

Ready or Not: Do Preschool Experiences Impact Early Literacy Skills?

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Abstract

This study examined the role of the early childhood experiences that students are bringing with them as they enter Kindergarten, and investigated the impact of various types of early childhood experiences on student performance and outcomes on an early literacy tool. Researchers intended to measure how kindergartners in an Upper Midwestern, suburban school district, who have participated in one or more early childhood programs, perform on *Dynamic Indicators of Basic Early Learning Skills* (DIBELS) when compared to kindergartners who have had no early childhood program exposure. Additionally, researchers considered whether there was statistically significant variation in early literacy skills (DIBELS) depending on type(s) of early childhood experiences. Data analysis of results revealed that all students had some type of early childhood experience, but no statistically significant variation in the types of experiences was found. The researchers feel that due to the multiple limitations faced during all phases of the research process, results should be viewed as a starting point to guide further research in the area of early literacy skills and early childhood educational experiences.

Keywords: early childhood, school readiness, early literacy, Kindergarten

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With the current societal focus on educational standards and data-driven approaches to education today, it is becoming vital to consider what contributes to school readiness. The authors have adopted the National Association of School Psychologists (NASP) definition of school readiness, which states, “The concept of school readiness typically refers to the child’s attainment of a certain set of emotional, behavioral, and cognitive skills needed to learn, work, and function successfully in school” (Rafoth, Buchenauer, Crissman, & Halko, 2004). As a greater number of children participate in some type of early childhood programming, it becomes pertinent to ask if skills acquired prior to kindergarten are predictors of future academic ability.

Socioemotional and Socioeconomic Factors as Predictors of School Readiness

The social-emotional and socioeconomic factors that exist within and surround children as they develop have the potential to be predictors of school readiness. Research has shown that social skills and academic experiences may equally influence a child’s early literacy skills. Many educators have pondered the question, if a child comes from a low income household or has lesser socialization skills than his/her peers, are they less likely to be prepared for what kindergarten has in store? According to a study completed by West, Denton and Reaney in 2000, “Children with fewer risk factors (which included low maternal education, single-parent family status, utilization of social assistance, and home language other than English) were more likely to arrive at kindergarten with better cognitive and reading skills” (Duku and Janus, p. 378). Olson (2009) discussed how welfare participation was also shown to be a predictor of language exposure in young children. The average 4-year-old in a family receiving welfare has heard 13 million

spoken words, compared to those 26 million from a work-class (i.e., “Blue Collar”) family (p. 1). The child from the working class family hears twice as many words, already putting their vocabulary and/or language expression far ahead of a family living on welfare.

Duku and Janus also found the five socioeconomic status (SES) predictors utilized in their study were all linked very closely with school readiness. Scores on an Early Childhood Development Instrument were higher when the family income was higher, the head of household was well educated, parents’ health was good, and there were two parents in the household (p. 309). This study is certainly not the only of its kind to seek correlations of some kind between social-emotional and socioeconomic factors and school readiness/achievement (Fantuzzo et al., 2007).

Also examined in the literature was the issue of specific socioemotional behaviors as related to scores on the Early Screening Inventory- Kindergarten (ESI-K). According to Fantuzzo et al., “Early in the year, children demonstrating the highest levels of disengaged behavior, compared to their peers, were 13 more likely to fall in the at-risk category on the ESI-K...early difficulties in engagement...uniquely predicted future difficulties” (p. 57). As we can see, from the above mentioned research, there are findings that claim a child’s academic success rests largely upon the characteristics they possess before entering school. As a child is living each day in a specific environment that has its own unique set of qualities, they will be influenced and shaped by what they see and hear and experience.

The research that has been conducted in the past attempts to separate fact from fiction to reveal the true predictors of academic success in children in terms of those

social and economic factors. While much of the research does find that connection, there is also research that finds no such correlation (Duncan et al., 2007).

Duncan et al. focused on social-emotional factors in children and whether or not they were predictors of achievement within the school setting. Although they found modest correlation between attention skills and achievement outcomes, conversely, problem behaviors and social skills were found to be irrelevant in making such predictions (p. 1443). In actuality, the researchers found that, “one child’s socioemotional behavior, in particular externalizing behaviors, may affect other students’ achievement more than the child’s own individual achievement” (p. 1443). So, as students may experience certain challenges in early childhood, according to research they have the resiliency and potential to overcome those hurdles and achieve at the level of their peers who did not share in those early childhood challenges.

Researchers in this area have explored both sides of the issue without consistent results across the board. It is clear there is some correlation between socioeconomic and socio-emotional factors and school readiness, however to what degree is not yet completely understood. There is a need for further research in this area. There is vast research on school readiness and academic markers as predictors. This research must extend beyond cognitive ability to measure environmental, emotional, and SES characteristics as they relate to a child’s preparedness for kindergarten and the school experience.

Effects/Types of Early Childhood Experiences as Predictors for School Readiness

Children arrive at school with varying degrees of early childhood experiences. It is pertinent to know and understand the impact early social, emotional, and academic

encounters have on a child's school readiness. Fontaine, Grafwallner, and Torre (2006) indicate over half (approximately 51%) of children lag behind in cognitive, emotional, and/or social development. Becoming aware of quality, early childhood programs will allow for education professionals to better prepare curriculum and resources in order to foster growth for all children preparing to enter school. Fontaine et al. (2004) found that, "Quality early learning experiences contribute to the healthy development and well-being of children" (p. 99).

A highly debatable child care issue is that of center-based care vs. parental care and which has the largest impact on a child's development and school readiness. Olson (2007) reported "participation in intensive, high-quality early childhood education can improve school readiness" (p. 1). Through a cross-sectional study, Hickman (2006) found that children who had been involved in center care a year previous to beginning kindergarten demonstrated superior cognitive skills (specifically math and reading) over children who received parental care. They also displayed fewer internalized problems (e.g., sad, lonely, low self-esteem). Conversely, children who received parental care displayed more competent social skills than center-based children.

Hickman (2006) found that center-based and parental outcomes on academic and social success varied by sex. Girls were found to thrive in center-based care by developing higher levels of self-expression and language development than those in parental (home) care, while boys were better prepared for school if in parental care.

Quality services are critical to school readiness; however, early services are also found to be important to academic, social, and emotional success. Hickman also found that children who entered daycare (center-based) before the age of one experienced

higher cognitive outcomes and better socio-emotional development than those who entered at a later age or had parental care. Fontaine et al. (2004) suggest early services indicate benefits for all students, especially to those children who are considered high-risk (e.g., low-income families, English as a second language, children with special needs, those living in poverty, etc.). The achievement gap between students considered at-risk and those considered not to be is reduced if early services are provided.

More in-depth analysis and effects of early childhood services need to be investigated in order to avoid premature assumptions. It is necessary for researchers to continue exploring predictive factors for school readiness, home vs. center-based care, and gender implications in order to obtain more consistent findings. In general, present-day research has indicated that there is an apparent, positive correlation for children who attend quality center-based care previous to entering kindergarten. However, the quality of care, early exposure to services, programs and curriculum employed, and other influential factors must be further examined.

The Use of School Readiness Screening Tools

The current research study is concerned with student performance on a school readiness assessment in the initial weeks of Kindergarten, and how student performance relates to the types of early childhood educational experiences they have had. In reviewing current research of school readiness assessment, it appears there is a wide range of tools available to screen for cognitive abilities, reading and language comprehension, perceptual/motor development, socio-emotional and behavioral functioning, and overall child readiness for Kindergarten entry.

Screening tools are both standardized and non-standardized and are most often used to assess readiness for classroom learning and need for early preventative intervention services. Assessment is also used for education placement purposes and gathering information to understand the nature of the relationship between early educational experiences, namely preschool, and early school adjustment. The current researchers intend to use similar information gathered from a Midwestern suburban school district.

In an article by Pianta and McCoy (1997), the authors speak to the predictive validity of using school readiness screening tools. The authors discuss current literature on the link between screening tools and later academic outcomes. The majority of research findings on this topic have found correlations between performance on assessment and readiness to learn by using single-outcome screeners. This means the tools used only address one aspect of a student's competencies, usually cognitive abilities or reading and language comprehension. This does not, however, address all aspects of a child's development or all necessary skills needed to be successful at school entry, as single-outcome tools often do not account for socio-emotional development. Pianta and McCoy also suggest that the concept of *academic difficulties* and *school readiness* are social constructs that vary depending on the view of those providing assessments or conducting research, making comparisons between studies unclear. The authors also state that school readiness assessment is usually implemented for the purpose of revealing academic difficulties, rather than those characteristics that contribute to school readiness.

Although there are varying types of screeners used to assess school readiness, many of the academic skills and readiness needed to be successful in school do not emerge until after Kindergarten. Because of this, students are often screened for *pre-academic skills*

such as ability to copy shapes and recognize letters. Pianta and McCoy, in agreement with the authors of this research study, believe that pre-academic skills most commonly assessed do not provide a clear picture of the students overall development, and should be cautioned when considering educational placement or need for preventative intervention services.

Pianta and McCoy performed a two year study focused on the use of multiple predictor and outcome measures, both standardized and non-standardized, to identify variables that were predictive of various forms of school difficulties, and broadly any school problems, at school entry. The researchers utilized the *Stanford-Binet Intelligence Scale*, the *Fluharty Preschool Language Scale*, subscales from *McCarthy Scales of Children's Abilities*, and the *Early School Behavior Scale*, and compared two cohorts of students. The researchers also observed students while administering the *Stanford-Binet* to determine task orientation skills. A parent interview was also used to determine socio-demographic factors, such as highest level of maternal education. Grade retention and placement in special education services was also recorded and taken into account.

Results of this study revealed that the use of a multivariate screening battery was beneficial in determining predictors of school difficulty among the two cohorts. Maternal education, fine motor, and cognitive abilities were consistent predictors of various forms of school difficulty. Interestingly enough, ethnicity and gender, which are often referred to in research when discussing school difficulties, were not consistent or primary predictors of school problems. The multivariate battery was also helpful in identifying children with “any school problem” not just those that appeared on one tool or in one developmental area. More specifically, this refers to those children that are at-risk for

school difficulties. The authors suggest that this finding may provide support for the idea that school problems are “multifaceted and not limited to a single performance area (e.g. academic achievement test scores)” (p. 19).

Pianta and McCoy found some surprising findings among the second cohort with regard to predicting any school problem; sensitivity of the prediction equation increased. This indicates the “robustness of the multivariate equation for this multifaceted outcome, and it suggests that validity of a screening battery may be better when a more inclusive, multifaceted outcome is considered” (p. 19). Judging by the findings from this study, it seems most beneficial to use an array of screening tools to really gage the overall student development and readiness to learn.

Janus and Offord (2007) developed a similar, multivariate school readiness assessment tool; the *Early Developmental Instrument (EDI)*. These researchers wanted to develop an informative, inexpensive, and psychometrically sound tool to assess outcomes of early development as they relate to school readiness. They were concerned with the current method regarding early school interventions, usually implemented based on individual diagnostics with serious or clinical student cases. This addresses only those children with severe, visible impairments. The researchers support the idea of providing broad, if not universal, assessment of children’s development at school entry. Like Pianta and McCoy, Janus and Offord also point out that school readiness measures are usually reviewed and validated from the perspective of how well they can identify risk for school failure, not how adequately they reflect the concept of school readiness, and often do not include measures of socio-emotional functioning. The EDI was utilized in two studies with a sample size of 16,000 Kindergarteners, to evaluate the measures’ psychometric

properties. This measure contains five domains; physical health/well being, competence, emotional maturity, language and communication, and cognitive development. The research results revealed that this newly developed tool had high internal consistency (0.84 to 0.96), moderate to high inter-rater reliability (0.53 to 0.80), and high test-retest reliability (0.82 to 0.94). In comparing the EDI to the *Child Behavior Checklist (CBCL)*, a commonly used measure of socio-emotional behavioral functioning, it was found that the two have many similarities in terms of identifying behavioral problems. The EDI, however, considers scores within a range that do not necessarily denote a clinical problem, unlike the CBCL. It is possible that the EDI could be a useful addition to the spectrum of measures available to determine children's behavior and school adjustment. The EDI has some major advantages, one being its combination of several domain specific scales into one comprehensive tool. This aspect, coupled with its exceptional reliability and validity measures, would be a major benefit for the purposes of screening all incoming Kindergarteners, similar to the screening done in the Hudson School District. Janus and Offord's study further supports the use of multiple outcome measures to assess the whole child at school entry, as well as gain valuable information about early childhood experiences and predictors for later academic success.

General Purpose

The goal of this research is to decipher whether early educational experiences prepare students to be more readily able to learn in the Kindergarten environment, and how well a reading assessment tool can predict readiness for learning, and later academic achievement. In a partnership with a suburban school district in the upper Midwest, preschool predictors of kindergarten outcomes will be analyzed. More specifically, the

authors will explore the presence or absence of educational experience prior to entering kindergarten. The questions to be addressed are: how do kindergarteners in a suburban upper Midwest school district, who have participated in one or more early childhood programs, perform on a tool designed to measure early literacy skills when compared to kindergarteners who have had no early childhood program exposure? Additionally, is there statistically significant variation in early literacy skills (DIBELS) depending on type(s) of early childhood experiences? The authors predict that exposure to some kind of early educational experiences occurring before kindergarten will result in significant early literacy outcomes related to skills needed for classroom learning, such as ability to sound out words and understanding of alphabetic print. The following specific research questions were developed:

Research Questions

Research Question #1: How do kindergarteners in a suburban Midwestern school district, who have participated in one or more early childhood programs, perform on Dynamic Indicators of Basic Early Literacy Skills (DIBELS) when compared to Kindergarteners who have had no early childhood Programs?

Research Question #2: Is there statistically significant variation in early literacy skills (DIBELS) depending on type(s) of early childhood experiences?

Method

Participants

417 parents were asked to complete a survey, developed by the school district, at Kindergarten registration regarding their child's experiences in different types of early childhood programs and experiences at varying ages (See Appendix A). The final

sample size for this study was 322 participants. The survey items address early childhood experience(s) prior kindergarten and are comprised of the following eight categories; Early childhood, home-based child care, center-based child care, home with parent or relative, early childhood/home with parent or relative combined, home-based child care/early childhood experience combined, center-based child care/early childhood combined, three or more experiences. The researchers assigned a type of early childhood experience based on data gathered through surveys completed by parents at Kindergarten registration.

Materials and Procedure

In combination with the parent survey completed during Kindergarten registration, the *Dynamic Indicators of Basic Early Literacy Skills* (DIBELS) were administered by kindergarten teachers to students in the Fall, Winter, and Spring of the 2009-2010 school year. Surveys and DIBELS outcomes were coded by a district employee to ensure confidentiality. *Dynamic Indicators of Basic Early Literacy Skills* (DIBELS) is a series of brief measures developed to evaluate and monitor the acquisition of foundational early literacy skills. DIBELS provide data about individual student literacy skills as they relate to empirically-based competencies linked to later reading proficiency such as phonemic awareness, identification of letters by name, and understanding of relationships among sounds and symbols. The intention and utility of DIBELS is rooted in proactive, preventative action and purposeful decision making regarding student learning. More specifically, these measures generate information about potential difficulties related to foundational literacy skills and efficiency of interventions. DIBELS measures have two uses; screening and progress monitoring. The

screening, or benchmark, dimension of this instructional planning tool involves fall, mid-winter, and spring evaluation of kindergarten through sixth grade student literacy skill and reading development. The progress monitoring aspect of DIBELS can be used with those students identified as being “at risk” for reading difficulties in response to screening data. DIBELS can also be utilized to track student response to instruction and progression toward educational goals. The ultimate purpose of DIBELS is to identify “at-risk” students early and successfully intervene. After the three phases of administration of the DIBELS to students in this sample, coded data was analyzed to consider findings and apply those to the research questions posed. : early childhood ($n=52$), home-based child care ($n=26$), center-based child care ($n=27$), home with parent or relative ($n=34$), early childhood/home with parent or relative combined ($n=104$), home-based child care/early childhood experience combined ($n=34$), center-based child care/early childhood combined ($n=29$), three or more experiences ($n=15$).

Results

The sample consisted of a total of 322 students. A larger sample was initially targeted for participation in the study ($n=417$), however if parents declined to fill out the parent survey their children were not included in the final sample. Early childhood experiences as described above were distributed throughout the sample as follows; Early Childhood ($n=52$), Home-based child care ($n=26$), Center-based child care ($n=27$), Home with parent or relative ($n=34$), Early childhood/home with parent or relative combined ($n=104$), Home-based child care/early childhood experience combined ($n=34$), Center-based child care/early childhood combined ($n=29$), and three or more

experiences ($n=15$). Conversely, the “Early childhood/home with parent or relative combined” ($n=104$) comprised approximately 32% of the total sample size.

The discussion of descriptive statistics in regards to early childhood experiences and the research at hand includes means, frequencies, and significance levels. The Spearman correlation was computed in order to find relationships between predictor variables and DIBELS scores and yielded marginal significance ($p=.076$). Researchers completed a one-way ANOVA. Marginal significance was found between groups within the Initial Sound Fluency ($p=.082$).

Discussion

The authors of this study hypothesized those children who received quality early childcare experiences would perform better on the DIBELS than those students who had not. Although a relationship was found between groups within the Initial Sound Fluency, results did not yield considerable significance in order to confidently support the hypothesis as true. The experimental design adequately addressed the hypothesis and the experiment was properly controlled.

The authors of this study feel that due to the multiple limitations faced during all phases of the research process, results should be viewed as a starting point to guide further research in the area of early literacy skills. Additional research in the area of early childhood experiences and the potential impact on early literacy skills would help to create a greater understanding of this topic. Specific demographic data such as, mother’s level of education, child’s free and reduced lunch status, gender of student, ethnicity of student, and household income level, would be helpful in examining meaningful relationships that relate to demographic variables as predictors of early literacy skills and

school readiness. The authors believe longitudinal considerations for this research would be beneficial in understanding the long term implications of early childhood experiences on literacy skills and later academic achievement.

Limitations and Future Considerations

Several limitations were noted in this study. Vague, subjective, and broad category labels may have impacted parent responses due to confusion. Parents may have been unsure of what to categorize their child's early childhood experiences as, especially if their child had more than one experience within a year time period. Researchers believe that this issue may have negatively affected survey results and ultimately research outcomes. The authors also believe that when working collaboratively with community stakeholders (i.e., local school districts), communication and setting a clear, common goal is necessary in order to achieve desired outcomes.

Additional research in the area of early childhood experiences and the potential impact on early literacy skills would help to create a greater understanding of this topic. Specific demographic data such as, mother's level of education, child's free and reduced lunch status, gender of student, ethnicity of student, and household income level would be helpful in examining meaningful relationships that relate to demographic variables as predictors of early literacy skills and school readiness. Longitudinal considerations for this research would be beneficial in understanding the long term implications of early childhood experiences on literacy skills and later academic achievement.

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Parent Input Form for 2009 Kindergarten Orientation

Hudson School District, in conjunction with University of Wisconsin River Falls school psychology graduate students, seek your input. The data collected will help research the relationship of early assessment and predictability of school success. The data collected will establish a baseline for children entering kindergarten. One area of interest is the experiences a child has prior to kindergarten. This information, along with the outcomes of standardized testing and student performance in school over time, can provide valuable input for the District to best serve children upon entrance to kindergarten.

Thank you for your input.

Please sign below for permission for three UW-RF graduate students to have access to this questionnaire for your child _____, who will enter kindergarten in September, 2009 at one of

First and Last Name of Child

the Hudson School District elementary schools.

Parent/Guardian Signature

Date

Place a check in the box by each of the experiences listed that identify experience(s) your child had prior to entering kindergarten and circle the age(s) of your child at the time of each experience.

EXPERIENCE:

AGE:

☐ Home-based Day Care 0-12 months old 1-2 years old 2-3 years old 3-4 years old 4 years old +

☐ Center Based Day Care 0-12 months old 1-2 years old 2-3 years old 3-4 years old 4 years old +

☐ Pre-School 0-12 months 1-2 years old 2-3 years old 3-4 years old 4 years old +

Name of School: _____

☐ Montessori Program 0-12 months 1-2 years old 2-3 years old 3-4 years old 4 years old +

☐ Home with Parent or Family member 0-12 months 1-2 years old 2-3 years old 3-4 years old 4 years old +

☐ Birth to 3 Program 0-12 months 1-2 years old 2-3 years old 3-4 years old 4 years old +

☐ Early Childhood Program 0-12 months 1-2 years old 2-3 years old 3-4 years old 4 years old +

☐ Head Start 0-12 months 1-2 years old 2-3 years old 3-4 years old 4 years old +

☐ Other 0-12 months 1-2 years old 2-3 years old 3-4 years old 4 years old +

Name of Program: _____