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Age of Kindergarten Entry and Rate of Specific Learning Disabilities

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AGE OF KINDERGARTEN ENTRY AND RATE OF SPECIFIC LEARNING
DISABILITIES

A thesis submitted to
the Graduate College of
Marshall University
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the requirements for the degree of
Education Specialist

In
School Psychology
by

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Approved by

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APPROVAL OF THESIS

We, the faculty supervising the work of Elizabeth A. Crum, affirm that the thesis, Age of Kindergarten Entry and Rate of Specific Learning Disabilities, meets the high academic standards for original scholarship and creative work established by the School Psychology Program and the Graduate College of Marshall University. This work also conforms to the editorial standards of our discipline and the Graduate College of Marshall University. With our signatures, we approve the manuscript for publication.

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ABSTRACT

Kindergarten age eligibility requirements vary from state to state; however, school districts typically admit children into kindergarten in the fall following a student's fifth birthday. Research on the outcomes of five-year-old children and children whose entry was delayed until age six is contradictory. The current study was conducted to add to the existing literature to assist families and policy makers with decision making regarding appropriate kindergarten entry age. The sample included 541 second through seventh grade students from a small rural school district. Actual and predicted counts of students who were later found eligible for specific learning disabilities were examined among children with delayed entry as compared to children who entered kindergarten as five-year-olds. A Fisher's Exact test revealed no significant difference in the values any more than would be expected due to chance. Further studies should focus on increasing the sample size by adding other larger Ohio school districts, conducting longitudinal studies that follow a cohort of first grade students throughout public education, or by researching districts with higher socio-economic statuses.

CHAPTER 1

LITERATURE REVIEW

Introduction

Historically, kindergarten in the United States has been a place where five-year-old children would go to “get ready” for formal schooling. In recent years, the focus has been on increasing a child’s readiness for school and what that “readiness” entails. Delayed entry into kindergarten is often a critical decision made by both parents and school systems that can have long lasting implications for the child’s development (Winsler et al., 2012).

Kindergarten age eligibility requirements vary state to state; however, most admit children into kindergarten in the fall following a student’s fifth birthday. There is often disagreement as to the date on or before which a child must turn five in order to be considered kindergarten eligible. In 2001, the state of Ohio gave individual school districts the choice to either adopt the first day of August or the thirtieth day of September as the date by which a child must be five years of age to be admitted into kindergarten. Compulsory school age is considered to be six statewide. A parent can request early admission if the child will turn five after the district’s kindergarten entrance due date and before January 1. If early entry is requested, the district will then assess the child to determine kindergarten readiness (ODE, 2014). The Ohio school district utilized in this study has determined that students who turn five on or before September 30th each year are eligible for entry into kindergarten that fall. If the child turns five following that date, the parents may request an evaluation for early entry qualification. Based on age of entry cutoff dates, delayed school entry and retention, there is a potential for a difference of 24 months for students in the same grade (Najarro, 2012).

Educators, policy makers, and parents often have strong beliefs about age of kindergarten entry and associated readiness factors. Educators, particularly primary teachers, staunchly defend the importance of self-regulation and social skills when considering kindergarten readiness. Culture and economics primarily drive parental perceptions of the appropriate age for their children to enter kindergarten.

With the variability among states and even among the individual school districts within each state, along with the option of early entrance, parents often struggle with the decision of when to enter their children into kindergarten. What are the potential advantages and disadvantages of enrolling a child early verses entry at the age of five? What are the advantages and disadvantages of waiting until a child turns six to begin kindergarten? Are there any long-term outcomes related to this decision? The purpose of this study is to determine if there is a relationship between age of entrance into kindergarten and later special education identification under the category of a specific learning disability.

Self-Regulation Ability

Self-regulation involves cognitive processes such as sustaining attention, regulating emotions, and on-task behavior (Matthews, 2008). Hubert, Guimard, Florin, and Tracy (2015) examined the contribution of self-regulation skills in predicting literacy, word recognition, and mathematical performance and found a significant relationship between self-regulation and math skills. Bronson (2000) noted that because self-regulation involves both voluntary and involuntary processes, the age of a child can be a predictor of how well the child can self-regulate. Between preschool, kindergarten, first grade and fifth grade students, the greatest mixture of attention span rhythms fall within the five and six-year-old students, the age of most kindergarten students (Javier and Testu, 2007). This variability in the regulation of attention span rhythms may have a

significant impact on a student's ability to learn. This suggests that self-regulation is essential for successful kindergarten achievement.

Social Skill Considerations

Social skills are also a factor to consider in determining at what age a child is kindergarten ready. According to Katz (2000), delayed entry increases a child's social confidence with classmates in the short-term, as older children tend to communicate verbally much better than younger children. This increase in the ability to retain information, follow directions, problem solve, and demonstrate control of emotions and behaviors and the shifting of attention increases the likelihood that a child will be successful in kindergarten (Matthews, 2008).

The National Institute of Child Health and Human Development (2007) studied the data of more than 900 children who were participating in a study of early child care in order to determine the effect of age of entry into kindergarten on early elementary school functioning. Researchers controlled for family background and child care experiences for the first 54 months of life. A repeated measures design was utilized examining the achievement and socio-emotional development of these children. This study revealed found that age of entry into kindergarten was unrelated to socioemotional development and that age did not have an effect on academic achievement, suggesting that other factors play a larger role in achievement success than age. However, other studies indicated that children whose entry into kindergarten has been delayed receive less negative feedback from peers and teachers (West, Meek & Hurst, 2000).

Cultural and Economic Considerations

Low income families often do not have the financial resources to delay entry and must enroll their students as soon as they are at the eligible age. Lin, Freeman, and Chu's (2009) results show that delayed entry students are often from families that have more financial resources for their children to attend additional preschool. In addition, Malone, West, Denton, and Park (2006) found that children whose entry was delayed were more likely to be male, White, and less likely to have attended preschool. Conversely, Elder and Lubotsky (2009) indicated that children from poorer families and who are not adequately stimulated at home are poorly served by delaying kindergarten entry. In addition, they maintain that children from higher income families that enter kindergarten later are typically exposed to more pre-kindergarten experiences. This exacerbates the differences in school performance and academic achievement test scores between higher income and economically disadvantaged students. Winsler et al. (2012) examined the prevalence and predictors of delayed school entry from a large sample of ethnically diverse, low income children. They examined the extent to which individual child and family demographics including age, gender, English Language Learner (ELL) and ethnicity were associated with delayed kindergarten entry. Overall, delayed entry into kindergarten was very rare for children attending public school pre-kindergarten programs or those receiving subsidized child care. Voluntarily delaying kindergarten entry was not prevalent among the at-risk sample of ethnically diverse children largely in poverty.

Learning Outcomes Related to Age of Kindergarten Entry into Kindergarten

Positive outcomes of delayed entry. Several studies have examined learning outcomes related to the age of kindergarten entry. Dagli and Jones (2013) examined the relationship between early, on-time, or delayed kindergarten enrollment and children's mathematics and reading achievement from kindergarten through third grade. Results indicated that children

whose kindergarten enrollment was delayed had the highest scores in reading and mathematics, followed by children who entered on-time. Dobkin and Ferreira (2007) reported that students who entered school early had higher educational attainment in adulthood; however, their academic performance was lower while in school. West, Meek and Hurst (2000) found that children whose entry was delayed were half as likely as their peers to be retained. However, they also found that the benefits of school performance between delayed-entry students and other students were small at first and virtually non-existent two years later. Malone et al. (2006) examined delayed entry students and their reading and math achievement at the end of first grade. Their data showed when factors such as poverty status, kindergarten type, and gender were controlled, the delayed entry students scored higher in reading and phonics skills but lower in overall math knowledge than typical first graders. Huang and Invernizzi (2012) compared 405 students (the older group and the youngest group) from kindergarten through second grade on early literacy outcomes. Their findings established that the youngest students scored lower at the beginning of kindergarten than the oldest students, although the early age achievement gap narrowed over time but did not close completely by the end of the second grade. Similarly, several other studies corroborate the positive effects of delayed entry dissipate by the third and fourth grade (Bickel, Zigmond & Strayhorn, 2004; Stipek & Byler, 2001). Katz (2000) also found that as delayed entry students move from first to third grade, their academic achievement is equal to their peers; however, these students had fewer behavioral issues and special education referrals. Conversely, Ponzio and Scoppa (2014) utilized data for 9, 13, and 15 year old students from three data sets to investigate whether age of school entry affects the school performance of children at the fourth, eighth, and tenth grade levels. They found that younger children score substantially lower than older peers at each grade level.

Positive outcomes of early entry. Some research conversely negates the short-term effects of academic advantage of delayed entry into kindergarten (Grissom, 2004; Martin, 2009; Stipek & Byler, 2001), while other contradictory studies indicate that early entry into formal education, rather than late, has benefits. A Norwegian study by Black, Devereux, and Salvanes (2008) found children who enter early had higher IQ scores at the age of 18. The National Institute of Child Health and Human Development (2007) found that early entry students had higher scores on the Letter-Word Recognition subtest of the Woodcock-Johnson Tests of Achievement. Another study indicated that younger children often have higher academic achievement. Elder and Lubotsky (2009) argued the age related differences in early school performance has more to do with what skills the children accumulated prior to beginning school and that these differences fade as children move through school. In addition, they found that the long-term consequences of delayed entry (lost future working years, additional child care costs, and potentially reduced educational attainment) are not worth the potential short term benefits. This was especially true for those students who had fewer educational opportunities outside of the public school system.

Long and Bonds-Raacke (2012) examined the age of kindergarten entry and participation and performance on the Accelerated Reader (AR) program. Their results revealed no significant differences in performance between the younger and older students in each grade until these students reached the fourth grade. In the fourth grade, results suggested a positive correlation in the number of quizzes both taken and passed. This contradicts studies suggesting that the benefits of delayed entry dissipate by the third and fourth grade (Bickel, Zigmond & Strayhorn, 2004; Stipek & Byler, 2001).

Grissom (2004) found that there was a positive linear relationship between age and achievement in elementary school; however, the difference in average test scores between the oldest and youngest students is not great, and by the time that students reach the tenth grade, the positive linear relationship has disappeared. These results argue against delaying school entry in order to improve school achievement. Lincove and Painter's (2006) study also suggested that delaying kindergarten does not create any long-term advantages for students.

Martin (2009) examined the effects of age within cohort, grade retention, and delayed school entry on motivation, engagement, and performance in high school. Results indicated that older than cohort students in high school experienced some academic disadvantages in motivation, engagement and performance while their age appropriate peers fared best.

Achievement outcomes. The contradictory outcomes of studies related to age of entry into kindergarten has led to further studies related to the age of entry into kindergarten and the potential for later specific learning disability diagnoses. Martin, Foels, Clanton, and Moon (2004) examined standardized achievement levels and rates of diagnoses for Specific Learning Disabilities (SLD) for children born in the summer verses those born in the fall. They found that those children with summer birthdays had scores that were reliably lower in the areas of reading, math and science when compared to their fall born peers. There was also a strong relationship between season of birth and the rate of SLD diagnosis, with summer born children having higher rates of SLD than their peers. Oshima and Domaleski (2006) also evaluated the difference in performance for younger children (summer birthdays) and older children (fall birthdays). For kindergarten students, a large difference in reading, mathematics, and general knowledge existed between the two groups at the beginning of the school year but narrowed in the spring of

kindergarten. There was a rapid decrease in academic differences between the two groups through the third grade.

Najarro's (2012) dissertation examined kindergarten age of entry using early and late birthdays and the relationship between this factor and scores of California fourth grade students on the California State Tests. The results of this study suggested that there was a significant difference in reading comprehension and math scores based on school entry age. There was also a significant relationship between entrance age and retention status but not in special education classification. However, Dhuey and Lipscomb (2010) found that an additional month of relative age decreases the likelihood of receiving special education services by two to five percent. They suggested that relatively young students are over-referred for psycho-educational evaluation. Additionally, Fletcher and Kim (2016) examined the effects of a one month earlier kindergarten cutoff date and performance on state-level achievement assessment scores. These findings provided evidence that an earlier kindergarten cutoff date by as little as one month can increase a child's performance on state-level tests of achievement.

Statement of the Problem

There is much contradictory evidence in the literature regarding the appropriate age of entry into kindergarten. Some studies support delaying entry, relating delayed entry to greater academic achievement. Other studies purport no benefit to delayed entry, or even, negative academic outcomes as a consequence of delayed entry. One possible negative outcome of early or delayed kindergarten entry could be the identification of a student as having a Specific Learning Disability. The Ohio Department of Education (ODE, 2012) allows qualification for special education under one of fourteen categories: (01) Multiple Disabilities (Other than Deaf-Blind), (02) Deaf-Blindness, (03) Deafness (Hearing Impairment), (04) Visual Impairment, (05)

Speech and Language Impairment, (06) Orthopedic Impairment, (08) Emotional Disturbance, (09) Cognitive Disabilities, (10) Specific Learning Disabilities, (12) Autism, (13) Traumatic Brain Injury, (14) Other Health Impairment Major, (15) Other Health Impairment Minor, and (16) Developmental Delay. IDEA (2004) and the Ohio Department of Education (ODE) (2012) defines a specific learning disability as a disorder in which the cognitive processes used in understanding or in using spoken or written language result in a child's inability to listen, think, speak, read, write, spell, or do mathematical calculations. These learning issues cannot be related to other issues such as hearing, vision, behavior, culture, or economic disadvantages. This study seeks to add to the existing literature on this topic in order to help provide guidance to parents, educators and school officials when making decisions regarding the optimal age for entry into kindergarten.

Hypothesis. A student's age of entry into kindergarten is correlated to later special education identification under the category of SLD.

CHAPTER 2

METHOD

Participants

For the purpose of this study, a rural Ohio school district provided data from a total of 901 second through seventh grade students. Data obtained included date of entry into kindergarten, age of entry into kindergarten, gender, and grade of each child in second through seventh grade. Individuals with a disability other than a Specific Learning Disability (SLD) or children who did not attend Kindergarten in the school district were omitted from this study leaving 541 five and six year old students in second through seventh grade who either had a learning disability or did not. In order to maintain students' privacy, the district did not provide student names, unique student identifiers (e.g. social security number), or other school identifiers.

The rural Ohio school district utilized in this study has approximately 1,940 students with 57.75% of children qualifying for Free and Reduced School lunch (NSLP, 2015). An applicant is considered eligible for free meal benefits if (a) the household income is at or less than 130% of the USDA established poverty guidelines; (b) the student receives food stamps; (c) the family qualifies for Ohio Works First benefits. Applicants are considered eligible for the reduced lunch program if the household income is at or less than 185% of the USDA established poverty guidelines. The percentage of free and reduced lunch in the district can be used as an indicator of poverty. Therefore, we can assume that more than 50% of study participants come from a low socio-economic background.

Materials

The Education Management Information System (EMIS) coordinator of the participating school district provided birth date, gender, current grade, and special education status. The kindergarten entry date was then located by an employee of the school district through the Infinite Campus operating system.

Procedure

Subject data was examined to identify age of entrance into Kindergarten and whether the students qualified for SLD. The rates of SLD were then analyzed to determine if age of entry into Kindergarten resulted in more SLD outcomes than would be expected due to random variance. For the purpose of this study, age was used as a nominal variable; categories included (a) the ages of five, and six and (b) SLD diagnosis or no SLD diagnosis.

Analysis

The actual results were then calculated and a Fisher's Exact test, a Chi-Square like test were conducted in order to determine if the actual results were more than would be expected due to chance. A Fisher's Exact test is a statistical test used in the analysis of contingency tables. This test can be used for all sample sizes and is useful for examining the significance of the association between two classifications.

CHAPTER 3

RESULTS

This study hypothesized that a student's age of entry into kindergarten is correlated to later special education identification under the category of a Specific Learning Disability (SLD). Based on data analysis, out of 514 total students in grades second through seventh who began kindergarten at the age of five, 489 students would not be identified as SLD and 24.7 would be. The actual results were consistent with this with 489 students were not identified SLD while 25 students were. A total of 27 students entered kindergarten at six and it was expected that 25.7 students would not be identified as SLD while one would. Again the actual results were consistent with the expected results; 26 students were not identified for SLD and one was identified. Given the overall counts, there was no significant relationship between the age of entry into kindergarten and the rate of SLD.

Table 1. Actual Values

Age	No SLD	Yes SLD	Total
5	489	25	514
6	26	1	27
Total	515	26	541

Table 2. Expected Values

Age	No SLD	Yes SLD	Total
5	489.3	24.7	514
6	25.7	1.3	27
Total	515	26	541

The results of the data did not support the hypothesis that age of entry is related to SLD diagnosis. A Fisher's Exact test compared age of kindergarten entry and the frequency of SLD diagnosis. There was not a significant interaction between the categories (p -value = 0.623). It is

with 95% accuracy that there is not a difference in the values any more than would be expected due to chance.

CHAPTER 4

DISCUSSION

Educators, policy makers, and parents often have strong beliefs about age of kindergarten entry and associated readiness factors. Educators, particularly primary teachers, staunchly defend the importance of self-regulation and social skills when considering kindergarten readiness. Culture and economics conversely drive parental perceptions of the appropriate age for their children to enter Kindergarten. This study sought to add to the existing literature on outcomes related to age of entry into Kindergarten to assist parents that may be concerned with the effects of early or late kindergarten entry on academic outcomes. In addition, the findings of this study can be utilized for educational policy reform with regard to the optimal age of kindergarten entry as well as mandated age of entry into formal education.

The results of this research were similar to Najarro's (2012) findings wherein the investigator identified no significant relationship between age of entry and special education classification. However, these results are dissimilar to those studies that suggest the existence of a relationship between age of entry and SLD diagnosis (Dhuey & Lipscomb, 2010; Martin, Foels, Clanton & Moon, 2004).

While a difference was not found in the relationship between age of kindergarten entry and SLD, socioeconomic status may be a confounding variable in this particular sample. Research indicates that voluntarily delaying kindergarten entry most often occurs with males (Malone, West, Denton, & Park, 2006) and from families that have more financial resources for their children to attend additional preschool (Lin, Freeman, & Chu, 2009). In addition, low income families often do not have the financial resources to delay kindergarten entry and must enroll their children as soon as they are eligible (Winsler et al., 2012). The school district

examined in this study has a large percentage of children eligible for free and reduced lunch; therefore, it is likely that the majority of families in this district may not have had the financial resources to delay entry into kindergarten. This resulted in a comparison group of six-year-olds which was too small. Including more affluent parents who have more opportunity to delay entry kindergarten and obtain additional preschool (Lin, Freeman, & Chu, 2009) or to provide more exposure to prekindergarten experiences (Elder & Lubotsky, 2009) may lead to a more reasonable comparison group and produce a different result.

In addition, a difference may be found by increasing the sample size of the study and by including larger, more urban school districts. This increase in population size to include a greater portion of students could eliminate the inadequate cell size and find a significant relationship between kindergarten entry age and SLD.

Limitations and Suggestions for Future Research

As this study progressed, several limitations were identified. First, this study began with data from 901 students. However, due to the exclusionary factors of attrition and the lack of access to kindergarten entry age for those students who did not attend kindergarten in the district being studied, the sample size decreased to 541 students with only a small number of students entering kindergarten at the age of six. Utilizing a school district with a much larger total enrollment of multiple smaller districts may control for this limitation. In addition, using a smaller grade ratio (perhaps second through fifth grade students) may reduce incomplete data due to transiency.

Second, individual student files often contain information not included in electronic databases that store student information. If the researcher had permission to access student files, a larger number of kindergarten entry dates could have been obtained for use in this study.

Third, expanding the study to include more affluent and ethnically diverse communities may increase the generalization of the results. This would make the study more relevant to a larger number of people. This also may have helped increase the number of six year old students to provide a more balanced sample.

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