The Relationship Between Pre-Kindergarten Screening and Early Kindergarten Assessment
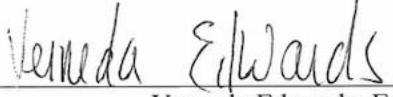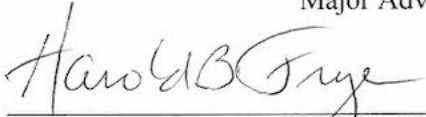
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Submitted to the Graduate Department and Faculty of the School of Education of Baker University in partial fulfillment of the requirements for the degree of Doctor of Education in Educational Leadership

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Date Defended: May 1, 2019

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Abstract

School districts often use kindergarten pre-screening assessments to determine the readiness skills of students prior to entering kindergarten (Shields, DeMeo-Cook, & Greller, 2016). The purpose of this study was to examine the extent that a relationship exists between the spring District A Kindergarten Screening-JumpStart assessment scores and beginning of the year kindergarten achievement as measured by the beginning of the year DIBELS Next Kindergarten Reading scores in letter naming fluency (LNF) and first sound fluency (FSF). The study also examined the extent the relationship between the District A Kindergarten Screening-JumpStart and beginning of the year kindergarten DIBELS Next Kindergarten Reading scores in LNF and FSF was affected by gender, race, and socioeconomic status (SES). The sample consisted of approximately 2,900 kindergarten students enrolled in District A during the 2016-2017 and 2017-2018 school years. Pearson product moment correlation coefficients were calculated to index the strength and direction of the relationships between the District A Kindergarten Screening-JumpStart assessment scores and the DIBELS Next Kindergarten Reading in both LNF and FSF scores. The sample was diaggregated by gender and two correlations were calculated and compared. It was also disaggregated by race and five correlations were calculated and compared. Finally, the sample was disaggregated by SES and two correlations were calculated and compared. Moderately strong correlations indicated that the Kindergarten Screening-Jumpstart scores are good predictors of beginning of the year DIBELS Next Kindergarten Reading scores in LNF and FSF. Additionally, results indicated that the relationship between Kindergarten Screening-JumpStart scores and

beginning of the year DIBELS Next Kindergarten Reading scores in LNF and FSF were

not affected by gender, race, and socioeconomic status.

Dedication

To my amazing, super supportive husband, Dave. I would have never started this journey without your encouragement and could not have survived it without your help. I love how you told people you were "married to a college student" and that "WE had class on Thursday nights."

To my wonderful children. Thank you for your support and for letting me act like we were in college together! I hope you are as proud of me as I am of you!

To my kindergarten partner in crime, Kate, who had to listen to me talk about my classes and writing for three years and who readily jumped in on all the new things I wanted to try as I learned more about leadership and learning.

To my incredible parents who have always supported my educational endeavors both emotionally and financially.

To my constant study partners, Penelope and Leila. You made my days parked on the sofa with my laptop and books so much better!

Acknowledgements

The completion of this dissertation would not have been possible without the advice and support of numerous people. I am so grateful for the guidance, kindness, and motivation you all provided. I am honored to acknowledge those who assisted me throughout this undertaking.

First, I would like to acknowledge the constant support of my wonderful family. This work would not have been possible without your encouragement. I must thank my amazing co-teacher, Kate Husted. I am so lucky to teach with you and appreciate the support and patience you demonstrated throughout this process.

I am especially thankful for the insight, counsel and patience of my major advisor, Dr. Verneda Edwards. Her conscientious and thorough feedback provided abundant information on improving my dissertation. I am also appreciative of my research analyst, Dr. Peg Waterman, who guided me through the data analysis process. Dr. Harold Frye, who served on my committee, also provided meaningful input throughout the dissertation process.

In addition, I am grateful for Dr. Erin Smith, who served as my external committee member. She immediately agreed to serve on the committee and is an exceptional model of district leadership. She was also very supportive during my Directed Field Experience and provided me with excellent district-level learning opportunities.

I would be remiss if I failed to acknowledge Dr. Dan Gruman. He not only organized the archival data used in my study but was available to answer questions throughout the dissertation process.

Lastly, I would like to thank the classroom teachers, specialists and instructional coaches I have been lucky to interact with throughout my career. I am continually impressed and inspired by the work you do to ensure the success of every student.

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Chapter 1

Introduction

Students enter kindergarten from a variety of backgrounds. Some students enter kindergarten socially and academically prepared, while others come with limited skills. Because of this, children enter school with varying basic literacy skills (Kokkalia, Drigas, Economou, Roussos, & Cholis, 2017). Some students arrive with an abundant exposure to language, vocabulary, and alphabetic principles while others have limited exposure to literature, the alphabet, and vocabulary. When exposed to an identical curriculum, students with a stronger academic foundation will learn to read faster than students without these skills (Stanovich, 1986). Research conducted by Bernstein, West, and Newsham (2014) indicated that 44% of children enter kindergarten with risk factors associated from a lack of school readiness. Additionally, results from Ohio's Kindergarten Readiness Assessment (2017) reported that out of 27,103 children, 23.6% needed significant support to be able to engage at kindergarten-level instruction. Furthermore, children who were prepared for school at age five were more successful in elementary school, more likely to graduate from high school, and have a higher earning potential as an adult (Duncan et al., 2007; Duncan et al., 2010). Similarly, Van Zyl (2011) found that the influence of school readiness on academic performance was more significant during the foundational phase of learning than during later years of school.

Socioeconomic status may impact reading development. Research has indicated there are significant reading achievement gaps for children from lower socioeconomic backgrounds at the beginning of kindergarten (Kieffer, 2012; Snow, Burns, & Griffin, 1998). Gottfried et al. (2003) found socioeconomic status accounts for 20% of the

variance in childhood IQ. The impact of poverty affects children from all races. Many children from lower-income homes arrive to kindergarten lacking school readiness more than moderate and high-income children (Issacs, 2012). Research by Karoly, Kilburn, and Cannon (2005) demonstrated that children from disadvantaged backgrounds do not progress at the same rate as children from more advantaged backgrounds resulting in a wider achievement gap over time. At-risk children have also been found to have a higher rate of special education placement, grade retention, and leaving high school before graduation (Karoly et al., 2005). Research regarding school readiness has indicated that students who struggled with early reading were likely to continue to struggle and continue to fall behind in later grades (Echols & Young, 2010). Mushtaq and Khan (2012) reported that children's communication skills, the quality of early learning facilities, proper adult guidance, and levels of family stress are also factors that influence school performance.

School districts often use kindergarten prescreening assessments to determine the readiness skills students possess prior to entering their first formal year of schooling (Shields et al., 2016). As preschool programs have expanded, efforts to monitor and document students' progress have grown and policymakers in most states have established policies related to monitoring preschool programs (Shepard, Kagan, & Wurtz, 1998). While some districts develop their own kindergarten prescreening tools, other districts use commercially produced screenings (BUILD Initiative, 2018).

Background

During the first decade of the 21st century, there has been an increased focus on the importance of early childhood education (Wilson & Lonigan, 2009), including the federal government working to improve the quality and availability of Head Start programs to serve more children (U.S. Department of Education, 2015). Preschool Development Grants supporting states in developing and improving high-quality preschool programs have been developed so that states can seek to eventually offer preschool to all four-year-old children. These grants helped serve 33,000 four-year-old children during the 2015-2016 school year in more than 200 communities and were expected to enroll 177, 000 more children during the four-year grant period from 2014-2018 (U.S. Department of Education, 2015). Corporate and philanthropic leaders also contributed to improving early childhood programs. At the White House Early Education Summit, held in December 2014, corporate leaders committed over 300 million dollars in new funds to expand and improve preschool programs (U.S. Department of Education, 2015). In addition to other initiatives created by the government, Congress passed the Strong Start for America's Children Act (114[tth] Congress, 2015). This act adds to previous legislation to expand access to high-quality preschool programs that are aligned with public elementary and secondary school standards (114th Congress, 2015).

The focus on increasing and improving preschool programs is also happening at the state level. Since 2003, states have increased funding for preschool by more than 200%. In 2014, state funding for preschool totaled $1 billion (U.S. Department of Education, 2015). Kansas offers the Kansas Preschool Program (KPP) block grant to

support preschool programs. This grant was established to support programs for children ages three through five and seeks to better serve at-risk students (KSDE, 2018).

According to Sanchez (2017), an increasing number of districts throughout the country are offering publicly funded preschool. In Kansas, school districts have aligned curriculum with state early learning standards, increased preschool program opportunities, and have included preschool in their strategic plans (KSDE, 2018). For example, District A includes early childhood education as part of their districtwide strategic plan and offers a preschool program for four-year-old students living in the district. The program is developmentally appropriate and emphasizes active learning in a stimulating environment. Students engage in learning experiences that promote social, emotional, physical, language, and cognitive development (District A, 2018).

District A is a large suburban district in Johnson County, Kansas. It is one of the largest districts in the state with approximately 27,600 students attending 33 elementary schools, 5 middle schools and 5 high schools (District A, 2018). The demographics of District A are representative of the county. The population for this study consisted of 2,937 kindergarten students who attended District A during the 2016-2017 and 2017-2018 school years. The population for this study was evenly distributed between male and female students with slightly more male students in both 2016-2017 and 2017-2018.

Table 1

Gender Percentages for the Kindergarten Population 2016-2017 and 2017-2018

School Year	Females *n*	Males *n*
2016-2017	716 (48.9)	749 (51.1)
2017-2018	712 (48.4)	760 (51.6)

Note. *District A Kindergarten Screening-JumpStart*, (████, personal communication, 2018).

The socioeconomic distribution for the sample population was similar in 2016-2017 and 2017-2018.

Table 2

Socioeconomic Percentages for the Kindergarten Population 2016-2017 and 2017-2018

School Year	Free/Reduced *n*	Full Pay *n*
2016-2017	77	23
2017-2018	74	26

Note. *District A Kindergarten Screening-JumpStart*, (████, personal communication, 2018).

The above tables indicate the demographics of kindergartners in District A for the 2016-2017 and 2017-2018 school years.

Statement of the Problem

Public awareness concerning the significance of early childhood education in preparing students for future academic success has expanded. Kindergarten prescreening tools are used to gauge a child's abilities and as an early intervention tool to determine which children may be at risk for developmental, behavioral, or academic challenges (Alfonso, 2017). The ability of a kindergarten prescreening to predict success in kindergarten is important because preschools, school districts, state departments of education, and the federal department of education use these tools to assess the quality of preschool programs (Epstein, Schweinhart, DeBruin-Parecki, & Robin, 2004).

Elementary schools use the prescreening data for class placement, individualized

learning, and early identification of students with developmental delays (Epstein et al.,

2004). If the prescreening tool is not accurate, then decisions made will present false

information. Preschools, school districts, state education departments, and the federal

department of education spend money purchasing the assessment tools. According to

Glaser (2017), the cost of prekindergarten assessments ranges from $6-$36 per student.

Administering the assessments requires staff resources and time since most

prekindergarten assessments take 20-30 minutes per child to administer (Rock, 2019).

Purpose of the Study

The current study was conducted to examine the extent a relationship exists

between the District A Kindergarten Screening-JumpStart assessment and beginning of

the year kindergarten achievement as measured by the beginning of the year DIBELS

Next Kindergarten Reading scores in letter naming fluency (LNF) and first sound fluency

(FSF). The study also examined the extent the relationship between the District A

Kindergarten Screening-JumpStart and beginning of the year kindergarten DIBELS Next

Kindergarten Reading scores in LNF and FSF is affected by gender, race, and

socioeconomic status.

Significance of the Study

Research supports that early childhood education has a positive impact on student

achievement. According to Smith (2014), quality early childhood programs positively

affect cognitive development and school achievement, especially for low-income

children. School districts and states, as well as the federal government, are investing

money to increase the number of preschools available and improve programs to prepare children for future academic success.

An analysis of the 2016-2017 state appropriations budgets for preschool indicated that 30 states increased funding levels for preschool programs by $480 million (Diffey, Parker, & Atchinson, 2017). The current research could help determine if prescreening tools support the prediction of kindergarten success. If the prescreening does not predict student success, then districts should consider implementing different screenings, discontinue the use of the screenings, or conduct further research on the screenings' effectiveness. Screenings are not only costly, but they take time to administer. If the screenings are inaccurate predictors of academic success, then the time spent screening may be better utilized preparing children for school. The study could help districts determine if its kindergarten prescreening assessment accurately predicts students' beginning of kindergarten performance.

Delimitations

According to Lunenburg and Irby, "delimitations are self-imposed boundaries set by the researcher on the purpose and scope of the study" (2008, p. 134). The following delimitations were utilized by the researcher to narrow the focus of the study:

- The population included one public, suburban school district in Kansas.
- The sample was kindergartners who were screened as preschoolers and began the school year in District A.
- Data were used from the 2016-2017 and 2017-2018 school years.
- The district kindergarten prescreening and kindergarten beginning of the year tools were limited to two measures, FSF and LNF.

Assumptions

Lunenburg and Irby (2008) stated that, "assumptions are postulates, premises, and propositions that are accepted as operational for the purposes of the research" (p.135). The study was conducted with the following assumptions in place:

• Teachers who administered the District A Kindergarten Screening-JumpStart and Kindergarten DIBELS Next Kindergarten Reading assessment were provided with adequate professional development on implementing the assessments.

• Teachers who administered the District A Kindergarten Screening-JumpStart and DIBELS Next Kindergarten Reading assessment did so with fidelity.

• Students gave their best effort on the District A Kindergarten Screening-JumpStart and on the Kindergarten DIBELS Next Kindergarten Reading assessments.

Research Questions

Creswell (2009) stated research questions "shape and specifically focus the purpose of the study" (p. 132). The variables measured to address these research questions were letter naming fluency (LNF) and first sound fluency (FSF) in both the kindergarten prescreening and DIBELS Next. The following research questions were addressed in this study:

RQ1. To what extent does a relationship exist between the District A Kindergarten Screening-JumpStart scores and beginning of the year DIBELS Next Kindergarten Reading scores in LNF?

RQ2. To what extent does a relationship exist between the District A Kindergarten Screening-JumpStart scores and beginning of the year DIBELS Next Kindergarten Reading scores in FSF?

RQ3. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF affected by gender?

RQ4. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF affected by gender?

RQ5. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF affected by race?

RQ6. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF affected by race?

RQ7. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF affected by socioeconomic status?

RQ8. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF affected by socioeconomic status?

Definition of Terms

The following terms and definitions were used in the current study.

Benchmark. As defined by Dance-Schissel (2018), benchmark is establishing measurable standards for learning. These standards may be set for concepts that must be mastered during a grade and used to see where a student ranks in comparison to others.

Dynamic Indicator of Basic Early Learning Skills Next (DIBELS Next). Kaminski and Good (2008) defined DIBELS Next as an assessment that assesses emergent literacy skills in several areas including letter naming fluency, initial sound fluency, phoneme segmentation and nonsense word fluency.

      First sound fluency (FSF). The definition of FSF is the student's ability to identify the first sound of a given word. For example, if the test administrator says, "cat", the student can say /c/ as the first sound (Kaminski & Good, 2008).

      Letter naming fluency (LNF). Kaminski and Good (2008) defined LNF as the student's ability to identify the name of lowercase letters of the alphabet.

Kindergarten. In the United States, kindergarten is defined as "a school or class that prepares children for first grade" (Merriam-Webster, 2018). Typically, kindergarten children are five or six years old.

Kindergarten prescreening assessments. Kindergarten prescreening assessments are defined as assessments that provide a snapshot view of a student's skills and abilities prior to entering kindergarten (Springer, 2011).

Preschool. In the United States, preschool is defined as the period in a child's life that ordinarily precedes attendance at elementary school (Merriam-Webster, 2018). Typically, preschool children are three or four years old.

School readiness. School readiness is defined as children possessing the skills knowledge, and attitudes necessary for success in school and for later learning and life (U.S. Department of Health and Human Services Administration for Children and Families, 2018).

Organization of the Study

This study is presented in five chapters. Chapter 1 included an introduction to the study, the problem statement, and background information on preschool readiness, kindergarten prescreening tools, and the Kindergarten DIBELS Next Kindergarten Reading assessment. The purpose statement, significance of the study, delimitations, and assumptions of the study were also provided. The research questions that guided the current study were identified as well as the definition of key terms used in the study. A review of the literature is provided in Chapter 2 summarizing research regarding the importance of attending preschool in developing kindergarten readiness and characteristics of quality preschool programs. Developmental theories concerning five and six-year-old kindergarten readiness and kindergarten prescreening tools are addressed. The review of literature contains a discussion concerning the connection between results of kindergarten prescreening and kindergarten performance. Chapter 3 provides a review of the methodology used in the current study and the population. An explanation of the results and analysis of the statistics can be seen in Chapter 4. Finally, Chapter 5 discusses current research and implications for future studies.

Chapter 2

Review of the Literature

The current study was conducted to examine the extent a relationship exists between the District A Kindergarten Screening-JumpStart assessment and beginning of the year kindergarten achievement as measured by the beginning of the year DIBELS Next Kindergarten Reading scores in letter naming fluency (LNF) and first sound fluency (FSF). The study also examined the extent the relationship between the District A Kindergarten Screening-JumpStart and beginning of the year kindergarten DIBELS Next Kindergarten Reading scores in LNF and FSF is affected by gender, race, and socioeconomic status. Presented in Chapter 2 is a review of theories of how children develop, especially as it relates to academic growth. Developing kindergarten readiness, including information concerning factors influencing readiness, qualities of successful preschool programs, and states' commitments to early childhood education are also addressed. The relationship between prekindergarten screenings and academic outcomes, the correlation between kindergarten assessments and kindergarten outcomes, and gender difference in emergent literacy development are also discussed.

Child Development Theories

The Great Start, Grow Smart Initiative (GSGS) (U.S. Department of Health and Human Services, 2002) defined early childhood as the period of a child's life between birth and age five. There are several theories that address how a child develops. According to Singer and Revenson (1978), Piaget was, and continues to be an influential child development theorist. He was interested in determining how children became knowledgeable about the world. His theories were developed by observing children,

asking them a set of questions, and following their train of thought. Singer and Revenson (1978) reported that the development of thought processes influenced how children understood and interacted with the world around them. Piaget (1983) said he believed that instruction should be adapted to a child's developmental level and that adults should provide a variety of opportunities for children to explore in order to develop new understandings. Piaget proposed several stages of development, two of which address preschool and kindergarten children's development. Piaget determined these developmental stages through observing his own two children (McLeod, 2018). The sensorimotor stage is the first stage of development from birth to two years when a baby's knowledge is limited by sensory perceptions. The second stage is called the preoperational stage from ages two to six when children are learning a language. Piaget and Vygotsky, another prominent child development theorist, stated that children discover the world through play. Piaget's play theory focused on children's intellectual development and defined play as a way for children to develop and practice their cognitive abilities. He included three stages that a child's play progresses: imitative play, imaginary play, and playing with rules (Piaget, 1962). Vygotsky thought that play encouraged the development of abstract thought and supported play-based learning to improve thought structures (Bodrova & Leong, 2015).

Vygotsky focused on the nature of the mind. His research developed from this interest along with his vast theoretical knowledge and his involvement in educational practice (Vygotsky, 1978). Vygotsky's sociocultural theory described how a child's environment, culture, and language related to a child's development. A component of this theory is the concept of zone of proximal development (Vygotsky, 1978) which is

considered to be the difference between what a person can do with or without assistance. Vygotsky (1978) noted that speech develops after a child develops technical thinking and is considered the beginning of cognitive development. Vygotsky stated that speech and practical activity occurring simultaneously and is a significant stage in intellectual development (Vygotsky, 1978).

Albert Bandura developed social learning theory in 1977 (Bandura, 1989). Bandura theorized that children's behaviors can be learned by observing and modeling their caregivers and peers (Cherry, 2017). His interest in child development began when he started questioning how humans' competencies and social systems were created. He began his studies through observation. His classic 'Bobo doll' experiment caused the field of psychology to shift toward a social-cognitive model of learning (Caprara, 2014). This experiment involved two groups of children who attended the Stanford University nursery school. Children in one group watched adults beating an inflatable clown doll and children in the second group did not. Both groups of children were later given the opportunity to play with the inflatable clown doll ("Bandura's Bobo", 2019). The children who observed adults being aggressive toward the doll modelled the same aggressive behavior (Caprara, 2014). Modeling can serve as social prompt that helps children acquire attitudes, values, and emotional dispositions (Bandura, 1989).

Bandura (1989) found that social resources are particularly important during children's formative years. These resources, along with social factors and information gained from life experiences influence cognitive development (Bandura, 1989). Socially-guided learning supports self-directed learning by providing the conceptual tools necessary to gain new knowledge and the resources to deal with various life situations

(Bandura, 1989). Social modeling also impacts gender-role development. This begins at birth when infants are often dressed in pink or blue clothing depending upon their gender. As children continue to develop, they notice that verbal gender labeling is used frequently, and they associate this with biological gender in addition to the characteristics and activities associated with each gender. Through life experiences, children begin to develop their own sense of gender identity (Bandura, 1989).

Language development is also influenced by socialization. Initially, children learn about the things in their environment and the relationship between these things through a nonlinguistic process which later helps them attach meaning to linguistic symbols (Bandura, 1989). The ability to attach words to objects and relationships becomes both a form of communication and a form of thought as language influences how children perceive events. Children use language as a way to gain information and access to things they want. They also use it as a way to guide their own actions, understand others and explain their behavior (Bandura, 1989). When developing language skills, children must determine how the words being spoken relate to what is occurring in their surroundings. Children's expressive language skills are influenced by feedback such as peoples' facial expressions and signs that adults are not comprehending what they are saying. This feedback leads children to self-correct their speech to attain the desired results (Bandura, 1989).

According to Bandura (1989), a large amount of social learning occurs between children and their peers. These same-age peers provide children with knowledge of their capabilities and provide models of thinking and behavior styles. When children are school-age, the school serves as the primary place for social validation of cognitive

abilities. Their knowledge is continually tested, evaluated, and socially compared which allows them to develop cognitive competencies and problem-solving skills to function in society (Bandura, 1989).

During early childhood, children develop important cognitive skills including pre-reading, language, vocabulary, and early numeracy (U.S. Department of Health and Human Services, 2002). Children's abilities develop cumulatively and dynamically. According to GSGS (U.S. Department of Health and Human Services, 2002), in order to successfully acquire basic reading skills, young children must be provided with an environment that is rich in language and literacy. The skills a child possesses during early childhood can predict future abilities and the child's potential for acquiring new cognitive skills (Borghans, Golsteyn & Zölitz, 2015).

Although children develop at different rates, there are generally social, emotional, physical, and cognitive developmental milestones. Social and emotional development of two and three-year-old children include the ability to play with others for brief periods although they are unable to share. Research by Lynch and Simpson (2010) indicated that four and five-year-old children develop the social skills of empathy, problem solving, helpfulness, communication, and engagement in group activities. They acquire these skills through direct instruction, peer and adult modeling, and play (Lynch & Simpson, 2010).

Children develop gross and fine motor skills at different stages. The physical skills of two and three-year-old children include running, swinging, climbing, kicking, throwing and catching balls, riding toys that can be pushed with their feet, and climbing stairs (Centers for Disease Control [CDC], 2017). Developmental milestones for four-

year-old children include gross motor skills like standing on one foot, hopping, swinging

and climbing, and fine motor skills including copying simple shapes, drawing people,

printing some letters, and using utensils (CDC, 2017).

      Child development theorists including Piaget, Vygostky, Bandura, Freud, and

Erikson outline several stages of children's cognitive development (Oswalt, 2019).

Two and three-year-old children have difficulty controlling their impulses and are unable

to reason. They are beginning to develop understanding and are trying to make sense of

the world. They enjoy make-believe play and will draw using scribbling, lines, dots, and

circles. Language skills develop rapidly at this stage and children are able to

communicate through conversation, can name numerous objects, can speak in sentences,

and can follow simple instructions. They use the words 'me' and 'you' correctly, listen

to and create stories and ask 'what, 'where,' and 'why' questions. Playing is important

and includes dramatic play, using stacking toys, completing simple puzzles and playing

with cars, dolls, and animals (Government of West Australia Department of Health,

2018). Four and five-year-old children expand upon this knowledge by demonstrating

language skills including recalling parts of stories, speaking in four or five-word

sentences, telling stories, and stating personal information like name and address. Their

cognitive development involves counting objects, naming colors, and having an increased

understanding of time. Children's ability to communicate through language, symbols,

and pictures develops even more during the ages of five and six (Child Mind Institute,

2019). Five and six-year-olds also possess numerous cognitive skills. According to Lee

(2018a), cognitive skills for five-year-old children include knowledge of the alphabet, a

rapidly growing vocabulary, recognition of numbers and basic number sense, knowledge

of shapes, the ability to sort, and the understanding of positional words. Six-year-olds develop phonemic awareness and decoding skills along with the ability to read independently (Lee, 2018b). Adults might also observe six-year-olds using various math strategies to solve addition and subtraction problems and generating fact families for numbers up to ten (Lee, 2018b).

Developing Kindergarten Readiness

When discussing the development of kindergarten readiness skills, factors influencing kindergarten readiness should be addressed. The qualities of successful preschool programs should also be discussed along with states' commitments to early childhood education.

Factors influencing kindergarten readiness. Researchers have determined that despite the vast number of changes and advancements in early childhood education, kindergarten teachers find that students are unprepared for kindergarten and are often not motivated to learn (Gerstl-Pepin, 2006; New & Cochran, 2007). Results from the 2009 Florida Office of Early Childhood Education showed that 65% of the 179,827 children who took the Florida Assessment for Instruction in Reading-Kindergarten (FAIR-K) were ready for kindergarten (Modeste, 2016). This may be attributed to a lack of high-quality preschool programs (Early Learning Coalition of XYZ County, 2013). According to Modeste (2016), successful early childhood programs contain a school environment that is focused on developmentally appropriate language and communication skills. Modeste (2016) also discusses the important role of high-quality teachers in young children's academic success.

Socioeconomic status can influence kindergarten readiness. Issacs (2012) found that less than 50% of children in poverty are school ready at age five in contrast to 75% of children from moderate- or higher-income families. Isaacs (2012) found that 30% of poor children scored very low on early reading scores as compared to 7% of moderate-or high-income children at age five. These academic disadvantages can be caused by a variety of factors including fewer financial resources, lack of parental education, higher rates of single and teen parents, and poor healthcare and nutrition (Isaacs, 2012). Other risk factors include minimal exposure to basic literacy-building activities like stimulating language, reading, and storytelling (Burchinal, Roberts, Hooper, & Zeisel, 2000). Children from lower socioeconomic backgrounds may have reduced opportunities for cognitive enrichment, increased exposure to stress, and inadequate nutrition (Barton & Coley, 2009; Dearing & Taylor, 2007; Hart & Risley, 1995; Shonkoff et al., 2012; Yeung, Linver, & Brooks-Gunn, 2002).

Qualities of successful preschool programs. While attending preschool, children are exposed to numbers and letters and learn how to socialize (Kanter, 2007). Findings by the National Institute for Early Education Research (NIEER) have determined that high-quality preschool programs can help children enter kindergarten with better pre-reading skills, increased vocabularies, and stronger basic math skills (Kanter, 2007). According to Goodwin (2012), acquiring early reading skills is more rapid and less difficult for students who enter kindergarten with strong letter recognition and phonemic awareness skills. Prekindergarten experiences are particularly important for children considered to be at-risk (Campbell, Ramey, Pungello, Sparling & Miller-Johnson, 2002).

At-risk children who attended a quality preschool have an increased chance to graduate from high school and higher future earning potential (Institute for Policy Studies, 2015).

The Abecedarian Project conducted by Campbell et al. (2002) noted a correlation between kindergarten readiness and academic success as children progressed through school. The program sought to examine to what extent consistent, quality, early childhood education could overcome the chances of children from low-income families having developmental delays and future academic failure. This project involved a randomized control trial of 111 infants, 98% of whom were African Americans from low-income families. Researchers evaluated children at the beginning of school and conducted follow-up studies at ages 12, 15, 21, 30, and 35. Children were randomly assigned to participate in a research-based childcare setting from infancy until age five where they received interventions or in a control group where they received no interventions. Age-appropriate intervention activities focused on social, emotional, and cognitive experiences with an emphasis on language development. The program's curriculum focused on the four key elements of language priority, conversational reading, enriched caregiving, and learning games. The duration of the study differed from other early childhood studies because subjects were involved in quality child care daily for five years as compared to other studies that lasted shorter durations (UNC FPG Child Development Institute of the University of North Carolina at Chapel Hill, 2019). Results of the study showed enhanced cognitive development during the early childhood period along with positive impacts on cognitive and academic skills throughout the primary grades with gains continued through age 15. Young adults in the research-based childcare group demonstrated positive social-emotional skills, scored higher on

achievement tests in math and reading, had lower levels of grade retention, completed more years of education, and had a higher likelihood of college enrollment. The 101 participants still in the study at age 30 demonstrated long-lasting benefits of high-quality early childhood care (Campbell et al., 2002).

Studies like The Abecedarian Project have increased awareness toward preparing young children to enter kindergarten ready to learn (Le et al., 2006). Attending preschool is an important step in preparing children for kindergarten. Children who attend quality preschool programs are better prepared for kindergarten and for their future (Le et al., 2006). The relationship between preschool attendance and kindergarten achievement has been studied for numerous years. Matthew Garofolo (2017) examined the pre-and posttest literacy scores on the Fountas and Pinnell Benchmark Assessment for 100 kindergartners in New Jersey. This assessment was given at the end of the kindergarten year and measured the literacy skills including decoding, fluency, vocabulary, and comprehension (Garofolo, 2017). The study sought to determine if scores differed between students who had attended private, public, or no preschool. The results showed a statistically significant difference in beginning of kindergarten scores between children who had attended both private and public preschool and those who had not attended preschool. Children who had attended preschool had higher literacy scores compared to those who had not attended preschool.

Vandell, Belsky, Burchinal, Steinberg, and Vandergrift (2010) found that students who attended a quality childcare program demonstrated an increased level of academic skills and fewer externalizing behaviors. The Vandell et al. (2010) study involved 1,364 families. The study began when the children were one month old with 958 participants

being followed through age 15. The demographics of the participants' families included 26% of parents without a high school education, 22% minorities, and 21% living at or below the poverty level. The study examined the type, quantity, and quality of childcare that children were exposed to from birth to age four and a half. The type of childcare was classified as center-based, home-based away from own home, in-home care at own home, father care, and grandparent care. The quantity of childcare was determined by the number of hours per week subjects were in nonrelative care. The quality of childcare was established through three observational assessments which were conducted in the subjects' primary childcare setting with observers completing the Observational Record of the Caregiving Environment (Vandell et al., 2010). Assessments occurred at several points prior to school age and every year of elementary school. Reading assessments included the Broad Reading Assessment in fifth and third grades, and the Letter-Word Identification Assessment at 4 ½ years and first grade. Math assessments included the Woodcock-Johnson Applied Problems which were administered at 4 ½ years and in first grade and the Broad Math Assessment in third and fifth grades (Vandell et al., 2010). Several additional measures were obtained at age 15 using the Woodcock-Johnson Psycho-Educational Battery-Revised Tests of Cognitive Ability and Achievement. The subtests used included the Picture Vocabulary and Verbal Analogies subtest and the Tests of Achievement Passage Comprehension and Applied Problems subtest. Factors measured at age 15 were participant use of alcohol and tobacco, self-reports of the frequency of risk-taking behaviors, doing things that threatened their safety, and illegal activity. Impulsivity was measured through eight items from the Weinberger Adjustments Inventory. The Youth Self-Report was used to assess the use of

externalizing constraints such as the participant's ability to control themselves when having fun or to do things without prior thought. This may be related to the association between quality childcare and higher academic skills upon entering school which students continued throughout their education (Vandell et al., 2010).

Exposure to quality preschool experiences have been found to be important to prepare children for future schooling. Modeste (2016) investigated the relationship between the quality of preschool programs and kindergarten readiness scores. This study involved collecting data from 924 children attending early childhood education centers in central Florida during the 2010-2011 and 2011-2012 school years. The early childhood centers were located in varied socioeconomic areas and included private, public, and religious-based centers. These centers were evaluated using the Early Childhood Environmental Rating Scale-Revised (ECERS-R) which employed definitions of best practices in early childhood education. Subscales for the ECERS-R included physical space, personal care routines, activities, program structure, parents, and staff. In addition to the rating scale, students were evaluated using The Florida Kindergarten Readiness Screener (FLKRS). The FLKRS established standards and benchmarks concerning students' physical development, approaches to learning, social and emotional development, language, communication, emergent literacy skills, cognitive development, and general knowledge. Results of the study indicated a direct linear correlation between the quality of the early childhood center and children's kindergarten readiness. The centers that received better ratings had a higher percentage of students who were kindergarten ready (Modeste, 2016).

Burchinal et al. (2008) found that the quality of preschool teachers was also important. This study examined 240 well-established preschool programs in six states that evaluated classroom quality and students' academic achievement. Results determined that the teachers were sensitive and responsive to students' needs but were less able to engage students in learning specific activities including opportunities for social interaction and language development. The researchers used the Classroom Assessment Scoring System (CLASS) to evaluate the emotional climate, classroom management procedures, and instructional methods observed in the preschool programs (Burchinal et al., 2008). The instructional quality of the preschool experiences predicted students' acquisition of language, academic, and social skills throughout the kindergarten year (Burchinal et al., 2008). The study also found that positive interactions between teachers and students and the promotion of language skills was important. Preschool programs should encourage students to use their communication and language skills to improve their ability to reason (Burchinal et al., 2008). Burchinal et al. (2008) recommended that teachers use scaffolding, specific praise, quality instruction, and meaningful feedback to help students develop higher language and reading skills.

There are several factors that contribute to quality preschool programs. These include the physical structure, the quality of teachers, and the program's curriculum (Burchinal et al., 2008). McWayne, Wright, Cheung, and Hahs-Vaughn (2012) recommended that preschool programs have a strong focus on language and communication to develop both academic and social skills. Their research was collected between Fall 2000 and Spring 2003 through the Head Start Families and Child Experiences survey. The information collected encompassed the children's first year of

Head Start through spring of their kindergarten year. The sample was organized by geographical region, city, and percentage of minority families. The Head Start programs included 286 classes with a total of 2,790 students. The study's design included four data collection points including information at the entry to Head Start, during the spring of their first year, during the spring of their second year, and during spring of their kindergarten year. Measures included a direct assessment of the children, teacher reports, and parent reports. Preschool measures involved both social and academic profiles. Kindergarten measures included learning indicators in mathematics, reading, social studies, and science. The study found that children who had higher assessment scores in preschool had higher scores on the assessment given during the spring of the kindergarten year. Results also indicated that familial influences including maternal education and parenting style, along with classroom influences such as teacher experience and adult-child ratio also predicted social and academic performance at the end of kindergarten (McWayne et al., 2012).

Dennis and O'Connor (2013) conducted a cross-national literature and meta-analysis, examining research from 44 studies concerning preschool quality and child development. The relationship between the organizational climate, work environment, and classroom quality were examined. Centers were considered to have a positive organizational climate when there was genuine collegiality, professional growth, supervisor support, innovation, a staff reward system, and goal consensus. The analysis indicated a relationship between the quality of the organizational climate and the overall quality of the preschool (Dennis & O'Connor, 2013). The analysis showed that quality preschools have strong relational organization between leaders, teachers, and colleagues.

Results indicated that exposure to developmentally appropriate educational activities increased social, behavioral, and academic skills, that quality monitoring and rating of early childhood programs increased the quality of student-staff interactions, and that staff participation in early childhood specific professional development was associated with higher staff-student interactions and child development (Dennis & O'Connor, 2013). Quality preschool programs also provide positive teacher interactions and numerous opportunities for children to engage in academics that promote language skills (Bodrova & Leong, 2006; Fuligni, Howes, Huang, Hong, & Lara-Cinisomo, 2012; Kurtz, Boelter, Jarmolowicz, Chin, & Hagopian, 2011). Preschool programs should provide opportunities for students to develop emergent literacy and print conventions such as phonemic awareness (Neuman, 2009). Literacy development opportunities include participation in rhyming games and songs, listening to adults read aloud, reading independently, and conducting conversations with adults. Shared book experiences are important for building background knowledge and exposing children to concepts of print (Strickland & Riley-Ayers, 2018).

States' commitments to early childhood programs. The Every Student Succeeds Act (ESSA), passed in 2015, included important early childhood education amendments. Changes included mandatory state-level Title I fund provisions and resources designated specifically for early childhood education (Alexander, 2015). Many states have established a list of factors that are important for children to have prior to entering kindergarten. The National Education Goals Panel defined kindergarten readiness through five domains including physical, social, language, and cognitive development (Kagan, Moore, & Bredekamp, 1995). Within these pillars are specific

kindergarten readiness skills which include alphabetic skills, the fine motor skills writing

and cutting, print awareness, and knowledge of shapes and colors (Kagan et al.,1995).

The National Institute for Early Education Research (NIEER)(2016) developed

ten preschool quality benchmarks, which included a set of minimum policies that will

provide learning gains and development and improve later educational achievement.

Benchmarks include the development of early learning standards and assessments with a

curriculum that supports the standards; higher expectations for preschool teachers'

training and degrees with emphasis in early childhood education; constraints on class

sizes and staff-child ratios; and screenings and referrals to identify children who may

need additional services (NIEER, 2016). In addition to program expansions and

improvements, NIEER (2016) indicated that more states than ever are providing publicly

funded preschool. State-funded preschool programs serve approximately 1.5 million

children, which constitutes 32% of four-year-old children and 5% of three-year-old

children (NIEER, 2016). In 2016, funding for preschool programs saw a $564 million

dollar increase since 2015 (NIEER, 2016). Steve Barnett, head of NIERR, indicated

there is a growing inequality between states that are investing in quality preschool

programs and those that are not investing in programs (NPRed, 2018). Differences also

exist in the number of students enrolled in preschool. Florida, Oklahoma, Wisconsin and

the District of Columbia serve over 70% of their four-year-old children (NIERR, 2016).

Eighteen other states serve more than a third of their four-year-old children (NIERR,

2016). The remaining seven states do not provide any funding for preschool (NIERR,

2016). Kansas offers the Kansas Preschool Program (KPP) block grant to support

preschool programs for children ages three through five and target the service of at-risk

students (KSDE, 2018). At least 50% of children in a program receiving KPP funds must meet at least one at-risk criteria component. The criteria include poverty, a single-family home, teen parents, at least one parent without a high school diploma or General Education Diploma, a referral from the Department of Children and Families, limited English proficiency, low developmental progress, or migrant status. The program has four components which include community collaboration, family involvement, high-quality programs, and successful children (KSDE, 2018). KPP also implements a data collection system to evaluate the impact of preschool programs on school readiness (KSDE, 2018). In 2013, Kansas completed the third revision of the Kansas Early Learning Standards which align with Kansas' College and Career Ready Standards. The Kansas Early Learning Standards were developed to support the learning and development of preschool age children (KSDE, 2014).

Preschool programs are offered in a variety of educational settings that include public schools, private organizations, daycares, and religious institutions (Modeste, 2006). There are three major federal programs that support early childhood education. These programs are Head Start, Child Care and Development Block Grants, and childcare tax credits (Institute for Policy Studies, 2015). Among these programs, Head Start is the largest federal early childhood program (Institute for Policy Studies, 2015). According to the *Head Start Program Facts* (Early Childhood Learning and Knowledge Center, 2014), 29% of children in Head Start in 2014 were African American, and 38% were Hispanic or Latino. Spanish was spoken as the primary home language for 25% of families, 12% of the children had disabilities, and almost 1 in 20 families had experienced homelessness. Childcare tax credits allow people to claim the care of children under the

age of 13 as a tax credit if care is provided while guardians are working or looking for work. The amount of the credit is dependent upon adjusted gross annual income (Internal Revenue Service, 2018). Other early childhood programs administered through the Department of Education include Title I, Early Reading First grants, Even Start, and grants to special education preschools (U.S. Department of Health and Human Services, 2002).

Prekindergarten Screenings and Academic Outcomes

Lia Freitas (2009) said that parents are often the best judge of whether or not a child is ready for kindergarten and recommended parents consider their children's age in relation to the district's enrollment cutoff date and their children's social, motor, and academic skills. Approximately 73% of public schools administer a prekindergarten assessment (Shields et al., 2016). Results of the assessments are most commonly used for individualized instruction but may also be used to identify students with learning delays and to make enrollment decisions (Shields et al., 2016). Knestrick (2013) recommended the consideration of several factors when constructing early childhood assessments. Factors include making certain that the assessments are developmentally appropriate, purpose-driven, assess both academic and non-academic domains, and use multiple methods including tests, observations, and interviews. The Yale Center for Teaching and Learning (2018) also recommended assessing anonymously and training the test administrators.

A study by Morris, Bloodgood, and Perney (2003) assessed the prereading skills of 102 children at the beginning, middle and end of kindergarten and compared the results to reading achievement assessments at the end of first and second grades.

Researchers determined that letter recognition skills at the beginning and middle of kindergarten predicted reading success in first and second grade. In 2003, Bishop analyzed the results of 103 Florida kindergarten students' screenings and found similar results. This study screened children in the fall and winter of their kindergarten year and measured literacy skills including letter identification and phonological awareness. The students were assessed again each year from first through fourth grade on comprehension, oral reading fluency, sight word recognition, and decoding (Bishop, 2003).

In contrast, Rathvon (2004) found that screening children prior to kindergarten reduces the predictive accuracy of the assessments. Rathvon (2004) attributed this to the children's lack of language and literacy experiences and their lack of familiarity with the classroom setting which may cause behavior, attention, and motivation to interfere with results. According to Miller-Whitehead (2001), one reason for prescreening inaccuracy is that a child may have limited English proficiency or have had minimal previous school experience. This could result in lower test scores despite the child being average or above average intellectually. Another reason for prescreening results being inaccurate is that the test samples ask children to identify items instead of assessing the depth of a child's knowledge and the child's ability to demonstrate knowledge (Miller-Whitehead, 2001). An example of this is that a child may recognize letters but may not be able to identify them out of sequence or in a different font. Prescreening results may also be inaccurate because testing measures do not include the level necessary to demonstrate achievement and the standards to be tested are not aligned with measurable objectives (Miller-Whitehead, 2001). In addition, Miller-Whitehead (2001) also found that many

assessments do not describe the intended population, do not provide information about the test's pilot population, and do not disaggregate data by gender, race, English proficiency, race, or socioeconomic status.

School districts often use kindergarten prescreening tools to determine a child's readiness to attend kindergarten. According to Shields et al. (2016), 73% of public schools use kindergarten prescreening tools. In 2010, 21 states required kindergarten entry assessments (Stedron & Berger, 2014). That number had increased to 25 states by 2014 (Stedron & Berger, 2014). The 2011 Race to the Top Early Learning Challenge grant initiative placed a strong focus on kindergarten entry assessments (U.S. Department of Education, 2011). In 2015, all 20 Race to the Top Early Learning Challenge grant awardees in Phases 1 through 3 were piloting or implementing statewide kindergarten assessments. In addition, other states were collaborating to develop a common assessment tool (Schilder, 2015). Some kindergarten prescreening tools are highly research-based while others are designed by the school districts where the children attend kindergarten.

The Get Ready to Read Screener is also used as a kindergarten prescreening tool. It is a 20-item multiple-choice measure including items that assess knowledge of letter names and sounds, phonemic awareness, print concepts, and emergent writing (Phillips, Lonigan & Wyatt, 2008). When establishing reliability and validity for the screening, initial test items were given to 342 children at four locations. Among the preschools in the study, two were Head Start programs, one was a state-run preschool and the other was a private preschool (Whitehurst, 2008). This allowed for representation of children from various races and socioeconomic levels. The ages of the children were evenly distributed

between 48 and 59 months (Whitehurst, 2008). The questions in the screener were based

upon 14 measures Whitehurst established in several studies. These measures, which were

obtained when children were four-years-old, predicted second-grade reading abilities

with a 78% classification accuracy (Lonigan, Burgess, & Anthony, 2000; Whitehurst &

Lonigan, 1998). The items in the screening were evaluated for reliability and validity and

had an alpha of .78 and a split-half reliability of .80 which indicated internal consistency

(Whitehurst, 2008). The design goal was to select test items that were neither too easy or

too difficult (Whitehurst, 2008). Since 68% of the children scored between five and

thirteen correct out of twenty, the questions were at a reasonable difficulty level

(Whitehurst, 2008). Test designers also compared the validity coefficients of the Get

Ready to Read Screener with other professionally administered emergent literacy tests

and found strong correlations (Whitehurst, 2008).

Another kindergarten prescreening tool is the Kindergarten Diagnostic

Instrument-Second Edition (KDI-2). This screening tool is a prescriptive assessment

designed for children between four and six years. The KDI-2 consists of 13

developmental readiness tests and is administered at the end of preschool through the end

of kindergarten. The KDI-2 is designed to diagnose and identify pre-academic skills,

predict future academic learning, and screen for potential developmental delays as well as

identify accelerated learners (Springer, 2011).

The KinderIQ test is another kindergarten prescreening tool. This test is a free

kindergarten readiness test that consists of 45 questions to be completed by a parent or

caregiver (KinderIQ, 2018). The screening assesses aspects of five developmental areas:

physical and motor development, approaches to learning, social and emotional

development, cognitive development, and language development (KinderIQ, 2018).

The Brigance Early Childhood Screens III is a kindergarten prescreening tool

which can be administered to children at 0-35 months, 3-5 years, and kindergarten and

first grade (Curriculum Associates, 2018). The Brigance is a research-based assessment

tool that uses both a parent questionnaire and assessment questions administered by a

trained educator (Curriculum Associates, 2018). The Brigance screens have established

age level norms, are based on valid and reliable research, and are aligned with early

learning and Common Core Standards. The screenings assess physical development,

language, academic and cognitive skills, self-help skills, and social-emotional skills

(Curriculum Associates, 2018). According to the Brigance technical report, the screening

is standardized and is representative of all demographics, socioeconomic, and

geographical characteristics including students from the South, Midwest, West, and

Northeast (Curriculum Associates, 2018). The Brigance also included children

representing White, African American, Hispanic, American Indian, and Asian

populations along with children receiving free or reduced lunch and children with special

needs (Curriculum Associates, 2018). Reliability measures for the Brigance **Sc**reening

included test-retest, inter-relator, and internal consistency and indicated that scores were

consistent when conducted repeatedly and that variances were related to ability

differences, not chance errors (Curriculum Associates, 2018). Validity was measured by

construct validity, internal structure and fairness, content validity, criterion-related

validity, and accuracy of sensitivity and specificity (Curriculum Associates, 2018).

Construct validity was established using confirmatory factor analysis for all domains and

ages (Curriculum Associates, 2018). Fairness was confirmed by examining 684 items in relation to gender and race (Curriculum Associates, 2018). A differential item function analysis (DIF) was conducted with scores based upon a chi-square difference test (Curriculum Associates, 2018). The examination of items determined that no items were biased meaning that all children had equal chances of receiving the same score, regardless of demographics (Curriculum Associates, 2018). Content validity was established through verification by early childhood researchers and educators and it was determined that the test items assess significant early childhood skills (Curriculum Associates, 2018). The accuracy of specificity and sensitivity indicated that screening results do not over or under identify children with developmental delays or disabilities (Curriculum Associates, 2018).

Following the implementation of the Race to the Top-Early Learning Challenge, the Kentucky Department of Education instituted the use of the Brigance Screener for all children entering kindergarten (Shires, 2017). Kentucky required that all elementary schools administer this test within the first thirty days of kindergarten (Shires, 2017). The results of both components are used to determine a student's overall score (Shires, 2017). These scores are compiled into a database and reported to the Kentucky Department of Education (Shires, 2017). Data is also collected and reported concerning students' education setting prior to entering kindergarten (Shires, 2017).

Schools and districts also construct their own kindergarten prescreening tools. This allows schools and districts to gather information about the children which is specific to their community and in line with their curriculum and later assessments (Scott-Little & Niemeyer, 2001). The reliability and validity of these screenings are

often determined by comparing measures on district screenings to measures on established, research-based assessments (District A, 2018). For example, District A's Kindergarten Screening-JumpStart assessment results correlated with Kindergarten Northwest Evaluation Association Measures of Academic Progress scores (District A Coordinator of Assessment and Research, personal communication, 2018). Test items were modeled after the Ages and Stages Questionnaire (ASQ) (District A Assessment Director, personal communication, 2018). Districts established the reliability of their assessments by administering and then re-administering the test to determine if scores were consistent (District A Assessment Director, personal communication, 2018).

Pook (2012) discussed the advantages and disadvantages of both external assessments and school-based assessments (SBA). Advantages of SBA included increased validity because factors can be assessed that are not included in external exams, teacher assessors are familiar with the students, and test administrators may have multiple opportunities to complete assessments (Pook, 2012). In contrast, commercially produced assessments have narrower ranges of assessment opportunities, have a limited scope of assessment which may decrease validity, and teachers may have a limited role in the assessment process (Pook, 2012). An advantage of research-based commercial screenings is that they have access to larger groups of students when initially testing to established reliability and validity of the screening. Commercially produced assessments are also better able to draw students from a range of geographic locations, races, and socioeconomic levels that may be accessible in a single school district.

In addition to the potential lack of an assessments' accuracy, teachers may face barriers to using entry assessments and other student data for instruction. Barriers

include assessments that have broad readiness domains rather than assessing specific

content areas (Cosner, 2011). Logistical barriers such as unreliable technology and lack

of time for administration can also play a role in an assessment's effectiveness (Zweig,

Irwin, Kook, & Cox, 2015). The lack of appropriate professional development on

administering and using the data derived from assessments can also be an obstacle

(O'Connor & Steuerwalt, 2008). These obstacles need to be overcome to ensure the

accuracy of kindergarten prescreening tools. The kindergarten prescreening tools

included in this section assess children's reading levels, math abilities, and visual

recognition skills. Prekindergarten screening tools that are being used accurately assess

kindergarten readiness skills and predict success in kindergarten. Screenings may be

biased against students based upon their race, socioeconomic status, physical disabilities,

or limited English proficiency (Carlton & Winsler, 1999). Miller-Whitehead (2001)

found that kindergarten prescreening inaccuracy may be because the child has limited

English proficiency or has had minimal previous school experience. This could result in

lower test scores despite the child being normal or above normal intellectually (Miller-

Whitehead, 2001). Some tests are measures of vocabulary knowledge and academic

language proficiency, not intelligence. Therefore, students who are non-English speakers

would score low on these types of assessments (Camilli & Shepard, 1994). Research by

Springer (2011) indicated that kindergarten prescreening results may be inaccurate

because children are asked to talk with unknown adults during the screening process

which goes against their being taught not to talk to strangers. Bordignon & Lam (2004)

attributed low scores on kindergarten prescreenings to lack of experience, shyness,

anxiety, impulsivity, avoidance, and inattentiveness.

Kindergarten Screening and Kindergarten Outcomes

Limited research has explored the relationship between kindergarten screenings and kindergarten learning outcomes (Shields et al., 2016). An older study by Fox and Galimore (1976) examined the achievement test scores of 50 kindergartners, comparing the scores of students who had attended preschool to the scores of students who had not attended preschool. This study used several assessment measures including the Wechsler Preschool and Primary Scale of Intelligence, the Metropolitan Readiness Test, and the Standard English Repetition Test which were administered in the fall and spring of the kindergarten year (Fox & Galimore, 1976). The results of the study showed that students who attended preschool had an advantage in verbal skills over those who did not attend preschool on the beginning of kindergarten assessments (Fox & Galimore, 1976). Kindergarten end-of-the-year assessments indicated that this advantage was maintained throughout the kindergarten year (Fox & Galimore, 1976).

Santi, Foorman, York, and Francis (2009) conducted a controlled trial analyzing the effect of conducting a reading screening early in the kindergarten year versus later in the year. The study examined 62 schools in a southwestern state, encompassing 201 kindergarten classrooms and 3,635 students. Teachers were randomly assigned to administer kindergarten assessments in either the fall or winter of the kindergarten year. Teachers received either onsite or web mentoring in assessment procedures. The objective of the study was to examine the effects of assessment timing and the type of support teachers are provided to translate assessment results into instructional practices. Results were evaluated based on outcomes on a standardized reading test administered at the end of kindergarten. A small, but significant effect was found when teachers

administered the screening in the fall and received web mentoring although no evidence indicated that earlier screenings were more beneficial than later screenings (Santi et al., 2009).

The Early Childhood Longitudinal Study (ECLS-K) followed a group of children from kindergarten through fifth grade and indicated that kindergarten assessment scores in reading, math, and science were positively associated with fifth-grade assessment scores (Princiotta, Flanagan, & Germino-Hausken, 2006). Data was collected in the fall and spring of kindergarten. In first and second grades, fall data was collected with approximately one-third of the sample and with the full sample in the spring. For third through fifth grade, spring data collections were conducted with the full sample. Students were assessed on the majority of the same items as the previous year with more difficult items added to reflect new learning. The reading segment of the kindergarten assessment included basic skills such as print awareness and letter recognition and the mathematics portion measured concepts, procedures, and problem-solving. The kindergarten science section included items related to physical, life, and environmental sciences along with scientific inquiry. Subjects' executive functioning, including cognitive flexibility and working memory, were also measured. Parent interviews were conducted in the fall and spring of both the kindergarten and first-grade years. Parents provided information on home educational opportunities including reading, outside play, family outings, amount of screen time, tutoring or special education services, and nonparental childcare. Teacher interviews were conducted during the first-grade year. These interviews collected information related to the children's classroom experiences, their academic and social development, and the classroom environment (Princiotta et al.,

2006). The study's results indicated that students living in poverty scored lower on reading, mathematics, and science than students who were not in poverty. Results also showed that students living in two-parent families for all rounds of reading, mathematics and science data collection were more likely to score in the top third than were students whose families changed from two-parent to single-parent during the study's time frame. The study found that students' whose primary language was English in kindergarten outperformed students whose home language was not English in the areas of reading, mathematics, and science in fifth grade. The number of places children lived throughout the extent of the study also influenced their scores in reading, math, and science in fifth grade. Students who lived in four or more places or changed schools three or more times were less likely to score in the top third than students who had lived in one or two places (Princiotta et al., 2006). Kindergarten scores in reading were positively associated with fifth-grade reading achievement scores. In fifth grade, 65% of students who scored in the highest third in kindergarten also scored in the highest third in fifth grade and 53% of students who scored in the lowest third in kindergarten scored in the lowest third in fifth-grade. Kindergarten math scores were also associated with fifth-grade math scores with 67% of those scoring in the top third in kindergarten scoring in the top third in fifth grade. Science scores in kindergarten were also positively associated with fifth-grade science scores. In fifth grade, 67% of students who scored in the highest third in kindergarten scored in the highest third in fifth grade and 63% of students who scored in the lowest third in kindergarten were in the lowest third in fifth grade (Princiotta et al., 2006).

Le, Kirby, Barney, Setodji, and Gershwin (2006) extended previous research using data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998–1999 (ECLS-K) (Princiotta et al., 2006) and examined if children's skills and knowledge at the beginning of kindergarten predicted their achievement in later grades. Le et al. (2006) examined data from 7,897 students, parents, teachers, and building level leaders collected annually at the beginning and end of kindergarten through fifth grade. The data included math and reading assessments, fine and gross motor skill inventories, and information concerning approaches to learning, self-control, interpersonal skills, internalizing behaviors, and externalizing behaviors (Le et al., 2006). The researchers found that academic and nonacademic school readiness skills as determined at the beginning of kindergarten were significantly related to fifth-grade reading and mathematics achievement (Le et al., 2006).

According to Compton et al. (2010), screenings must be evaluated by the accuracy of their predictions. If predictions are inaccurate and overpredict reading difficulties, students may receive unnecessary interventions (Compton et al., 2010). In contrast, screenings that under predict reading issues will miss students in need of interventions (Compton et al., 2010). The National Center on Response to Intervention (NCRI, 2010), listed five standards that should be evaluated when examining a screening tool's accuracy. These standards included the screening's ability to classify students as at-risk or not at-risk of reading difficulty, and the accuracy, reliability, validity, generalizability, and availability of disaggregated data on diverse populations (NCRI, 2010).

Schools use the results from kindergarten prescreening tools for a variety of reasons. Among public schools surveyed, 93% reported using the results to individualize instruction and 65% use the assessment results to identify students who may need additional testing for learning difficulties (Shields et al., 2016). Others use the information for purposes related to enrollment such as class placement (41%) and recommending delaying kindergarten entry (24%) (Shields et al., 2016). Although limited research has examined the relationship between kindergarten prescreenings and kindergarten outcomes (Shields et al., 2016), some studies have indicated that preschool attendance influences performance in kindergarten (Fox & Galimore, 1976) and that scores on beginning of the year kindergarten assessments can predict later academic and nonacademic success (Princiotta et al., 2006). These considerations, along with the accuracy of predications and the intended use of screening results should be evaluated when selecting kindergarten prescreening tools.

Gender Differences in Emergent Literacy

Although gender does not appear to be a strong predictor of reading ability (Limbrick, Wheldall, & Madelaine, 2011), studies have shown that deficiencies in phonological awareness impact boys learning more significantly (Limbrick et al., 2011). Some scientists have attributed the differences in literacy development to differences in the brains of boys and girls and others attribute it to different maturation levels (Watson, Kehler & Martino, 2010; White, 2007). Girls have a larger corpus callosum, which connects the brain's hemispheres and facilitates communication (Gurian & Stevens, 2012). Girls also have greater left-hemisphere activity which supports language-related

tasks (Alloway, Freebody, Gilbert, & Musprett, 2002) and more bilateral activation during language processing (Burman, Bitan, & Booth, 2008).

Alloway et al. (2002) sought to determine why boys are underachieving in literacy activities, what factors influence this underachievement, and what educational practices can benefit boys when teaching literacy skills. The study involved 24 elementary schools in Queensland, New South Wales and Tasmania. The schools selected represented a variety of socioeconomic, geographical, and first language backgrounds. The sample classrooms also represented various classroom gender structures including mixed-gender, single-gender, and gender grouping during literacy instruction (Alloway et al., 2002). The study consisted of two phases. In the first phase, surveys were conducted concerning teachers' beliefs about boys and literacy along with a parent survey about how literacy can be enriched at home and school. An electronic forum was also opened to discuss issues surrounding boys and literacy development (Alloway et al., 2002). In phase two of the study, 48 teachers in 12 schools were selected from phase one to receive training to increase their understanding of the relationship between gender and literacy, work with the researchers to reform their current teaching practices, and develop methods to evaluate and report the results of their new strategies (Alloway et al., 2002). Several intervention strategies were used in the sample classrooms. One strategy focused on making literacy instruction more active allowing for more personal choice. A second strategy encouraged teachers and students to see boys as learners who can be actively engaged in a literacy classroom. Another teaching strategy opened discussions concerning how boys are portrayed in literature, social media, and visual media. Teachers were also encouraged to find ways to use these

resources to engage male students in literacy activities (Alloway et al., 2002). Results of the research indicated that boys were less interested in traditional literacy activities including print reading and writing materials and gave minimal effort when completing and presenting the more traditional activities. However, boys were interested in literacy activities that involved electronic and digital materials, and real-life applications like debate and drama (Alloway et al., 2002).

Noble, Farah, & McClandliss (2006) found that the average five-year-old girl is 16% more likely to be school ready than the average five-year-old boy, independent of family backgrounds. Onatsu-Arvilommi and Nurmi (2000) found that boys have higher levels of task-avoidant behaviors which can impact learning. Boys also appear to have lower intrinsic motivation to read than girls (McGeown, Goodwin, Henderson, & Wright, 2012), which influences their reading achievement (Logan & Medford, 2011).

McGeown et al. (2012) examined gender differences in reading abilities and motivation, specifically looking at whether differences are due to biological gender or gender identity. The study involved 182 children, ages 8-11 years, 98 of whom were males. The subjects completed a reading comprehension assessment along with reading motivation and gender identity questionnaires. Results of the study showed no significant differences in reading skills or extrinsic motivation, but girls indicated higher intrinsic motivation which appeared to be associated with gender identity. Subjects associated aspects of reading motivation with feminine identities more than with male identities (McGeown et al., 2012). This may be because mothers are most often children's primary reading partners (Evans, Shaw, & Bell, 2000).

Chipere (2014) found that girls perform better on phoneme segmentation tasks. The study involved 140 children in kindergarten through second grade who completed the phoneme segmentation fluency, letter sound fluency, and nonsense word fluency subsets of DIBELS. Results indicated that girls scored higher in all three subsets and that the differences between genders increased between kindergarten and second grade (Chipere, 2014).

According to Wilsenach and Makaure (2017), gender differences in reading development exist and boys' delayed auditory processing abilities may affect their processing of sounds impacting their learning the phonological skills associated with reading. Wilsenach and Makaure (2017) studied the phonological processing of bilingual children in South Africa. Third graders who had received reading instruction in English were tested on phonological processing, phonological memory, and reading achievement. Phonological processing was tested through phoneme isolation and elision tasks. Phoneme memory was assessed by examining subjects' ability to remember digits and non-word repetition tests along with rapid naming tasks including letter and object naming. Reading abilities were assessed through word reading and fluency tasks. In all the tests measuring reading and some aspects of phonological processing, girls significantly outperformed the boys. The girls also did better than boys on tasks which required higher levels of cognitive processing (Wilsenach & Makaure, 2017).

This discrepancy may be caused by developmental differences between genders. A study by Deasley, Evans, Nowak & Willoughby (2018) indicated that girls outperform and gain literacy skills faster than boys in the early school years. The study observed 128 junior kindergarten children in Canada. Within the sample, 66 children were boys.

Differences between genders in emergent literacy and behavior was examined while students listened to and interacted with four types of books. The types of books included alphabet books with basic text and pictures, alphabet books with complex text and pictures, digital alphabet books, and illustrated storybooks. Researchers observed that both genders were most engaged while listening to storybooks, that boys were less engaged while listening to complex alphabet books, and girls preferred listening to storybooks over simple alphabet books. When provided with independent reading time, both genders preferred digital alphabet books, but boys spent less time on tasks related to letter naming than girls (Deasly et al., 2018).

Summary

Many schools administer prekindergarten assessments (Shields, DeMeo-Cook, & Greller, 2016). Results of the assessments are used for various reasons, most commonly for individualized instruction, to identify students with learning delays, and for kindergarten enrollment (Shields et al., 2016). This chapter presented literature on developmental theories, preschool programs and the relationship between kindergarten prescreening results, and performance in kindergarten. Foundational reading skills instruction and the development of these skills was also discussed. The progression of reading skills throughout the kindergarten year and their relationship to kindergarten assessments were addressed along with gender differences in emergent literacy development. In Chapter 3, the research design, sample population, and sampling procedures of the study are presented. The instrumentation, data collection procedures, data analysis and hypothesis testing, and limitations are also discussed.

Chapter 3

Methods

The purpose of this study was to investigate the effectiveness of the District A Kindergarten-Jumpstart screening tool in determining kindergarten readiness. The current study was conducted to examine to what extent a relationship exists between the District A Kindergarten-JumpStart screening and beginning of the year kindergarten achievement as measured by the beginning of the year DIBELS Next Kindergarten Reading scores in letter naming fluency (LNF) and first sound fluency (FSF). The study also examined the differences in the relationship between the District A Kindergarten-JumpStart screening and beginning of the year kindergarten DIBELS Next Kindergarten Reading scores in LNF and FSF based upon gender, race, and socioeconomic status. Included in this chapter are the details of the design of the study and descriptions of how each research question was addressed. The chapter includes an explanation of the research design, a description of participant selection, measurement tools and their reliability and validity, data collection, data analysis, hypothesis testing, and the study's limitations.

Research Design

The current study was designed to be a quantitative correlational study. This design was appropriate because archival data was used and the relationship between two numerical variables was examined. The dependent variables in this study were the District A Kindergarten Screening-JumpStart scores in LNF and FSF and the beginning of the year kindergarten DIBELS Next Kindergarten Reading scores for LNF and FSF. The independent variables were gender, race, and socioeconomic status.

Selection of Participants

The purposive sample was obtained using kindergarten students from a suburban school district. The sample consisted of 2,937 students from District A attending school in the district during the 2016-2017 and 2017-2018 school years. Several criteria existed for selection of sample students. One cohort included students who completed the District A Kindergarten Screening-JumpStart in Spring 2016, began the 2016-2017 school year in District A's kindergarten, and completed the beginning of the year DIBELS Next Kindergarten Reading assessment during the 2016-2017 school year. The second cohort included students who completed the District A Kindergarten-Screening JumpStart in Spring 2017, began the 2017-2018 school year in District A's kindergarten, and completed the beginning of the year DIBELS Next Kindergarten Reading assessment during the 2017-2018 school year.

Measurement

Two testing instruments were used in this study to measure students' LNF and FSF skills in the spring prior to their kindergarten year and their LNF and FSF skills at the beginning of their kindergarten year. These instruments were District A's Kindergarten Screening-JumpStart assessment and the DIBELS Next Kindergarten Reading assessment. In this section, both measurement tools are discussed along with reliability and validity for both instruments. Demographics were also measured to examine the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF and FSF as affected by gender, race, and socioeconomic status. Measurement for race demographics in this study included White, African American, Hispanic and Multi-race

and Other race. Gender categories included male and female. Categories for measuring

socioeconomic status included free or reduced lunch and full price lunch.

District A measurement tool. District A developed its own kindergarten

prescreening tool, Kindergarten Screening-JumpStart assessment (see Appendix C). The

District A Kindergarten Screening-JumpStart assessment was administered each April in

2017 and 2018 prior to students entering kindergarten the following fall. The purpose of

the District A Kindergarten Screening-JumpStart assessment is to determine the skills a

child possesses prior to entering kindergarten, if a child could benefit from the district's

summer JumpStart kindergarten program, or if a child needs additional support in the

kindergarten classroom (District A Assistant Superintendent of Early Childhood and

Strategic Engagement, personal communication, June 17, 2018). The District A

Kindergarten Screening-JumpStart assessment includes nine sections, eight to measure

skills and an additional section to record the administrator's observations of the child

during testing. Assessment administrators are briefly trained by instructional coaches.

Test administrators include instructional coaches, kindergarten teachers, speech teachers,

social workers, reading specialists, preschool teachers, school nurses, and school

counselors (District A Assistant Superintendent of Early Childhood and Strategic

Engagement, personal communication, June 17, 2018). Skills assessed are recognizing

beginning sounds, recognizing upper and lowercase letters, identifying rhymes, counting

to 25 by ones, describing objects using names of shapes, identifying colors, developing

fine motor skills including cutting and pencil grasp, and developing gross motor skills

including balancing on one foot and on alternating feet (District A, 2016). Student scores

are recorded as the number of correct items in each section of the screening. For the

purpose of this research, the scores from District A's archives on the LNF and FSF of the

Kindergarten Screening-JumpStart assessment subsets were examined. There are five

points possible in the FSF section of the District A Kindergarten Screening-JumpStart

assessment and 26 points possible in the LNF section of the District A Kindergarten

Screening-JumpStart assessment (District A, 2016).

Lunenburg and Irby (2008), defined validity as "the degree to which an

instrument measures what it purports to measure" (p. 181). Measures were taken by

District A to determine if the Kindergarten Screening-JumpStart results were valid. The

screening was developed by a panel of district experts and modelled after evidence-based

assessments including the Northwest Evaluation Association (NWEA) Measures of

Academic Progress (MAP) and the Ages and Stages Questionnaire (ASQ) (District A

Coordinator of Assessment and Research, personal communication, 2018). District A

verified that the screening results correlated with NWEA MAP scores (District A

Coordinator of Assessment and Research, personal communication, 2018). The

information derived from the NWEA MAP scores was used to develop related questions

in District A's prescreening. The NWEA used Rasch UnIT measures, a measurement

scale used to simplify test score interpretation (Thum & Hauser, 2015). The RIT scores

directly related to curriculum scales in the tested subject areas (Thum & Hauser, 2015).

The RIT scale norms study provided status and norms for both individual students and for

schools (Thum & Hauser, 2015). Kindergarten norms were established for reading and

mathematics (Thum & Hauser, 2015). Student status on reading norms was established

on the kindergarten MAP. The mean for the beginning of year kindergarten MAP was

41.0 with a standard deviation of 3.54.

In order to establish validity, the items in the District A Kindergarten Screening-JumpStart were also modelled after other known instruments, including the Ages and Stages Questionnaire (ASQ). The ASQ is a screening tool which is completed by parents or primary caregivers that can be administered to children ranging from one month to five and a half years of age (Squires & Bricker, 2019). The screening provides a profile of the child's strengths and needs which may indicate the need for further intervention and helps guide parents and educators (Squires & Bricker, 2019).

Lunenburg and Irby (2008) identified reliability as the degree to which a testing instrument measures what was intended to measure. Measures were taken by District A to determine if the Kindergarten Screening-JumpStart results were reliable. The screening was developed by a panel of district experts and modelled after evidence-based assessments including the NWEA MAP and the ASQ (District A Coordinator of Assessment and Research, personal communication, 2018). District A also established the reliability of its Kindergarten Screening-JumpStart assessment by administering the screening in Spring 2017 to all students who planned to enter kindergarten the upcoming fall and rescreening a subset of the same group of students two months later, prior to their attending the JumpStart kindergarten program (District A Coordinator of Assessment, 2018). In addition, when determining an average score for each section of the Kindergarten Screening-JumpStart assessment, the district noted that the average score for students who completed the Kindergarten Screening-JumpStart assessment in the spring of 2016 was the same as the average score for students who completed the screening in the spring of 2017. In 2016, the average Kindergarten Screening-JumpStart composite score was 154 for all students who completed the screening in District A. In

2017, the average screening composite score was 157 for all students who completed the screening in District A (District A, 2018).

DIBELS Next Beginning of the Year Kindergarten Reading Assessment. The DIBELS Next beginning of the year Kindergarten Reading assessments were administered during the month of August in 2016 and 2017 (see Appendix D). The purpose of the DIBELS Next Kindergarten Reading assessment is to assess whether entering kindergartners had attained early literacy skills (Kaminski & Good, 2008). The beginning of the year DIBELS Next Kindergarten Reading assessment includes four segments. Students have one minute to complete as many items in each segment as they can. Segments include FSF, in which students are asked to identify the first sound of a given word, and LNF, in which students are asked to identify the names of upper and lowercase letters (Kaminski & Good, 2008). The benchmark scores of 10 for FSF and 26 for LNF were established for the beginning of the year assessment (Kaminski & Good, 2008).

DIBELS benchmark goals are empirically derived and criterion-referenced. The scores represent adequate reading skills for a particular grade and time of year (Kaminski & Good, 2008). The benchmark scores are based on research that examined the predictive probability of a score on a measure at a particular time compared to later DIBELS measures. Benchmark scores indicate whether or not a student is likely to achieve the next DIBELS goal or reading outcome with effective core instruction (Kaminski & Good, 2008). Scoring on the DIBELS assessment are well-below benchmark, below the benchmark, at benchmark or above benchmark (Kaminski & Good, 2008). Students scoring at benchmark or above benchmark on the beginning of

the year kindergarten DIBELS Next Kindergarten Reading assessment are considered ready for kindergarten. Students scoring in the above benchmark range have a 90%-99% likelihood of achieving early literacy and reading goals with effective instruction and may benefit from more advanced instruction (Kaminski & Good, 2008). Students scoring at the benchmark range are 70%-85% likely to achieve subsequent early literacy and reading goals with effective instruction. Students scoring below benchmark on the beginning of the year DIBELS Next Kindergartern Reading assessment are considered underprepared for kindergarten and will need additional support. Students scoring below benchmark have a 40%-60% likelihood of achieving future reading and literacy goals. These students need additional, targeted instructional support and regular progress monitoring. Students scoring well below benchmark are considered to have a 10%-20% likelihood of achieving literacy and reading goals. These students need intensive support, including interventions that differ from the core curriculum and regular instructional support (Kaminski & Good, 2008).

The DIBELS reading assessment is commercially produced. According to the University of Oregon Center on Teaching and Learning (2018), the reliability of LNF was established by comparing the beginning-of-the-year and middle-of-the-year scores in LNF. Test-retest reliability for LNF was .82 in Grades K and 1. Validity LNF was established by comparing scores on DIBELS 8th Edition to DIBELS Next composite scores. For LNF, concurrent validity coefficients ranged from a low of .63 in the spring of Grade 1 to a high of .89 in the spring of kindergarten. Reliability for FSF was established by giving all measures within a two-week time period and correlating the

scores (Kaminski & Good, 2008). The inter-rater reliability for FSF was .94, single-form alternate form was .85 and three-form alternate form was .95.

Data Collection Procedures

The researcher submitted a written request to District A for the results of the District A Kindergarten Screening-JumpStart assessment and the DIBELS Next Kindergarten Reading assessment for the 2016-2017 and 2017-2018 school years. Approval was given by District A on September 1, 2017 (see Appendix A). Next, the proposal for research was submitted to Baker University's Institutional Review Board (IRB) on March 1, 2019 (see Appendix B). Permission was granted by the IRB on March 1, 2019. Data was obtained from District A Department of Assessment and Research. Scores for the 2016-2017 and 2017-2018 District A Kindergarten Screening-JumpStart assessment in the areas of LNF and FSF along with demographic data for student gender, race, and socioeconomic status were downloaded and organized in excel. Information concerning DIBELS Next Kindergarten Reading assessments for the 2016-2017 and 2017-2018 school years were downloaded and organized in excel. Demographic information including the gender, race, and socioeconomic status of kindergarten students for the 2016-2017 and 2017-2018 school years was also included in the worksheets.

Data Analysis and Hypothesis Testing

Correlational data analysis was used for this research. Correlational data analysis focuses on the association between two numerical variables and determines if the association is statistically significant (Tanner, 2012). The variables measured to address the research questions were letter naming fluency (LNF) and first sound fluency (FSF). The demographics measured were gender, race, and socioeconomic status. This section

outlines the research questions, hypothesis and measurements used to index the strength of the relationship between variables.

RQ1. To what extent does a relationship exist between the District A Kindergarten Screening-JumpStart scores and beginning of the year DIBELS Next Kindergarten Reading scores in LNF?

H1. There is a relationship between the District A Kindergarten Screening-JumpStart scores and beginning of the year kindergarten achievement, as measured by DIBELS Next Kindergarten Reading scores in LNF.

A Pearson product moment correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-JumpStart scores and the DIBELS Next LNF scores. A one-sample t-test was conducted to test for the statistical significance of the correlation coefficient. The level of significance was set at .05.

RQ2. To what extent does a relationship exist between the District A Kindergarten Screening-JumpStart scores and beginning of the year DIBELS Next Kindergarten Reading scores in FSF?

H2. There is a relationship between the District A Kindergarten Screening-JumpStart scores and beginning of the year kindergarten achievement, as measured by DIBELS Next Kindergarten Reading scores in FSF.

A Pearson product moment correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-JumpStart assessment scores and the DIBELS Next Kindergarten Reading FSF scores. A

one-sample t-test was conducted to test for the statistical significance of the correlation coefficient. The level of significance was set at .05.

RQ3. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF affected by gender?

H3. The relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF is affected by gender.

Prior to conducting the hypothesis test the data was disaggregated by gender. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in LNF for female students. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in LNF for male students. A Fisher's z test was conducted to test H3. The two sample correlation coefficients were compared. The level of significance was set at .05.

RQ4. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF affected by gender?

H4. The relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF is affected by gender.

Prior to conducting the hypothesis test the data was disaggregated by gender. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in FSF for female students. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in FSF for male students. A Fisher's z test was conducted to test H4. The two sample correlation coefficients were compared. The level of significance was set at .05.

RQ5. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF affected by race?

H5. The relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF is affected by race.

Prior to conducting the hypothesis test the data was disaggregated by race. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading

scores in LNF for White students. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in LNF for African American students. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in LNF for Hispanic students. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in LNF for Multi-race students. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in LNF for Other-race students. A Fisher's z test was conducted to test H5. The five sample correlation coefficients were compared. The level of significance was set at .05.

RQ6. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF affected by race?

H6. The relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF is affected by race.

Prior to conducting the hypothesis test the data was disaggregated by race. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in FSF for White students. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in FSF for African American students. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in FSF for Hispanic students. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in FSF for Multi-race students. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in FSF for Other-race students. A Fisher's z test was conducted to test H6. The five sample correlation coefficients were compared. The level of significance was set at .05.

RQ7. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF affected by socioeconomic status?

H7. The relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF is affected by socioeconomic status.

Prior to conducting the hypothesis test the data was disaggregated by socioeconomic status. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in LNF for students receiving free or reduced lunch. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in LNF for students paying the full price for lunch. A Fisher's z test was conducted to test H7. The two sample correlation coefficients were compared. The level of significance was set at .05.

RQ8. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF affected by socioeconomic status?

H8. The relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF is affected by socioeconomic status.

Prior to conducting the hypothesis test the data was disaggregated by socioeconomic status. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart

scores and the beginning of the year kindergarten achievement on DIBELS Next

Kindergarten Reading scores in FSF for students receiving free or reduced lunch. A

correlation coefficient was calculated to index the strength and direction of the

relationship between the District A Kindergarten Screening-Jumpstart scores and the

beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading

scores in FSF for students paying the full price for lunch. A Fisher's z test was

conducted to test H8. The two sample correlation coefficients were compared. The level

of significance was set at .05.

Limitations

Limitations are factors that may affect the researcher's ability to generalize the

results of the study (Lunenburg & Irby, 2008). This study could have been affected by

several limitations beyond the control of the researcher. These included:

1. The level of training received by the personnel administering the District A

Kindergarten Screening-JumpStart assessment. The level of training differed

depending upon the trainer, building site, and personnels' experience with the

testing instrument.

2. The level of training received by the personnel administrating the DIBELS

Next Kindergarten Reading assessments. The level of training differed depending

upon the trainer, building site, and personnels' experience with the testing

instrument.

3. Students receiving special services prior to completing the District A

Kindergarten Screening-JumpStart which could have influenced scores.

4. Other personnel besides kindergarten teachers administered the District A

Kindergarten Screening-JumpStart assessment.

5. Other personnel besides kindergarten teachers administered the kindergarten

DIBELS Next Kindergarten Reading assessment.

6. Varied preschool experiences for students may have influenced scores on the

District A Kindergarten Screening-JumpStart assessment.

Summary

Chapter 3 provided an overview of the quantitative research study. The chapter

also included the research questions, hypotheses, research design, selection of

participants, data collection procedures, measurement, analysis, and testing limitations.

Information was provided on District A's Kindergarten Screening-JumpStart scores and

DIBELS Next Kindergarten Reading assessment, the measurement tools used in the

study, as well as information on establishing both measure's reliability and validity. The

results of the hypothesis testing are presented in Chapter 4.

Chapter 4

Results

The purpose of this study was to examine the extent a relationship exists between the District A Kindergarten Screening-JumpStart assessment and beginning of the year kindergarten achievement as measured by the beginning of the year DIBELS Next Kindergarten Reading scores in letter naming fluency (LNF) and first sound fluency (FSF). The study also examined the extent the relationship between the District A Kindergarten Screening-JumpStart and beginning of the year kindergarten DIBELS Next Kindergarten Reading scores in LNF and FSF is affected by gender, race, and socioeconomic status. This chapter details the descriptive statistics for the study along with hypothesis testing. Hypothesis testing includes the research questions, hypotheses, the analyses, and results of the testing. The chapter concludes with a summary of the results.

Descriptive Statistics

This section of the descriptive statistics includes the frequencies and percentages for gender, race, and socioeconomic status (SES). Table 3 presents frequencies and percentages for gender. Gender is evenly divided for the 2,937 students. In 2016-2017 there were 716 females and 749 males. In 2017-2018 there were 712 females and 760 males.

Table 3

Frequencies and Percentages for Gender

Gender	N	%
Males	1428	48.6
Females	1509	51.4

Table 4 presents the frequencies and percentages for race.

Table 4

Frequencies and Percentages for Race

Race	N	%
Black	164	5.6
White	2115	72.0
Hispanic	424	14.4
Multi-race	154	5.2
Other race	80	2.7
Total	2937	100.0

Table 5 presents frequencies and percentages for SES.

Table 5

Frequencies and Percentages for SES

SES	N	%
Free/Reduced	2220	75.6
Full Pay	717	24.4
Total	2937	100.0

Hypothesis Testing

The results of the hypothesis testing conducted to address each research question posed for the current study are explained in this section. Each of the research questions are listed with the corresponding hypothesis statement. A description of the analysis used to test each hypothesis is described, and the results of the testing are provided.

RQ1. To what extent does a relationship exist between the District A Kindergarten Screening-JumpStart scores and beginning of the year kindergarten DIBELS Next Kindergarten Reading scores in LNF?

H1. There is a relationship between the District A Kindergarten Screening-JumpStart assessment scores and beginning of the year kindergarten achievement, as measured by DIBELS Next Kindergarten Reading scores in LNF.

A Pearson product moment correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-JumpStart scores and beginning of the year kindergarten DIBELS Next Kindergarten Reading scores in LNF. A one sample t test was conducted to test for the statistical significance of the correlation coefficient. The level of significance was set at .05.

The correlation coefficient ($r = .403$) provided evidence for a moderately strong positive relationship between the District A Kindergarten Screening-JumpStart scores and beginning of the year DIBELS Next Kindergarten Reading scores in LNF. The results of the one sample t test indicated a statistically significant relationship between the District A Kindergarten Screening-JumpStart scores and beginning of the year DIBELS Next Kindergarten Reading scores in LNF, $df = 2935$, $p = .000$. This finding provides evidence that the Kindergarten Screening-Jumpstart scores are good predictors of beginning of the year DIBELS Next Kindergarten Reading scores in LNF. H1 was supported.

RQ2. To what extent does a relationship exist between the District A Kindergarten Screening-JumpStart scores and beginning of the year kindergarten DIBELS Next Kindergarten Reading scores in FSF?

H2. There is a relationship between the District A Kindergarten Screening-JumpStart scores and beginning of the year kindergarten achievement, as measured by DIBELS Next Kindergarten Reading scores in FSF.

A Pearson product moment correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-JumpStart scores and beginning of the year kindergarten DIBELS Next Kindergarten Reading scores in FSF. A one sample *t* test was conducted to test for the statistical significance of the correlation coefficient. The level of significance was set at .05.

The correlation coefficient ($r = .431$) provided evidence for a moderately strong positive relationship between the District A Kindergarten Screening-JumpStart scores and beginning of the year DIBELS Next Kindergarten Reading scores in FSF. The results of the one sample *t* test indicated a statistically significant relationship between the District A Kindergarten Screening-JumpStart scores and beginning of the year DIBELS Next Kindergarten Reading scores in FSF, $df = 2935$, $p = .000$. This finding provides evidence indicating that the Kindergarten Screening-Jumpstart scores are good predictors of beginning of the year DIBELS Next Kindergarten Reading scores in FSF. H2 was supported

RQ3. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF affected by gender?

H3. The relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF is affected by gender.

Prior to conducting the hypothesis test the data was disaggregated by gender. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in LNF for female students. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in LNF for male students. A Fisher's z test was conducted to test H3. The two sample correlation coefficients were compared. The level of significance was set at .05.

The results of the Fisher's z test for two correlations indicated no difference between the two values, $z = 0.230$, $p = .617$. The correlation for females ($r = .406$, $n = 1428$) is not significantly different from the correlation for males ($r = .399$, $n = 1509$). The relationship between Kindergarten Screening-JumpStart scores and beginning of the year DIBELS Next Kindergarten Reading scores in LNF is not affected by gender. H3 was not supported.

RQ4. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF affected by gender?

H4. The relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF is affected by gender.

Prior to conducting the hypothesis test the data was disaggregated by gender. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in FSF for female students. A correlation coefficient was calculated to index the strength and direction of the relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year kindergarten achievement on DIBELS Next Kindergarten Reading scores in FSF for male students. Ten Fisher's z test was conducted to test H4. The two sample correlation coefficients were compared. The level of significance was set at .05.

The results of the Fisher's z test for two correlations indicated no difference between the two values, $z = .23$, $p = .818$. The correlation for females ($r = .406$, $n = 1428$) is not significantly different from the correlation for males ($r = .399$, $n = 1509$). The relationship between Kindergarten Screening-JumpStart scores and beginning of the year DIBELS Next Kindergarten Reading scores in FSF is not affected by gender. H4 was not supported.

RQ5. To what extent the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF affected by race?

H5. The relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF is affected by race.

A Fisher's *z* test was conducted to address to what extent the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF is affected by race. The two sample correlations were compared. The level of significance was set at .05. Table 6 provides a summary of the results of the Fisher's *z* tests that were used to compare the correlations between the District A Kindergarten Screening-JumpStart scores and the beginning of the year Kindergarten DIBELS Next Kindergarten Reading scores for LNF, based on race. The results of the Fisher's *z* tests that were used to compare the correlations between the District A Kindergarten Screening-JumpStart scores and the beginning of the year Kindergarten DIBELS Next Kindergarten Reading scores for LNF, based on race, indicated the correlations were different between Hispanic and white students, *z* = -3.93, *p* = .000. The results for all other comparisons based on race indicated no significant difference between the correlations. H5 was supported.

Table 6

Fisher's z Tests for the Effect of Race on the Correlations Between District A Kindergarten Screening-JumpStart Scores and Beginning of the Year DIBELS Next Kindergarten Reading Scores for LNF

R1	r_{R1} (n)	R2	r_{R2} (n)	z	p
All other	.315 (80)	Black	.351 (164)	-0.29	.772
		Hispanic	.238 (424)	0.67	.503
		Multi	.356 (154)	-0.33	741
		White	.424 (2115)	-1.09	.276
Black	.351 (164)	Hispanic	.238 (424)	1.34	.180
		Multi	.356 (154)	-0.05	.960
		White	.424 (2115)	-1.05	.294
Hispanic	.238 (424)	Multi	.356 (154)	-1.37	.171
		White	.424 (2115)	-3.93	.000
Multi	.356 (154)	White	.424 (2115)	-0.95	.334

RQ6. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF affected by race?

H6. The relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF is affected by race.

Ten Fisher's z tests were conducted to address to what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF was affected by race. The two sample correlations were compared. The level of significance was set at .05.

Table 7 provides a summary of the results of the Fisher's *z* tests that were used to

compare the correlations between the District A Kindergarten Screening-JumpStart

scores and the beginning of the year Kindergarten DIBELS Next Kindergarten Reading

scores for FSF, based on race. The results indicated no significant differences between

the correlations. The results of the Fisher's *z* tests that were used to compare the

correlations between the District A Kindergarten Screening-JumpStart scores and the

beginning of the year Kindergarten DIBELS Next Kindergarten Reading scores for FSF,

based on race, indicated no significant differences between the correlations. H6 was not

supported.

Table 7

Correlations Between District A Kindergarten Screening-JumpStart Scores and

Beginning of the Year DIBELS Next Kindergarten Reading Scores for FSF

R1	r_{R1} (*n*)	R2	r_{R2} (*n*)	*z*	*p*
All other	.379 (80)	Black	.387 (164)	-0.07	.944
		Hispanic	.353 (424)	0.24	.810
		Multi	.414 (154)	-0.30	.764
		White	.431 (2115)	-0.46	.646
Black	.387 (164)	Hispanic	.353 (424)	0.43	.667
		Multi	.414 (154)	-0.28	.780
		White	.431 (2115)	-0.65	.516
Hispanic	.353 (424)	Multi	.356 (154)	-0.75	.453
		White	.424 (2115)	-1.73	.084
Multi	.414 (154)	White	.431 (2115)	-0.25	.803

RQ7. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF affected by socioeconomic status?

H7. The relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF is affected by socioeconomic status.

A Fisher's *z* test was conducted to address to what extent the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in LNF is affected by socioeconomic status. The two sample correlations were compared. The level of significance was set at .05.

The results of the Fisher's *z* test for two correlations indicated no difference between the two values, $z = -2.18$, $p = .029$. The correlation for students receiving free and reduced lunch ($r = .340$, $n = 717$) is not significantly different from the correlation for students receiving full pay lunch ($r = .420$ $n = .2220$). The relationship between Kindergarten Screening-JumpStart scores and beginning of the year DIBELS Next Kindergarten Reading scores in LNF is not affected by socioeconomic status. H7 was not supported.

RQ8. To what extent is the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF affected by socioeconomic status?

H8. The relationship between the District A Kindergarten Screening-Jumpstart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF is affected by socioeconomic status.

A Fisher's *z* test was conducted to address to what extent the relationship between the District A Kindergarten Screening-JumpStart scores and the beginning of the year DIBELS Next Kindergarten Reading scores in FSF is affected by socioeconomic status. The two sample correlations were compared. The level of significance was set at .05.

The results of the Fisher's *z* test for two correlations indicated no difference between the two values, *z* = -1.5, *p* = .133. The correlation for students receiving free and reduced lunch (*r* = .336, *n* = 717) was not significantly different from the correlation for students receiving full pay lunch (*r* = .392 *n* = .2220). This indicates that the relationship between Kindergarten Screening-JumpStart scores and beginning of the year DIBELS Next Kindergarten Reading scores in FSF is not affected by socioeconomic status. H8 was not supported.

Summary

The descriptive statistics for the 2,937 kindergarten students who attended school in District A during the 2016-2017 and 2017-2018 school years were described in this chapter. The relationship between the District A Kindergarten Screening-JumpStart scores and DIBELS Next Kindergarten Reading scores in LNF and FSF were discussed. The findings provided evidence that the Kindergarten Screening-Jumpstart scores were good predictors of beginning of the year DIBELS Next Kindergarten Reading scores in LNF and FSF. Additionally, the study examined the extent the relationship between the District A Kindergarten Screening-JumpStart and beginning of the year kindergarten DIBELS Next scores in LNF and FSF was affected by gender, race, and socioeconomic status. The results of the study indicated that the relationship between Kindergarten Screening-JumpStart scores and beginning of the year DIBELS Next Kindergarten

Reading scores in LNF and FSF were not affected by gender and socioeconomic status.
In Chapter 5, a summary of the research is provided, along with major findings related to
the literature, implications for further action, recommendations for future research, and
the conclusions.

Chapter 5

Interpretation and Recommendations

The current study was conducted to examine the extent a relationship exists between the District A Kindergarten Screening-JumpStart assessment and beginning of the year kindergarten achievement as measured by the beginning of the year DIBELS Next Kindergarten Reading scores in LNF and FSF. The study also examined the extent the relationship between the District A Kindergarten Screening-JumpStart and beginning of the year kindergarten DIBELS Next scores in LNF and FSF is affected by gender, race, and socioeconomic status. In this chapter, a study summary, the findings related to the literature, and the conclusions are provided.

Study Summary

This section provides a summary of the current study. An overview of the problem is provided, followed by the purpose statement and research questions. This section concludes with a description of the methodology and major findings.

Overview of the problem. School districts often use kindergarten prescreening assessments to determine the readiness skills students possess prior to entering kindergarten (Shields et al., 2016). As preschool programs have expanded, efforts to monitor and document students' progress have increased and state policymakers have established standards for monitoring preschool programs (Shepard et al., 1998). While some districts develop their own kindergarten prescreening tools, other districts use commercially produced screenings (BUILD Initiative, 2018). According to Shields et al. (2016), limited research has explored the relationship between kindergarten screenings and kindergarten learning outcomes.

Purpose statement and research questions. The current study was conducted to examine the extent a relationship exists between the District A Kindergarten Screening-JumpStart assessment and beginning of the year kindergarten achievement as measured by the beginning of the year DIBELS Next Kindergarten Reading scores in LNF and FSF. The study also examined the extent the relationship between the District A Kindergarten Screening-JumpStart and beginning of the year kindergarten DIBELS Next scores in LNF and FSF is affected by gender, race, and socioeconomic status. Eight research questions were written to address the purpose of the study.

Review of the methodology. The current study was designed to be a quantitative correlational study. This design was appropriate because archival data was used and the relationship between two numerical variables was examined. The dependent variables in this study were the District A Kindergarten Screening-JumpStart scores in LNF and FSF and the beginning of the year kindergarten DIBELS Next Kindergarten Reading scores for LNF and FSF. The independent variables were gender, race, and socioeconomic status. Two testing instruments were used in this study. These instruments were the District A Kindergarten Screening-JumpStart assessment which was administered in the spring 2016-2017 and 2017-2018 school years and the DIBELS Next Kindergarten Reading assessment which was given in the fall of the 2016-2017 and 2017-2018 school years.

Selection of participants. The purposive sample was obtained using kindergarten students from a suburban school district. The sample consisted of 2,937 kindergarten students from District A attending school in the district during the 2016-2017 and 2017-2018 school years.

Major findings. The results of the study indicated that a moderately strong

relationship exists between District A Kindergarten Screening-JumpStart scores and

beginning of the year DIBELS Next Kindergarten Reading scores in LNF and FSF. The

results of the study indicated the relationship between Kindergarten Screening-JumpStart

scores and beginning of the year DIBELS Next Kindergarten Reading scores in LNF and

FSF are not affected by gender and socioeconomic status. Results indicated that the

correlations were different between Hispanic and White students when comparing scores

in LNF. The results for all other comparisons based on race indicated no significant

difference between the correlations. A summary of the research is provided, along with

major findings related to the literature, implications for further action, recommendations

for future research, and the conclusions.

Findings Related to the Literature

Included in this section are the current study's findings related to the literature.

Rathvon (2004) found through research that screening children prior to kindergarten

reduces the predictive accuracy of the assessments. Rathvon (2004) attributed this to the

children's lack of language and literacy experiences and their lack of familiarity with the

classroom setting which may cause behavior, attention, and motivation to interfere with

results. The findings of the current study contradict Rathvon (2004) because results

indicate that the Kindergarten Screening-Jumpstart scores accurately predicted beginning

of the year DIBELS Next Kindergarten Reading scores in LNF and FSF. The results of

this study were also inconsistent with the findings of Miller-Whitehead (2001). Miller-

Whitehead (2001) indicated that kindergarten prescreening assessments may be

inconsistent due to limited English proficiency, minimal prior school experience, insufficient test items, and testing measures that do not align with measurable objectives.

A study by Morris et al. (2003) determined that letter recognition skills at the beginning and middle of kindergarten predicted reading success in first and second grade. A study by Bishop (2003) also found similar results when analyzing kindergarten screenings in Florida. The Get Ready to Read Screener is used as a kindergarten prescreening tool. It is a 20-item multiple-choice measure including items that assess knowledge of letter names and sounds, phonemic awareness, print concepts, and emergent writing (Phillips et al., 2008). The questions in the screener were based on 14 measures Whitehurst (2008) established. These measures, which were obtained when children were four-years-old, predicted second-grade reading abilities with a 78% classification accuracy (Lonigan et al., 2000; Whitehurst & Lonigan, 1998).

Conclusions

In this section, conclusions drawn from the current study related to the relationship between the results of LNF and FSF scores on the Kindergarten Screening-JumpStart and the results of the LNF and FSF scores on the DIBELS Next Kindergarten Reading assessment as related to gender, race, and socioeconomic status are discussed. Implications for action and recommendations for future research are provided with concluding remarks completing this section.

Implications for action. The accuracy of a kindergarten prescreening in predicting academic success in kindergarten and the intended use of the screening results should be evaluated when selecting kindergarten prescreening tools. School districts should determine if prescreenings predict kindergarten success, and if they do not, then

districts should consider discontinuing prescreening and conduct further research on the screenings' effectiveness. Another consideration for eliminating one of the screenings is if both screenings predict similar levels of success. Screenings are not only costly, but they take time to administer. If the screenings are inaccurate predictors of academic success, then the time spent screening may be better utilized preparing children for school.

When states and school districts are developing policies concerning the use of kindergarten prescreening assessments, they should include information regarding the fidelity of the assessment results. By insuring the fidelity of the screening instrument, enrollment considerations could be given to children who are not successful or need additional support. A final implication for action is for school districts to consider the ease in giving the assessment when selecting kindergarten prescreening tools.

Recommendations for future research. The present study added to needed research related to the topic. This section will provide considerations for further research. Further research should examine whether items on the kindergarten prescreening tool are compatible with items on the end of kindergarten assessment. The relationship between prescreening results and end of the kindergarten year outcomes would also be informative. Another recommendation for future research is to evaluate whether kindergarten prescreening scores classifying students' scores as high, average and low are accurate. This study examined how the prescreening results related to beginning of the year assessment outcomes, not on how teachers should be to use the outcomes to use the results for placement or balancing classes. Future research should explore how instructional practices change in response to prescreening assessment

results. A longitudinal study analyzing if the kindergarten prescreening results are consistent with third grade assessment results would also be informative.

A final recommendation for future research is an investigation into the prescreening instruments various schools implement that ensure the cognitive, emotional, and social domains are assessed. This study examined the areas of LNF and FSF when comparing the kindergarten prescreening and beginning on kindergarten assessment results. Different kindergarten prescreening assessments that focus on other areas may be of equal importance when evaluating kindergarten readiness. In addition, this study was restricted to the District A Kindergarten Screening-JumpStart while numerous other school-based and commercially produced kindergarten prescreening assessments exist. Future research should involve comparisons of available kindergarten prescreening tools. Additional research should be conducted to determine if kindergarten prescreening assessments predict end of the year kindergarten outcomes and if the predictions extend beyond LNF and FSF to include mathematics skills and social skills.

Concluding remarks. The intent of this study was to examine the extent a relationship exists between the District A Kindergarten Screening-JumpStart assessment and beginning of the year kindergarten achievement as measured by the beginning of the year DIBELS Next Kindergarten Reading scores in LNF and FSF. The study also examined the extent the relationship between the District A Kindergarten Screening-JumpStart and beginning of the year kindergarten DIBELS Next scores in LNF and FSF is affected by gender, race, and socioeconomic status. While the results of this study contributed to existing research on the relationship between kindergarten prescreening assessments and kindergarten performance, additional research needs to be conducted.

Screenings can be costly, both in terms of money and time. If the screenings are inaccurate predictors of academic success, and if the screening results are not used to inform educational decisions, then the time spent screening may be better utilized preparing children for school in different ways. If kindergarten prescreening assessments do not predict student success, then districts should consider discontinuing the use of the screenings or conduct further research on the screenings' effectiveness. The current study found that a relationship existed between District A Kindergarten-JumpStart and beginning of the year DIBELS Next Kindergarten Reading assessment. District A should review the purpose the Kindergarten-JumpStart screening and monitor its effectiveness so that the information derived from the screenings can be used to get children off to a good start in school.

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Appendices

Appendix A: Permission from School District A

From: Laura Herrick
Sent: Tuesday, September 05, 2017 8:34 AM
To: District A Coordinator of Assessment and Research
Subject: Laura Herrick doctoral project

       I have spoken to you before regarding my doctoral research for my Baker program. I am looking at kindergarten prescreening and DIBELS end of year scores for all kindergartners in the district for the 2016-2017 and 2017-2018 school years to see if the prescreening scores predict kindergarten performance on the DIBELS. When I spoke to you last spring, you said that I could have access to this information. Just doublechecking before I proceed further that the district will provide this data.
       I will obviously share what I learn as I think the information will not only will it be helpful to my research but I also think it will be helpful to the district in analyzing the prescreening and in planning more for the Jumpstart and preschool programs.
       Please let me know if this is acceptable and that the information is available.

       Thank you in advance,
       Laura Herrick
       Kindergarten

Response from District A Coordinator of Research and Assessment:
Yes, you can proceed. I have the data, and I am willing to work with you on this. But there is more detail that we will need to work through.

I will need to de-identify the files, and I will need to get more information from you regarding the specific fields that you need (i.e. demographic information, school identifier, etc).
I am also curious about what your exact research questions will look like.

Appendix B: IRB Proposal

Baker University Institutional Review Board

March 1st, 2019

Dear Laura Herrick and Verneda Edwards,

The Baker University IRB has reviewed your project application and approved this project under Exempt Status Review. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

Please be aware of the following:

1. Any significant change in the research protocol as described should be reviewed by this Committee prior to altering the project.
2. Notify the IRB about any new investigators not named in original application.
3. When signed consent documents are required, the primary investigator must retain the signed consent documents of the research activity.
4. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.
5. If the results of the research are used to prepare papers for publication or oral presentation at professional conferences, manuscripts or abstracts are requested for IRB as part of the project record.

Please inform this Committee or myself when this project is terminated or completed. As noted above, you must also provide IRB with an annual status report and receive approval for maintaining your status. If you have any questions, please contact me at npoell@bakeru.edu or 785.594.4582.

Sincerely,

Nathan Poell, MA
Chair, Baker University IRB

Baker University IRB Committee
        Scott Crenshaw
        Erin Morris, PhD
        Jamin Perry, PhD
        Susan Rogers, PhD

Appendix C: District A Kindergarten Screening-Jumpstart

District A Kindergarten Screening-Jumpstart
This tool is used to capture Kindergarten readiness skills for incoming students of District A
Your email address will be recorded when you submit this form. Not you? [Switch account](#)
* Required

School *
Choose

Student Name *
Please enter Lname, Fname, (Nickname)
Your answer

Identifies initial letter sounds (K.RF.1) Say to the child "What sound do you hear at the beginning of the word...When I say Fun what sound do you hear at the beginning of the word?" (5 points) (May score correct for letter or sound. A sentence prompt may be provided if needed for clarification. Ex. Van - We drove our van to the store.)
Bed
Love
Nap
Pet
Van
None correct

Initial letter sounds - Enter the total number correct from above. (ONLY enter numeric value) *
Your answer

Identifies rhymes (K.RF.1) Say to the child "Rhyming words sound alike. An example is Sun and Fun. Sun and Fun rhyme. I will read you two words and I want you to tell me if the words I read rhyme..." (5 points)
Bell and Shell
Bell and Goat
Cat and Bat

Cat and Cake
Tell me a word that rhymes w/ Mop (nonsense words are accepted)
None Correct

Identifies rhymes - enter the total # correct from above. (ONLY enter numeric value) *
Your answer

Recognize upper case and lower case letters (K.RF.1) *Using K Screening Tool Kit Flash

Cards - Enter the numeric score (26 possible) *
Your answer

Describes objects in the environment using names of shapes (K.G.1) *Using K Screening

Tool Kit Flash Cards (5 points possible) *
Square
Circle
Triangle
Star
Rectangle
None Correct

Describes objects - enter the total # correct from above. (ONLY enter numeric value) *
Your answer

Count to 25 by ones (K.CC.1) List the highest number reached (If beyond 25 - record the

highest, if a number is skipped, count the highest number reached before the skip.

Student may be stopped at 50.) (Point per #) *
Your answer

Count to answer "How Many" (K.CC.5) *Using K Screening Tool Kit Flash Cards -

ONLY enter numeric value (6 points possible) *
Your answer

Identifies colors - Show the child crayons and ask them to identify the color (5 points)
Red
Green
Blue
Yellow
Purple
None Correct

Identifies colors - enter total # from above (ONLY enter numeric value) *
Your answer

Fine & Gross Motor Skills (4 points)
Cutting - Using K ToolKit (Ask student to cut along the dotted line.)
Pencil Grasp (Pincer) Student is able to pinch grasp the pencil vs clutch
Stands on one foot (Ask student if they can show you they can stand and balance on one foot.)
Alternates standing & balancing on each foot (Ask student to stand on one foot, then change legs.)

Fine and Gross Motor - Enter total # from above (ONLY enter numeric value) *
Your answer

General Observations (NonScored) *
Separates from parent
Able to share Name
Follows directions
Speaks to adults
Makes eye contact
Maintained engagement
Refused to respond on any items
Other:

General Observation Comments
Your answer

Did the student attend preschool/pre-k prior to kindergarten? *
Yes
No

If so, what is the name of the preschool/pre-k? *
Your answer

Appendix D: DIBELS Next Kindergarten Reading Assessment

**First Sound Fluency
1**

Directions

Make sure you have reviewed the directions in the *Assessment Manual* and have them available. Say these specific directions to the student:

Practice item #1) ***Listen to me say this word, "man." The first sound that you hear in the word "man" is /mmm/. Listen. /mmm/. "Man." What is the first sound you hear in the word "man"?***

Practice item #2) ***Listen to me say another word, "moon." What is the first sound you hear in the word "moon"?***

Correct response	***Good. /mmm/ is the first sound in "man."***
/mmm/ or /ma/	

Incorrect response

Student does not respond within 3 seconds or responds incorrectly

/mmm/ is the first sound you hear in the word "man." Listen. /mmm/. "Man." Say it with me. /mmm/. Let's try it again. What is the first sound you hear in the word "man"?

Correct response

Good.

Incorrect response

/mmm/. Say /mmm/.

Correct

Good.

Incorrect

Okay.

Correct response /mmm/ or /moo/	***Good. /mmm/ is the first sound in "moon."***

Practice item #3) ***Let's try another word, "sun."*** (Wait up to 3 seconds for student to respond.) If

the student does not respond, ask, ***What is the first sound you hear in the word "sun"?*** (Begin testing.)

▶

Correct response /sss/ or /su/	***Good. /sss/ is the first sound in "sun."***

Incorrect response

Student does not respond within 3 seconds or responds incorrectly

/sss/ is the first sound you hear in the word "sun." Listen. /sss/. "Sun." Say it with me. /sss/. Let's try it again. What is the first sound you hear in the word "sun"?

Correct response

Good.

Incorrect response

/sss/. Say /sss/.

Correct

Good.

Incorrect

Okay.

(Begin testing.)

Begin testing. ***Now I am going to say more words. You tell me the first sound you hear in the word.*** Say the first word from the list in the scoring booklet.

Timing	1 minute. Start your stopwatch after saying the first test item.
Wait	If the student does not respond within 3 seconds on a word, mark a slash (/) through the zero and say the next word.
Discontinue	If no sounds are correct in the first five words, discontinue and record a score of 0.
Reminders	If you think the student may have forgotten the task, say **Remember to tell me the first sound that you hear in the word.** Immediately say the next word. (Repeat as often as needed.)
	If the student says the name of the letter, say **Remember to tell me the first sound in the word, not the letter name.** Immediately say the next word. (Allowed one time.)

First Sound Fluency
1

Grade K/Benchmark 1

Test Items Correct/2 points Correct/1 point Incorrect

1. laughed	/l/	/la/	0
2. pine	/p/	/pie/	0
3. skirt	/s/	/sk/ /sker/	0
4. flag	/f/	/fl/ /fla/	0
5. rang	/r/	/ra/	0
6. crow	/k/	/kr/	0
7. hide	/h/	/hie/	0
8. blame	/b/	/bl/ /blai/	0
9. deck	/d/	/de/	0
10. crab	/k/	/kr/ /kra/	0
11. bright	/b/	/br/ /brie/	0
12. knock	/n/	/no/	0
13. trash	/t/	/tr/ /tra/	0
14. list	/l/	/li/	0
15. spring	/s/	/sp/ /spr/ /spri/	0
16. chief	/ch/	/chea/	0
17. grand	/g/	/gr/ /gra/	0
18. sweat	/s/	/sw/ /swe/	0
19. shelf	/sh/	/she/	0

20. heard	/h/	/her/	0
21. crisp	/k/	/kr/ /kri/	0
22. plow	/p/	/pl/	0
23. hat	/h/	/ha/	0
24. sad	/s/	/sa/	0
25. swan	/s/	/sw/ /swo/	0
26. voice	/v/	/voy/	0
27. grapes	/g/	/gr/ /grai/	0
28. shell	/sh/	/she/	0
29. top	/t/	/to/	0
30. steal	/s/	/st/ /stea/	0

2-pt responses: _____
x 2: _____ + 1-pt responses: _____ = Total: _____

Letter Naming Fluency
1

Directions

Make sure you have reviewed the directions in the *Assessment Manual* and have them available. Say these specific directions to the student:

I am going to show you some letters. I want you to point to each letter and say its name.

(Put the page of letters in front of the student.)

Begin testing. ***Start here*** (point to the first letter at the top of the page)***. Go this way*** (sweep your finger across the first two rows of letters) ***and say each letter name. Put your finger under the first letter*** (point)***. Ready, begin.***

Timing	1 minute. Start your stopwatch after telling the student to begin. Place a bracket ( ]) and say **Stop** after 1 minute.
Wait	If the student does not name a letter within 3 seconds, mark a slash (/) through the letter and say the correct letter name.
Discontinue	If no letters are named correctly in the first row, say **Stop** and record a score of 0.
Reminders	If the student names letters from top to bottom, or points to letters randomly, say **Go this way**. (Sweep your finger across the row.) (Allowed one time.) If the student skips four or more consecutive letters, say **Try to say each**

	letter name. (Allowed one time.)
	If the student says letter sounds, say *Say the letter name, not its sound*. (Allowed one time.)
	If the student stops (not a hesitation on a specific item), say *Keep going*. (Repeat as often as needed.)
	If the student loses his/her place, point. (Repeat as often as needed.)

Letter Naming Fluency
1

Grade K/Benchmark 1

S	J	z	v	e	X	T	t	V	D
F	F	W	Q	P	q	l	c	O	o
R	n	B	w	g	E	d	u	p	y
S	m	x	L	k	Z	a	Y	H	j
I	K	U	M	G	r	A	N	h	C
I	b	S	F	f	u	L	A	m	B
V	T	Y	G	e	W	E	a	N	X
L	b	M	C	q	z	P	x	I	Q
G	J	O	s	d	Z	K	o	v	j
D	t	h	w	R	U	c	r	I	k
N	H	y	p	s	J	z	v	e	X

LNF Response Patterns:

Total Correct: _____