences, opportunities and vocabulary. Additional time will allow all of those things to develop within the structured parameters of a quality educational setting with trained teachers responsible for instruction.

A transitional kindergarten classroom would enable these children to build success with like peers before being challenged socially, emotionally, physically and cognitively by their older classrooms in a traditional kindergarten setting. This program would have to be fluid and taught by those who ascribed to the philosophy and learning theories supported by its nature. Children would have the opportunity to move into a traditional kindergarten classroom at mid-year or at other times as deemed appropriate by the classroom teacher and administration.

School systems could elect to research, identify and implement those strategies that serve as best practices for transitions from home to school or pre-school to kindergarten in order to further ensure success for students. A comprehensive list of research-based best practices could equip teachers and administrators with additional strategies to meet the needs of all learners, not just their more at-risk learners.

In addition to alternative kindergarten classrooms, schools could also consider an *extended wait time* prior to referring children for testing if a learning disability is suspected.

Once thorough testing of the student has been completed along with a complete evaluation of his educational record, including kindergarten entrance age, interventions could begin immediately as with all referrals prior to testing for exceptional children's placement. The difference would be an extended period for interventions to work. This would not only give the student additional time to master the material, but it would also allow the student to age, hence mature, a bit longer. This is in no way an alternative suggestion to testing for placement, but it does allow for the student to have a longer period of exposure to more intensive interventions.

### **Accountability Impact**

North Carolina announced on May 30, 2012 that it was granted a flexibility waiver from key requirements set forth under *No Child Left Behind* (North Carolina Public Schools, 2012). This means that the *all or none* requirements of *No Child Left Behind* were no longer in place regarding accountability in North Carolina. At the recent Summer Leadership Conference for school leaders in North Carolina, Rebecca Garland, Chief Academic Officer of the North Carolina Department of Public Instruction, reported that North Carolina Schools will now be held to meeting set percentages of Annual Measurable Objectives, or AMO's (personal Communication, June 20, 2012). Similar to *No Child Left Behind*, these percentages apply to different sub-groups within the public schools and will increase over time. Another change associated with this waiver is the change in sub-group size from 40, as with *No Child Left Behind*, to 30 with AMO's.

Another huge policy change for public schools in the coming year, provided the current budget as presented is signed into law, is the end to social promotion of third graders as outlined in a revised component of Senate Bill 795 *Excellent Public Schools Act* (North Carolina Association of School Administrators, 2012). This policy change mandates that those third

graders who do not demonstrate grade level proficiency be retained in grade. However, the district superintendent may determine that a student be exempt from the provision if the principal and teacher provide a written statement and documentation supporting the exemption.

So why would the research choose to discuss these changes so far removed from kindergarten students? Both have huge implications for families, schools and the children they share. Young students entering school have an inherent set of challenges from the time they enter the school house doors. When these children get to third grade, the first grade level mandated to take standardized tests (North Carolina Public Schools, 2009d), they may fit into several sub-groups. Consider the children that have been discussed in this paper and placed into the exceptional children's program. Now consider a school with an average testing population of 300+ students. A student could possibly fall into several sub-groups with the reduced number required to constitute a sub-group. The children that are the focus of this study could be Hispanic, ESL (English as a Second Language), receive free and reduced lunch, be considered part of the total school population and be served by the exceptional children's program; hence, his score on the new standardized test would count five times under the new model of accountability. If school districts are aware of the challenges already facing this at risk student, combined with his beginning school as an *early entrant*, it is imperative that a plan be implemented to meet this student's academic needs *before* he reaches third grade to ensure his proficiency. If not, then the new policy change will require in grade retention for a learner that is already struggling within his educational environment. Are these the outcomes we want our students to have?

## **Suggestions for Further Research**

It is recommended that researchers explore reasons why families both withhold their children from school when they are age eligible to attend as well as why families send their children to school as soon as they are age eligible to attend despite their level of readiness to do so. The research gives us some reasons as to why more affluent families choose to withhold their children for an additional year. Reasons cited in research include time to mature and to give the children an advantage over their peers when they do attend (Graue, 2003; Graue & DiPerna, 2000; Malone et al., 2006; Marshall, 2003; May & Kundert, 1997). The research does not, however, explore reasons why those children from low socioeconomic households choose to withhold their children from school when they are age eligible to attend. Are these reasons inherent to culture, familial feelings toward the education system, referrals from friends or schools or other reasons that we are not, but should be, aware of?

Research may also include a longitudinal study following those students who were considered early entrants and were placed into the exceptional children's program and those who were not placed into the exceptional children's program. Efforts to track the academic, social and emotional success of these students could be triangulated with interviews of the caregivers, teachers and students themselves giving perceptions of their formal schooling careers and what challenges they faced from one grade span to the next, concluding with a post-high school interview. For those students who did not graduate, case studies researching all factors contributing to failure to graduate could be analyzed.

A very specific research opportunity would be exploring the varying sub-categories and classifications of exceptional children's programming that students qualified for based on testing. A lens to identify if students who entered school as early entrants, for example, were referred for

testing and placed as speech only, hearing impaired, developmentally delayed, etc...

Furtherance of this research opportunity could be to examine the number of students who tested out of the program and comparing sub-categories and classifications within the group to examine relationships.

### **Summary**

The issue of kindergarten entrance age is complicated by hundreds of factors contributing to a student's success or failure in public school. Educators share mixed opinions on *No Child Left Behind*, but they certainly can't refute the fact that it brought attention to disparities among schools across the nation. The focused attention on accountability over the past decade has demanded consideration from states, districts, schools and classrooms. However, in the quest for increased accountability and performance the individual skills, abilities, talents and gifts of children have not been given the attention these issues deserve.

All children enter school with varying abilities, varying ages and varying backgrounds. It remains the most important job of educators to meet children where they are in order to develop them into students who have the ability to think and reason as they enter the workforce or college. This task appears easy for some and quite difficult for others. Students sometimes need the intervention of specialized exceptional children's services in order to manage public school curriculum. At the same turn, if there are common risk factors that present early in a student's educational career, it becomes incumbent on educators to mitigate those to achieve success.

The model of logistic regression provided a very focused and narrow lens to examine identifying data, and thus identify several risk factors that would likely lead to referral and placement in the exceptional children's program. When considering a student for program referral, educators should know that referral is highly correlated with a student's race and



socioeconomic status. Extended interventions should be employed to ensure that a referral is truly warranted as opposed to providing extra learning time, differentiated instruction and consistent quality instruction.

Kindergarten entrance age, specifically those students classified as *early entrants*, is especially important when considering risk factors for referral and placement into the exceptional children's program. The results demonstrate a strong correlation between entrance age and the age at which a student is referred for testing. Additionally, the results show an especially strong likelihood for program placement for early entrants.

In grade retention should also be considered a risk factor for placement into the exceptional children's program. The age at which a student enters school is significantly correlated with being retained in grade. Additionally, there is a strong likelihood of special program placement for students who have been retained in grade. These risk factors, when considered independently or collectively, demonstrate the need for extra interventions prior to referral and placement into the exceptional children's program.

Transitional kindergarten classes and extended intervention times are two alternatives to consider and employ prior to referral. The opportunities for additional learning time, differentiated instruction, non-traditional settings and highly qualified teachers with educational philosophies and beliefs that support these alternatives could surely mean that more children could experience higher levels of educational attainment despite multiple risk factors.

Opportunities for further research include a deeper understanding of redshirting and the reasons families decide to exercise this right and how those reasons differ between socioeconomic stratum. Another study avenue includes the examination of any long term social, educational or psychological benefits for early entrants both placed and not placed into the

exceptional children's program. Finally, research exploring the placement of students into sub-categories and classifications under the broad category of exceptional children could be conducted based on entrance ages. The rates of program exit for students could be explored as well.

While schools continuously work to produce 21<sup>st</sup> century learners and leaders, they are also working to produce graduates that are college or career ready. By continuing to add to existing research on best practices to meet the needs of all learners, early identification of risk factors that hinder learning and ways to lessen the effects of those risk factors on educational attainment and student success, educators can continue to equip American students with the skills needed to be globally competitive in our ever-changing society.

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## APPENDIX A: PERMISSION LETTER

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CURRICULUM

PAGE 01/01

### Richmond County Schools

Post Office Drawer 1259  
Hamlet, North Carolina 28345

Dr. Michael D. Perry  
Assistant Superintendent

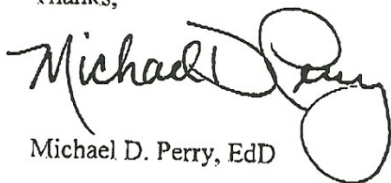
PHONE (910) 582-5860  
FAX (910) 582-7874

To the Officials  
East Carolina University

Richmond County Schools is proud to support one of its employees, Mrs. Wendy Jordon. Mrs. Jordon asked and received permission to conduct research using data from the Richmond County School system.

Again, Richmond County Schools has granted permission and looks forward to assisting Mrs. Jordon in every capacity possible for her to have a successful outcome in this endeavor.

Thanks,

  
Michael D. Perry, EdD

## APPENDIX B: INSTITUTIONAL REVIEW BOARD APPROVAL

### IRB: Study Correspondence Letter

[umclrb@ecu.edu](mailto:umclrb@ecu.edu)

Sent: Monday, April 02, 2012 8:53 AM

TO: Jordan, Wendy K

EAST CAROLINA UNIVERSITY  
University & Medical Center Institutional Review Board Office  
1L-09 Brody Medical Sciences Building\* Mail Stop 682  
600 Moye Boulevard \* Greenville, NC 27834  
Office 252-744-2914 • Fax 252-744-2284 • [www.ecu.edu/irb](http://www.ecu.edu/irb)

### Notification of Initial Approval; Expedited

**From:** Socle/Behaviors IRB  
**To:** Wendy Jordan  
**CC:** 31m McDowelle  
**Date:** 4/2/2012  
**Re:** UMCIRB,11-QQ1514  
The Relationship Between Kindergarten Entrance Age and the Referral and Placement Rate Into the exceptional Children's Program

I am pleased to Inform you that your Expedited Application was approved. Approval of the study is for the period of 4/1/2012 to 3/31/2013. The research study Is eligible for review under expedited category #5. The Chairperson (or designee) deemed this study no more than minimal risk.

Changes to this approved research may not be Initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The Investigator must submit a continuing review/closure application to the UMCIRB prior to the date of study expiration. The Investigator must adhere to ell reporting requirements for this study.

The approval Includes the following Items;

Name	Description
There are no items to display	

The Chairperson (or designee) does not have a potential for conflict of Interest on this study