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The Relationship between Preschool Teachers' Knowledge and Experience to Emergent Literacy Assessment

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Walden University
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Abstract

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Myra G. Crouch

M.A., The Ohio State University, 1996

B.S., Fayetteville State University, 1982

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Educational Psychology

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Abstract

There is evidence to suggest that preschool teachers do not provide phonemic awareness instruction that supports the early literacy of young children before entering kindergarten. This study examined the relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment; and if differences in students' emergent literacy assessment varied across preschool program settings. The theoretical foundation for this study was based on 2 theories: ecological systems and cognitive stage development. Eighty-eight preschool teachers employed at local Head Start, childcare, and pre-kindergarten programs located in the Commonwealth of Virginia participated in this study. An online teacher survey questionnaire, PhaKS was distributed to preschool teachers to assess their knowledge in phonemic awareness. Secondary data from Virginia's kindergarten screening assessment, PALS-K was received to assess differences across preschool settings. Results from the multiple regression analysis indicated the findings were not significant; however, in conducting simple linear regression analyses, preschool teachers' content knowledge in early literacy had a predictive relationship with students' emergent literacy skills. Results from a one-way ANOVA found emergent literacy assessment, PALS-K scores for the pre-kindergarten group as significant from the Head Start group. The findings from this study promote positive social change by informing parents, teachers, and administrators about the value of teacher preparation in early literacy instruction. Bringing awareness to this issue may impact the instruction that young children receive in becoming emergent readers as they prepare for kindergarten and later school success.

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Dedication

My dissertation is dedicated to my husband, Sands Cooper, and the memory of my late mother, Gwendolyn Churchill Valentine Crouch, who encouraged me to always pursue my dream.

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Chapter 1: Introduction to the Study

Introduction

For at least the past 2 decades, increasing evidence has shown preschool education's prolonged-term effects on the social and cognitive development of preschool-age children (Barnett, Votruba-Drzal, Dearing, & Carolan, 2017). The evidence about the benefits of preschool education from publicly supported programs, such as Head Start and pre-kindergarten (pre-k) programs, has been overwhelming. Moreover, Pianta, Barnett, Burchinal, and Thornburg (2009) found that young children experience both positive and negative effects from preschool education programs, demonstrating the variation in educational offerings across early childhood education programs, such as Head Start, and pre-kindergarten. This variation ranges from schedules in preschool programs left to federal and local discretion in terms of what constitutes program attendance, which impacts the learning experiences of young children. These preschool programs found to have positive lasting effects are coming under enormous pressure to ensure that children sustain gains from their learning experiences of a preschool education as they enter into kindergarten (Williams, Landry, Anthony, Swank, & Crawford, 2012).

Additionally, Campbell, Pungello, Miller-Johnson, Burchinal, and Ramey (2001) argued that the long-term effects of preschool education comes from the diversity in preschool programs ranging from intense early intervention to high-quality instruction that impact the learning experiences of young children. Key to these learning experiences are those aimed at developing early literacy skills, which is viewed as a major milestone

for children being taught to read prior to their entry to kindergarten. Significant investments to expand preschool programs at the state and federal level has increased pressure for educators and leaders who operate early childhood programs to deliver positive child outcomes toward later school success. By revealing potential inequities that may exist across preschool program settings regarding developing early literacy, the results from this study can inform improvements to make in professional development, as well as preschool teacher preparation in early literacy instruction, specifically. This study is significant in that it conveys awareness to the value that quality early literacy instruction brings to the academic readiness of preschool-age children before they enter kindergarten.

In this chapter, the purpose and background of this study is further discussed. The background briefly summarizes the literature reviewed that addresses the statement of the problem. The theoretical foundation and definitions related to the research problem are also presented. Details supporting the significance, limitations, and assumptions of the study are also discussed.

Background

The background and scope of this study was driven by research aimed at increasing the knowledge and awareness of preschool educations' role in the school readiness of preschool-age in the early grades. Yoshikawa, Weiland, and Brooks-Gunn (2016) conducted research and found that preschool education has gained increasing recognition as being significant in the academic readiness in later school success. Preschool-age children enrolled in preschool programs have an advantage in gaining the

early literacy and math skills for being successful as they enter kindergarten and the early grades (Duncan et al., 2007). Similarly, children who participate in preschool are likely to have developed the basic literacy skills as they complete third grade (Snow & Matthews, 2016). Research conducted by Lonigan, Allan and Lerner (2011) demonstrated that children who attended preschool could experience negative consequences associated with delays in their capacity when forced to be taught how to read before they are developmentally prepared. In contrast, Lonigan et al. (2011) also found that preschoolers who are unable to attain the skills in early literacy will wrestle in becoming skilled readers, are likely to fall behind their peers, and could require remedial reading as they enter the elementary grades. Acquiring well-developed literacy skills has been well documented to reveal that continuity between reading-related skills in preschool to when they are in the elementary school to be a significant predictor of later school success (Lonigan, Burgess & Anthony, 2000). However, few studies have been conducted on teacher content knowledge in delivering early literacy instruction (Cunningham, Zibulsky, & Calhoun, 2009).

Head Start and childcare preschool programs include instructional activities that prepare children to be ready for kindergarten, which includes a focus on early literacy development aimed at reducing achievement gaps (Yoshikawa, Weiland, & Brooks-Gunn, 2016). Due to the recent trends in achievement gaps, most gaps remain unknown until standardized achievement tests are administered beginning in third grade; however, patterns of school readiness gaps, such as literacy skills from preschool to kindergarten entry are showing declines (Reardon & Portilla, 2015). These gaps do not grow as a child

progresses in school, suggesting an effort toward reducing achievement gaps (Yoshikawa et al. 2016). During the preschool years, children are exposed to learn early literacy skills, so as they enter kindergarten, they are expected to use their early literacy skills as tools to construct new knowledge (Tomblin, 2010). Past studies conducted by Lonigan, Burgess, and Anthony (2000) and Torgesen and Burgess (1998) examined reading levels of poor readers and found as these readers complete the first grade, they are less likely to achieve reading at grade-level without some form of remediation. As these findings suggest, preschool-age children who do not develop these skills by the time they complete third grade will likely fall behind their peers in literacy and have a fear of not being able to read and potentially drop out of school (Snow & Matthews, 2016).

Many of these studies on the quality of preschool programs have been limited to research that has examined a measure of teacher content knowledge in early literacy instruction as it relates to school readiness and later school success. One study found preschool teachers without content knowledge in early literacy impacted the fundamental skills young children need and their students entered kindergarten behind their peers (Cunningham, Zibulsky, & Calhoun, 2009). More recently, Casbergue (2017) argued that not all early literacy instruction is effective. She suggested that preschool teachers are not engaged in best practices for preschool literacy, which has been reduced to more rote routines from which children do not gain literacy knowledge.

As these findings suggest, there are differences between how early literacy instruction is delivered across different preschool program settings. Key differences across preschool education programs are between the educational preparation and

professional development opportunities preschool teachers receive (Institute of Medicine, 2015). There has been increasing evidence that confirms the quality of preschool education intensifies the level of positive child educational outcomes (Phillips, Austin, & Whitebook, 2016). With the importance placed on the quality of preschool programs and teacher qualifications, only a modest amount of evidence has emerged indicating how the quality of teaching in preschool affects child outcomes (Son, Kwon, Jeon, & Hong, 2013), as well as relates to emergent literacy (Neuman & Cunningham, 2009).

Problem Statement

For more than 2 decades, research has focused on reading problems associated with preschool-age children, however, in more recent studies, evidence suggests preschool teachers lack the content knowledge in language structure to support early literacy skills preschool-age children must have in preparing them for kindergarten (Schachter, Spear, Piasta, Justice, & Logan, 2016). In an earlier study, Moats (2014) found the gaps in teacher content knowledge to be related to reading proficiency and student achievement. Furthermore, fewer studies have been conducted that measures teacher content knowledge in early literacy instruction (Hindman, & Waski, 2010; Lyon & Weiser, 2009; Moats, 2009; Teale, Hoffman, & Paciga, 2010). Cunningham et al. (2009) called for the development of more measures of preschool teacher content knowledge that support reading and writing. They further argued, with the absence of phonemic awareness and knowledge in language structure necessary for early literacy instruction, many beginning readers will have difficulty in their ability for learning to read and write as they enter into the early grades.

These findings are problematic; therefore, by conducting this study, I may contribute to furthering education research aimed at examining what teachers know and understand about early literacy instruction and how it prepares young children to be successful readers. In this study, I address the gaps in research that currently exist related to preschool teachers' content knowledge in early literacy instruction and the differences that may exist in instruction across different preschool program settings. There has been no current research conducted that has addressed this gap in the past 5 years. Therefore, this study fills a gap aimed at understanding early literacy instruction across different preschool program settings in preparing children's early literacy readiness before they enter kindergarten.

Purpose of the Study

This quantitative study had two interconnected purposes. First, I examined the relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment of children upon entering kindergarten. Second, I examined if there are differences in emergent literacy assessment across different preschool program settings. This study was exploratory and focused on a research problem that had few or no previous empirical research to refer to or rely upon for predicting an outcome. DeForge (2012) suggested that exploratory studies are often undertaken when relatively little is known about a specific phenomenon.

Research Questions and Hypotheses

Multiple regression analysis tested the hypothesis associated with the first research question along with subsequent simple linear regression analyses that examined

each independent variable: teachers' content knowledge in early literacy, education level, and years of teaching experience in relationship to the dependent variable: student's emergent literacy assessment. Consequently, the multiple regression analysis accounted for each predictor variable one at a time to see how each variable adds to the prediction after the influence of the other predictors have been considered (Gravetter & Forzano, 2016). In the first research question, there are four sets of hypotheses associated with emergent literacy assessment. One-way analysis of variance (ANOVA) was performed to analyze the second research question. By using a one-way ANOVA, I examined if there were differences between the means of two independent groups. The independent variable was the preschool program group setting (categorical), and the dependent variable was the student's emergent literacy assessment (continuous). The study questions and hypotheses investigated for this research is listed below:

Research Question 1: Is there a relationship between teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment?

$H_0$1: There will be no significant relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment.

$H_1$1: There will be a significant relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment.

$H_0$2: There will be no significant relationship between preschool teachers' content knowledge in early literacy to emergent literacy assessment.

$H_1$2: There will be a significant relationship between preschool teachers' content knowledge in early literacy to emergent literacy assessment.

$H_0$3: There will be no significant relationship between preschool teachers' education level to emergent literacy assessment.

$H_1$3: There will be a significant relationship between preschool teachers' education level to emergent literacy assessment.

$H_0$4: There will be no significant relationship between preschool teachers' years of teaching experience to emergent literacy assessment.

$H_1$4: There will be a significant relationship between preschool teachers' and years of teaching experience to emergent literacy assessment.

Research Question 2: Are there differences in the emergent literacy assessment by preschool program setting?

H_{01}1: There will be no significant differences among emergent literacy assessment by preschool program setting.

$H_1$1: There will be significant differences among emergent literacy assessment by preschool program setting.

Theoretical Foundation

Urie Bronfenbrenner's (1977) ecological systems theory, coupled with Jean Piaget's (1952) theory of cognitive development were the theoretical foundation of this study. Within Bronfenbrenner's ecological systems theory, several systems are

interrelated, making up an individuals' internal and external environments: microsystem, macrosystem, and exosystem. Bronfenbrenner's (1977) ecological systems theory is defined by what is called *nested systems* that have direct influences on each other. For example, a child's microsystem includes how their home environment interacts with what Bronfenbrenner calls the mesosystem, which is a child's school environment.

Piaget's (1952) cognitive development theory is important to this study as a theoretical foundation because it focuses on the formative period of preschool that involves a series of stages in which children build their knowledge of the environments around them (i.e., Bronfenbrenner's nested systems; Bronfenbrenner, 1977). Piaget's influence on children's development has a direct association that can be tied to Bronfenbrenner's theory as it relates to their internal and external environments in which children learn. For example, in drawing from both theories, such as how children's constructive processes work symbiotically within the context of their environment, a constructivist-ecological perspective is formed (Liben, 2017). In examining how children emerge as early readers, this study focused on how preschool teacher content knowledge in early literacy and their education level and teaching experience may be a key tenet of a child's kindergarten readiness.

Piaget's (1952) cognitive development theory brings together how young children understand their world differently across each of the environments in which they interact, i.e., Bronfenbrenner's ecological systems. As cited in Piaget (1977), he proposed that individuals construct rather than acquire knowledge, referred to as both *assimilation* (taking in from the environment) and *accommodation* (adjusting thoughts in response to

equilibrium). In Beilin's (1992) analysis of Piaget's theory, he argued that how a child adjusts from learning concepts is a measure of instructional strategies in the classroom. Hayes, O'Toole, and Halpenny (2017) found that the application of Piaget's theory to Bronfenbrenner's theory is that a child's growth occurs within the contexts of their immediate environment and interactions with their peers, and therefore, the child experiences new information and faces challenges with accepting new information. This process was referred to, by Piaget, as a state of *disequilibrium*. As the theoretical foundation for this study, it is essential to recognize how a child constructs knowledge under Piagetian tasks, such as during the preoperational stage. It is, therefore, Piaget's preoperational stage that coincides more with Bronfenbrenner's mesosystem as language develops, therefore providing the connection to a child's microsystem, such as between the teacher and parents, or between preschool and kindergarten environments. Each theory is further explained in Chapter 2.

It is important to understand the aspects of Piaget's constructionist theory and its relevance to emergent literacy skill development. Piaget's stage concepts provide a direct relationship to children's interactions between Bronfenbrenner's ecological systems that are influential in their own individual development of emergent literacy skills (Moran & Senseny, 2016). Further to this notion, Hamre, Hatfield, Pianta, and Jamil (2014) suggest that preschool-age children develop in dyadic systems versus in isolation. For example, Hamre et al. (2014) assert that the teacher-child relationship would be the basis of a dyadic system according to Bronfenbrenner's theory. Hamre et al. (2014) found Bronfenbrenner's framework to drive learning and development in teachers' daily

interactions with children. Moreover, they suggested a strong association that links preschool-age children's development to the internal and external environments, as important to their overall learning experiences, which ties to Piaget's preoperational stage.

In preschool, children are just beginning to build a framework around what it will mean to create language and literacy skills. Piaget's theory relates to the approach in this study in providing children's emergent literacy assessment as they transition from preschool to kindergarten; whereas, Bronfenbrenner's theory's relationship to this study, is to how internal and external environments in which children learn the skills to read. Many children are not ready to read in kindergarten, which is why the emphasis on children developing at different rates and how assessments are administered as they begin kindergarten can assist teachers with individualizing instruction around emerging literacy skills (Carlson-Paige, McLaughlin, & Almon, 2015). In both research questions, the variables investigated explored the relationship between the child's mesosystem with respect to how knowledge is constructed (early reading) and the influences of early literacy instruction (teacher knowledge).

Nature of the Study

The nature of this research study is quantitative. Independent variables for the first research question (RQ1) are preschool teachers' content knowledge in early literacy, education level, and years of teaching experience, and the dependent variable is the emergent literacy assessment. In the second research question (RQ2), preschool program group settings are the independent variable, and emergent literacy assessment as the

dependent variable. An important aspect of this study was to recruit a sample of teachers who represented each of the preschool program settings, who were currently employed, and located within their neighboring school district.

I selected two measures to explore the variables in this study. The first measure was the Survey of Teacher Phonemic Awareness Knowledge and Skills (PhaKS) (Cheesman, McGuire, Shankweiler, & Coyne, 2009). Preschool teachers from the preschool program settings selected for this study completed a survey which was provided in an online format. The PhaKS measure is intended to examine a teachers' knowledge of early literacy development. Cheesman et al. (2009) designed this survey for internal consistency and reliability that initially produced a Kuder-Richardson 20 coefficient of .69. Cheesman et al. (2009) applied the Kuder-Richardson 20 to see if the items within the survey questionnaire would result in the same results, which Bolarinwa (2015) explains as a measure of internal consistency reliability. The authors argued that by keeping the length of the survey questionnaire short, it would encourage participants to complete and return the survey (Cheesman et al., 2009). To further test for reliability, the authors applied Spearman-Brown to determine reliability for length. They used scores from a similar survey questionnaire that was twice as long and similar in content (Cheesman et al., 2009). As a result, reliability increased to .82 (Cheesman et al., 2009).

The second measure used in this study is the Phonological Awareness Literacy Screening for Kindergarten (PALS-K), designed to assess emergent literacy skills of children when they enter kindergarten (Invernizzi, Juel, Swank, & Meirr, 2013). For purposes of this study, student level data was provided to me as archival data. The PALS-

K is a standardized instrument that can inform teachers how prepared children are to become proficient readers upon entering kindergarten which is administered by kindergarten teachers. The PALS-K is a key component of Virginia's Kindergarten Readiness Program (VKRP) which is discussed further in Chapter 2. Additionally, only school divisions who participated in the Commonwealth of Virginia's VKRP were selected, of which Head Start and childcare programs were located in the neighboring elementary school. In most cases, children who attended Head Start, childcare, and pre-kindergarten enrolled in an elementary school located in the neighboring school district. Virginia's school division administers the PALS-K twice a year (fall and spring). For this study, only PALS-K scores from the fall assessment were requested. Further details about the PALS-K is discussed in Chapter 3.

Definitions

The following terms are directly associated with the purpose of this study and are most commonly used to characterize preschool education.

Childcare is a program that serves young children from all income levels, typically for a fee, often aimed at meeting the needs of working families (Williams et al., 2012). Many childcare programs are operated by for-profit and private businesses or that offer childcare as a wraparound service.

Early childhood education is the field of educational practice involving different systems of programs, services and policies explicitly designed around the educational needs of young children ages zero to five (Goffin, 2013).

*Early literacy instruction i*nvolves *"*developmentally appropriate materials, experiences, and social support that encourage early forms of reading and writing that help develop into conventional literacy*"* (Roskos, Christie, & Richgels, 2003) in preschool program settings.

Early literacy is the "development of skills that are precursors of reading, including phonological awareness, letter and sound knowledge, and oral language*"* (Lonigan et al., 2000).

Emergent literacy are "skills, knowledge, and attitudes that are the developmental precursors to conventional forms of reading and writing" (Connor, Morrison, & Slominski, 2006). For example, emergent literacy behaviors are often exhibited in activities that encourage early writing, such as in the form of scribbling (Hall, Simpson, Guo, & Wang, 2015; Saracho, 2017), dramatic play that includes young children engaging in early language, specifically in conversation with their peers and teachers (Terrell & Watson, 2018).

Head Start is a federally funded preschool program founded in 1964 as a comprehensive child development program aimed at addressing the needs of preschool-age children and their families from disadvantaged backgrounds (Administration for Children and Families, 2017).

Phonemic awareness is an awareness to identify and use sound structure of spoken words (Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh & Shanahan, 2001).

Phonological awareness is a broader term that encompasses one's skills to recognize and manage the sounds of language, specifically, the letters of the alphabet (Beecher, Abbott, Petersen, & Greenwood, 2016).

Pre-kindergarten (pre-k) are programs structured in the public school system.

Preschool education is a broad term used to describe an educational program that enrolls children before they enter formal schooling (Rigby, 2007).

Preschool programs often referred to as an educational program that serves children ages 3 to 5 which are located in diverse early childhood program settings.

School readiness can be defined from many perspectives based on what problems or concerns are being addressed (Farran, 2011). Sabol and Pianta (2017) defined school readiness as a "set of foundational skills, behaviors, and knowledge children demonstrate as they enter school," which is used interchangeably with kindergarten readiness.

Assumptions

I assumed that the instructions for the PALS-K assessment will be interpreted consistently by all kindergarten teachers. There is uniformity in how the PALS-K training is structured and delivered for teachers to learn at their own pace. All kindergarten teachers are provided with the same access to the same materials and resources to assist with administering the assessment, using a portal-type login system. Another assumption was that preschool teachers would respond to the phonemic awareness survey questionnaire honestly. All study participants received the informed consent procedures that detailed the confidentiality of their results.

I also assumed that early literacy instruction is taught in each preschool program setting to prepare children for kindergarten. Within each preschool program, preschool teachers use a different curriculum that includes children's acquisition of early literacy skills before they enter kindergarten. These assumptions are essential to this study as it pertains to the study participants' content knowledge in early literacy.

Scope and Delimitations

The scope of this study examined the relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment; and if there were differences in children's emergent literacy assessment across preschool program settings. Based on the scope of this study, only preschool teachers from state-funded, federally subsidized, and federally funded programs were selected. Therefore, children enrolled in other preschool arrangements, such as family childcare, home schooling, private programs, and faith-based programs were excluded from the study. With their inclusion in the study, the sample size could have affected the overall analyses, therefore, affecting the generalizability of the study.

A delimitation was the exclusion of any analysis of preschool students who were dual language learners (DLL) transitioning to kindergarten. A second delimitation was exclusion of data analysis that would show any relationship to literacy assessment for gender or racial differences among students across preschool program settings as they transitioned to kindergarten. Additionally, another delimitation was the analysis conducted on the emergent literacy assessment. For example, only aggregated summed scores were analyzed between groups, versus an analysis of subtask scores from the

emergent literacy assessment. Family characteristics were also not considered in this study, which could have offered a different perspective on how the home environment and socioeconomic status influences literacy skill development.

Limitations

The first limitation of this study was the lack of knowledge and familiarity of how a preschool program maintained records of students who transitioned to kindergarten for any given school year, therefore, limiting the ability to secure student's emergent literacy assessment scores that corresponded with their former preschool teacher. No measure could have addressed this limitation. A second limitation of this study was not knowing how many students from a participating preschool program had transitioned to kindergarten because families moved, and the enrollment of 4-year olds varied across the participating preschool programs. The dates for the beginning of the school year did not coincide with my data collection which created limitations for having an accurate number of students who had transitioned. The differences in preschool program schedules and the school year could not be avoided; therefore, no measure could have addressed this limitation. Based on the nature of the research design, only nonprobability sampling was the most applicable design. By using this approach, the process of generalization and whether the results obtained from the study sample can be extended to the targeted population (Hanasono, 2018).

Significance

One significance of this study was to increase awareness of the value that emergent literacy skills, developed in preschool, have on a child's future school success.

Valentino (2018), argued that by the time children enter kindergarten, significant gaps in achievement exist, specifically among different racial, socioeconomic, and language backgrounds. Furthermore, minority preschoolers are less likely to enroll in a high-quality preschool program when compared to their White peers enrolled in pre-K programs (Valentino, 2018). Policymakers, researchers, parents, and educators all play a part in raising the standards of preschool education that directly aids in preschool-age children's development as they prepare for kindergarten, specifically as it relates to early literacy.

Learning to read in the early grades is a key milestone in school success (Casey Foundation, 2014). However, what invariably happens and exists in preschool programs is an increase in policy aimed at academic instruction and less focus placed on the developmental continuity between and across the birth to third-grade curriculum. Among different preschool program settings is the variety of professional roles in early childhood education, in which a child is exposed, that represents a broad range of learning experiences that influences a child's development and early school success (Forry, Davis, & Welti, 2013). This study sought to increase awareness among administrators, policymakers, researchers, parents, and preschool to third-grade teachers regarding the importance teacher content knowledge in early literacy instruction has in future reading proficiency of young children, especially as they matriculate to the early grades.

Another area of significance centered on teacher preparation in literacy instruction within early childhood education. In research conducted by Foorman and Moats (2004), they found no evidence of an investigative foundation of how preschool teachers are

prepared in early literacy instruction. Although several efforts to increase the knowledge base for math and science instruction has been conducted, there has much less attention to literacy instruction (Cunningham et al., 2009). Preschool teacher knowledge is critical for developing children's educational goals (Saracho, 2013). Saracho further suggested that when teachers use their instructional knowledge in classroom practices, they can motivate children and teach children. Additionally, as Saracho's study examined the differences in early literacy instruction, the findings also revealed inequities in how early literacy across preschool programs is instructed, and the influence it can have on children's later school success. Early literacy skills are the foundation to traditional reading skills, and are measurable during the preschool period, and before formal reading instruction occurs (Goodrich & Lonigan, 2017).

The implications this study has for positive social change is aimed at efforts to enhance professional development that informs improvement related to early literacy instructional practices to support the early childhood education workforce from pre-k to third grade. More specifically, the findings from this study can inform administrators and policymakers on what is essential in enhancing their existing professional development models to align early literacy instruction to the curriculum used in the early grades toward reading proficiency. Additionally, educators, parents, program directors, school administrators, and policymakers can use the findings to increase collaboration and coordination of school readiness and transition activities between preschool programs and the early grades (kindergarten through third grade).

Summary

In this chapter the purpose of study and problem statement was introduced. The theoretical foundation was presented in detail to explain the interrelatedness between a child's environment and the construction of knowledge using theories by Bronfenbrenner and Piaget. In this study, I examine the relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment; and if there were differences in emergent literacy assessment across preschool program settings. To assess this relationship, preschool teachers completed a survey questionnaire of their early literacy knowledge and how their competency of this knowledge influences children's acquisition of literacy skills in preparing for kindergarten. Archival data from local school divisions in the Commonwealth of Virginia provided further analysis in determining whether differences in emergent literacy assessment scores were significant across different preschool program settings.

The relationship between preschool teachers' content knowledge in early literacy instruction, experience, and student achievement has rarely been studied in preschool education programs, as compared with studies conducted in the elementary grades, especially in disciplines such as science and math (Cunningham, Zibulsky, & Callahan, 2009). In addition, there has not been the same level of research aimed at literacy instruction because literacy is not considered a discipline when compared with science and math. Cunningham and her colleagues argued that, given the increased attention on later reading proficiency, a shift has occurred in the effectiveness of teacher education in

reading instruction and its influence on student achievement. Therefore, less attention has been aimed at examining the content knowledge preschool teachers have in early literacy instruction.

In Chapter 2, I discuss the review of literature which focused on the gaps as revealed in the problem statement. This chapter includes the theoretical basis of the study and how each theory selected has been applied in previous research as it related to the purpose of this study. In Chapter 2, I define the ecology of emergent literacy as it relates to the preschool program landscape, and the academic readiness between preschool and kindergarten. A review of current and past studies with a focus on preschool teacher content knowledge and early literacy instruction across different preschool settings is also discussed. The emphasis on the past studies informs my knowledge of the gaps in the research on this topic.

Chapter 2: Literature Review

Introduction

For more than 2 decades, significant changes have occurred in early learning standards and teaching practices across preschool education programs (Bogard & Takanishi, 2005; Kagan & Kauerz, 2007; Son, Kwon, Jeon, & Hong, 2013; Yoshikawa, Weiland, & Brooks-Gunn, 2016; Sabol & Pianta, 2017). Preschool programs are vital to the academic skills preschool-age children must have for later success in the early grades, specifically for the gains preschool-age children achieve prior to entering kindergarten (Pianta, Barnett, Burchinal, & Thornburg, 2009). Several compelling perspectives that contribute to what Pianta et al. (2009) found is how these changes in preschool programs are predicated as a result of quality programs, and the policy standards that drive preschool teacher preparation and certification across different preschool program settings. There are vast differences when it comes to what different preschool programs require for teacher qualifications. These variations frame and determine the quality of classroom experiences and instruction that is tied to the school readiness of preschool-age children as they transition from preschool to kindergarten. As a result, many states have increased the education requirements of preschool teachers to improve learning outcomes (Workman & Ullrich, 2017). Similarly, as legislated in the Head Start Act (2007), lead teachers in Head Start are required to have a 4-year degree. Although the requirements for preschool educators has increased, childcare programs continue to have less education requirements (Bureau of Labor Statistics, 2019). Of particular interest to my current study

is how preschool teachers' content knowledge in early literacy instruction affects the emergent literacy assessment of preschool-age children before they enter kindergarten.

The purpose of this research study examined the relationship between preschool teachers' content knowledge in early literacy, education level, years of teaching experience to emergent literacy assessment, and if differences in emergent literacy assessment across preschool program settings were significant. There were two theories that framed the theoretical foundation of the study. An overview of each theory and how both theories are applicable to this study is presented, as well as how these theories have been used in previous research studies. This chapter includes an overview that defines the ecology of school readiness and emergent literacy, coupled with studies that emphasize preschool teacher content knowledge and early literacy instruction. Studies that have examined the academic readiness between preschool and kindergarten, and which have identified the gains in literacy readiness skills, could potentially address reducing the achievement gap between preschool and kindergarten. In summary, this chapter includes past and current research that identifies the research gaps which were aligned with the research purpose and statement of the problem.

Literature Search Strategy

When establishing the literature search strategy, I identified key search terms that were closely related to the topic of the study. Several other strategies were established, such as setting up alerts using Google Scholar and alerts from peer-reviewed journals announcing articles related to the topic of the study. An important aspect of this literature search strategy was documenting studies using the matrix offered by Walden's Library.

When accessing the databases through the Walden Library, keywords identified articles found during the search. The online databases used to assist in the literature search were: PsycARTICLES, Academic Search Complete, SOCIndex, PROQUEST, and ScienceDirect. In situations where fewer studies of current research existed, I expanded the search to studies that were 10 or more years, dissertations, and research briefs from professional associations. The search terms used in the literature review included the following topics: *school readiness across preschool program settings, preschool teacher content knowledge, preschool teacher beliefs, early literacy, emergent literacy, phonemic awareness, school readiness,* and *early childhood transition*.

The scope of the literature reviewed includes research dating back at least 20 years (to 2000) to provide the historical and foundational context aligned with the research problem, specifically the focus on teacher content knowledge in early literacy. A search was conducted on surveys used to assess emergent literacy concepts, such as phonemic awareness and phonological awareness of teachers. It included current research that reflects the last 5 years (from 2015-2019) that includes peer-reviewed literature. As a result of the gap in the literature, there was very little to no current research that addressed the research problem. In those cases, dissertations were cited to describe the relevance to the research problem and research design.

Theoretical Foundation

Ecological systems theory by Urie Bronfenbrenner (1977) and cognitive development theory by Jean Piaget (1952) were the basis of the theoretical foundation for this study. Bronfenbrenner's (1977) ecological systems theory is well-documented in

supporting a general framework for examining school readiness in different educational settings, specifically aimed at emergent literacy and math skills (Bronfenbrenner & Morris, 1998; Hamre, Hatfield, Pianta, & Jamil, 2014; Moran & Senseny, 2016). Piaget's (1952) theory is often associated with the theory of how children learn. For example, researchers argued that Piaget's theory is not based on how children learn to write and read but how they interact with their environment to construct their knowledge, known as constructivism (Ensar, 2014). More importantly, this view of Piaget's theory demonstrates how preschool-age young children build knowledge from their environments. The following sections of this chapter provide a description for the source of each theory, a literature-based analysis of how each theory applies to this study, and how the selection of each theory relates to the study.

Bronfenbrenner's Ecological Systems Theory

Urie Bronfenbrenner first introduced the ecological systems theory in the 1970s as a framework for understanding human development from across four central components: process, person, context, and time (Bronfenbrenner, 1994). Bronfenbrenner (1977) characterized this theory as the movement individuals make throughout the developmental lifespan, termed the ecology of human development. Moreover, he described the ecological environment as the interrelatedness of how individuals develop in different environments. Bronfenbrenner (1977) described the ecology of human development through four sequential levels referred to as microsystem, mesosystem, exosystem, and macrosystem to understand how systems centered around relationships

can explain human development. He would later develop a fifth system, chronosystem, which involves change or consistency over time (Bronfenbrenner, 1993).

Each system is defined as proximal processes within the context of how individuals engage in different environments. The microsystem is a "pattern of activities and interpersonal relations by the developing person in their immediate environment, such as family, school, and peers" (Bronfenbrenner, 1993). The mesosystem involves the interactions that an individual may experience between two or more environments, such as the relationships between home and school. According to Bronfenbrenner (1993), the mesosystem is characterized as a system of microsystems. Additionally, the mesosystem seeks to explain the social interaction between individuals in different settings that include the child as the focus (Neal & Neal, 2013). The exosystem is the linkage between two or more external environments that does not involve the individual but the relationships between school and peer group (Bronfenbrenner, 1993). The fourth system consists of all three systems with interest in the "developing person's" belief systems, culture, and customs, is defined as the macrosystem (Bronfenbrenner, 1993).

Bronfenbrenner's (1977) ecological systems are often referred to as "nested spheres," with children being at the center of the sphere. Figure 1 is an illustration of Bronfenbrenner's (1986) nested systems. His theory is driven by what is called ecological validity, aimed at validating specific relationships that develop and progress across the lifespan. For purposes of this study, the mesosystem is at the core of understanding the effects of how the preschool environment influences growth that transitions to the kindergarten environment.

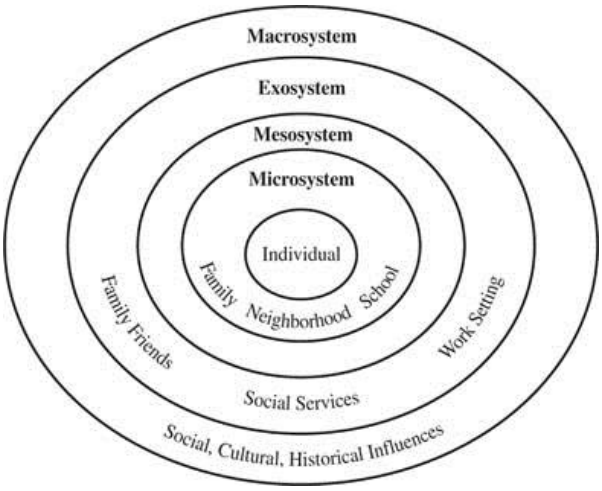

Figure 1. Ecological Systems Theory

Piaget's Cognitive Development Stage Theory

Piaget's (1952) cognitive development theory is often used by researchers as a theoretical framework to explain how children use their experiences in different environments to construct their own learning (Saracho, 2017). Piaget's theory is grounded in a succession of four stages - sensorimotor, preoperational, concrete operational, and formal operational, which occur across developmental milestones from infancy to early adulthood (Southwell, 1998). Piaget's milestones as a measure of intellectual competence, can be applied to determine a child's readiness for acquiring the skills to adapt to the learning environment (Southwell, 1998). For children to construct learning, Piaget defined three interrelated developmental processes: assimilation, accommodation, and equilibrium (Southwell, 1998). The outcomes of these processes help characterize how young children learn through new experiences to achieve cognitive stability (Kaufman, 2004). As a constructivist, Piaget's work has been characterized as a cognitive instructional theory as to assess the educational implications, known today as

Piagetian tasks, i.e., conservation (Resnick, 1983). Piagetian tasks are often used to evaluate the readiness of preschool children as they prepare to enter kindergarten (Southwell, 1998). Southwell further explained the usefulness of Piaget's measures, such as spatial relations, which explains how children learn to read. For example, as young children learn to read, they should be able to recognize the differences between letters.

For purposes of this literature review, the emphasis is on Piaget's preoperational stage in which children learn to form concepts and use symbols which in preschool settings have been dominated by a play-oriented curriculum (Wolfgang & Sanders, 1981). The authors asserted that this stage of Piaget's theory is critical to literacy development (Wolfgang & Sanders, 1981). In an earlier study by Wolfgang (1974), he argued that if children are not reading by first grade, they have not progressed from Piaget's preoperational stage. Weigel and Martin (2006) conducted a needs assessment process to understand how to improve academic readiness skills, specifically early literacy in preschool-age children. The results demonstrated the need for developing early intervention programs to help improve early literacy, foster English-language acquisition, and to focus on the unique issues preschool-age children and their families face (Weigel & Martin, 2006). These authors found Bronfenbrenner's ecological approach to have direct implications to how young children thrive in the context of their internal and external environments.

Applicability of Theoretical Propositions

Bronfenbrenner and Piaget's theories are well established and studied in the field of educational psychology to help explain and describe preschool-age children's

development in preschool program settings. Therefore, within this context, both theories provide the rationale as to the theoretical foundation for this study. In research conducted by Tankanishi (1981); Field (1987); and Barrouillet (2015), the application of each theory examined the tenants of language and literacy development through its instruction in various preschool settings. Moran and Senseny (2016) argued that the environmental influences as it relates to developmental age affect early literacy development. Bronfenbrenner and Morris (2006) would further expand on the proximal processes that define more dyadic relationships and children's development. Additionally, children thrive by developing skills within the context of the nested systems, thereby supporting school readiness competencies (Bronfenbrenner & Morris, 1998).

In a study conducted by Burchinal, Peisner-Feinberg, Pianta, and Howes (2002), Bronfenbrenner's theory was used to examine the interpersonal interactions between a child and their teacher, specifically children who are at risk academically, to determine whether the family environment influences academic success. Bronfenbrenner's theory has applicability from across previous studies aimed at understanding school readiness from an ecological perspective. For example, in Cohen and Friedman's (2015) study, the researchers used an assessment tool that was shown to be a reasonable indicator of school readiness. Data collected from this study was shown to have a direct connection across various systems in Bronfenbrenner's theory (Cohen & Friedman, 2015). Specifically, from the ecological perspective, school readiness must be understood from within the process, person, context, and time framework that Bronfenbrenner explains as the connections between and across the ecological systems (Cohen & Friedman, 2015).

The learning theories of Bronfenbrenner and Piaget were selected because they directly support the theoretical foundation of this study. In drawing from both theories, such as how children's constructive processes work symbiotically within the context of their environment, referred to as a constructivist-ecological (Liben, 2017). Moreover, Piaget's stages of cognitive development support the developmental structure related to Bronfenbrenner's ecological systems. In examining how children are prepared to become early readers, this study sought to demonstrate how children construct phonemic awareness.

Both theories were critical to this study. Of particular significance, recognizing how a child constructs knowledge as described in Piaget's preoperational stage, is directly tied to Bronfenbrenner's mesosystem, attributing to the environmental context of when language develops. More importantly, the child's microsystem, such as the interactions between preschool and kindergarten classrooms. The constructs defined in the learning theories of Bronfenbrenner and Piaget have a strong association with the variables examined in this study. Emergent literacy is an aspect of development that has origins in Piaget's preoperational stage and Bronfenbrenner's mesosystem and microsystem.

Literature Review Related to Key Variables and/or Concepts

This literature review broadly covers concepts related to preschool teacher content knowledge in early literacy, early literacy instruction, and kindergarten school readiness. Preschool teacher content knowledge is defined as the knowledge preschool teachers possess in phonemic awareness. The literature review as it relates to key concepts and

variables of this study are discussed in further detail that shows the relevance to the research purpose and problem statement.

School Readiness Alignment to Emergent Literacy

The origins of school readiness were thought to be a criterion for the cognitive, physical, and social-emotional skills preschool-age children will require to make a successful transition to kindergarten (Sabol & Pianta, 2017). However, school readiness for more than 2 decades in the U. S. education system has been aimed at understanding the standards by which children are prepared to adapt to the kindergarten environment based on the academic and social skills they have learned in preschool or other environments, i.e., home schooling and private childcare (Sabol & Pianta, 2017). In further support of implementing school readiness goals, many states established early learning standards (ELS) to support program directors, teachers, and policymakers to understand school readiness as a measure of school success for young children (Flores, Curby, Coleman, & Melo, 2016). In one of the most prominent studies examining school readiness is the Early Childhood Longitudinal Study-Kindergarten (2001-2010) which involved over 8,000 new kindergartners indicated that only 25% enter school ready in reading and math, which inspired a key goal of this study.

Most preschool education programs recognize the significance of school readiness to ensure preschool-age children are academically ready prior to entering kindergarten (Sabol & Pianta, 2017). As a framework for defining the skills young children need, school readiness has long been debated in the political arena, the research community, and recently with the enactment of ESSA - Every Student Succeeds Act, 2015. As a

critical component, ESSA involves states establishing effective early childhood systems to give every child a strong start (ESSA, 2015). Another goal often associated with school readiness is the ability for early childhood programs through the third grade to close the achievement gap (Daily, Burkauser, & Halle, 2012). Daily et al. (2012) suggested developing early learning standards that articulate continuity between all early childhood providers, school readiness assessments administered at the state level in local school districts could sustain consistency in school readiness practices (Daily et al., 2012). As a result of the increased attention, school readiness as a developmental area has expanded its reach to promote basic math and literacy skills to ensure a child's later achievement in school. Emergent literacy as a domain of school readiness can help explain young children's reading readiness based on appropriate instruction and learning experiences.

In 1966, Marie Clay introduced the concept of emergent literacy (Clay, 1966). She described emergent literacy as the "developmental reading behaviors" of young children. Clay's concept of emergent literacy would later influence attitudes about early literacy in the United States (Moran & Senseny, 2016). The 1960s through the 1980s would prove to be the framework for new knowledge toward our understanding of how preschool-age children engaged in learning to read (Morrow, 2011). This concept also assumes that preschool-age children acquire some knowledge and skills to support language, reading, and writing before entering kindergarten (Morrow & Dougherty, 2011). Moreover, Morrow and Dougherty found another assumption, that these skills are taught methodically so that all preschool-age children come with the same skills from

preschool, ready for kindergarten. Whitehurst and Lonigan (1998) provided the basis for the field of emergent literacy with a research framework from two perspectives: 1) research that explored the association between emergent literacy and the acquisition of traditional literacy; and 2) research that has explored the behaviors of preschool children in response to literacy learning experiences.

In a 2008 report published by the National Early Literacy Panel (NELP) three key areas were distinguished that support emergent literacy skills aimed at predicting reading proficiency in the later grades: knowledge of the alphabet, print awareness, and phonological awareness. Additionally, the NELP report found that children with more emergent skills were able to easily adapt to reading than their peers who had less or no emergent literacy skills (NELP, 2008). As the role of preschool programs became more prevalent to later school success, interest in literacy assessment increased (Lonigan, Allan, & Lerner, 2011). A key education reform at the advent of this movement was No Child Left Behind Act (NCLB) which was critical toward understanding what changes were needed to support literacy instruction and assessment, which centered around high-stakes accountability (Dennis, 2017). For example, NCLB led to the establishment of *Reading First*, which focused on assessment and accountability. Ivernizzi, Landrum, Teichman, and Townsend (2010) found the emphasis began to shift away from this level of accountability and more towards early literacy instruction and training for teachers.

Standards for School Readiness for Kindergarten

Historically, public school systems have conducted a variety of assessments of children at the beginning of kindergarten, often referred to as a kindergarten entry

assessment (Saluja, Scott-Little, & Clifford, 2000). Currently, early childhood educators are calling for kindergarten assessments that are developmentally appropriate in domains that are significant to learning (Shields, Cook, & Greller, 2016). An increase at the state level is requiring kindergarten assessments, with particular interest from teachers and public school systems (Stedron & Berge, 2014).

In the *Head Start Act*, which provides legislative authority to govern Head Start programs, school readiness goals are required to strengthen the skills and knowledge preschool-age children must have as they transition to kindergarten. At the federal level, federally funded Head Start programs have continued to coordinate efforts with their local public school system, dating back to the early nineties with national demonstration projects aimed at supporting the transition between Head Start and kindergarten through third grade (U. S. Department of Health & Human Services, Administration for Children and Families, 2000). In a more recent effort, the federal Office of Head Start launched an initiative aimed at building connections between Head Start programs and their neighboring school referred to as the "Leaders in School Readiness" Campaign (Administration for Children and Families, Office of Head Start, 2019). The results from these initiatives have paved the way for the Head Start community to continue its collaboration with public schools, in efforts to close the gap on the skills young children must have before they enter kindergarten; as well as prepare the early childhood workforce with improving teaching practices and early learning standards.

For purposes of this study, an overview of the Commonwealth of Virginia's kindergarten readiness standards is discussed in the next section. An important aspect of

these standards, what the passage into law, the Virginia School Readiness Committee in 2016. This committee was established to address the focus on building an early childhood workforce that would impact children's school readiness (Virginia School Readiness Committee, 2017).

Virginia's Standards for School Readiness

The need for establishing a kindergarten readiness assessment in the Commonwealth of Virginia was the result of a statewide bipartisan advocacy group known as Elevate Early Education (E3), which commissioned the Virginia Kindergarten Readiness Program (VKRP) in 2013 (E3,2018). Organized as a three-phased approach, VKRP is implemented across the state aimed at instituting a comprehensive kindergarten assessment. Additionally, the purpose of VKRP was to develop a more wide-ranging view of how Virginia's students arrive at kindergarten about critical school readiness skills (Virginia Department of Education, 2018). The University of Virginia's (UVA) Curry School of Education and Human Development provides assessment materials and training at no cost to participating school divisions (Williford, Downer, & Hamre, 2014). Moreover, UVA contends that with accessibility to this type of readiness data, the state can provide better support for administrators, educators, and policymakers to identify policies, early intervention strategies, and resources for improving the academic readiness of young children (Williford et al., 2014). Currently, the Commonwealth of Virginia, through the VKRP, administers an assessment of former preschoolers' literacy skills upon entry to kindergarten known as the Phonological Awareness Literacy Screening for Kindergarten (PALS-K) (VKRP, 2017).

Virginia's preschool "early learning standards," were developed by Virginia's education department to provide a quantifiable range for assessing the skills that were important as preschool children transitioned to kindergarten (Virginia Department of Education, 2013). These standards have been directly tied to the Standards of Learning (SOLs) and the PALS-K (Virginia Department of Education, 2013). The SOL's are centered around several literacy skills measured using the PALS-K (Invernizzi, Justice, Landrum, & Booker, 2004/2005). For example, alphabet and word recognition and being able to recognize rhyming words (Invernizzi et al., 2004/2005).

In a report published by the Commonwealth's Joint Legislative Audit and Review Committee (JLAR; 2017), more than one-third of Virginia children have not been prepared for kindergarten. According to the JLAR study, the reason for this is because less than half of the Commonwealth's school divisions participate in VKRP, which was commissioned by the Commonwealth to assess the abilities of children's readiness for kindergarten classes. In 2017, there were 69 school divisions out of 132 who participated in VKRP, according to the Commonwealth's JLARC (2017). However, in the 2018 Virginia General Assembly, legislation was passed that requires all kindergarten students to be assessed using the VKRP. Statewide implementation is to begin in Fall 2019. Key variables in the context of this literature review is discussed in the next section, starting with early literacy instruction.

Early Literacy Instruction in Preschool Education Programs

Currently, no agreement exists among researchers and educators in the American education system for instruction for teaching young children to read (Giles & Tunks,

2015). In their analysis, Giles and Tunks (2015) found that among literacy scholars that direct instruction of phonics was not an appropriate method to effectively teach young children to read. Different methods described over time, such as whole word, memorization, and phonics, are considered effective methods of instruction (Hamre, 2014; Giles & Tunks, 2015). Copple and Bredekamp (2009) advocated for developmentally appropriate practice that embraced the individualization of activities for young children and more child-directed instruction. As a result, there has been growing concern from educators and policymakers to improve the process of literacy acquisition of preschool-age children, especially in their transition from instruction across the preschool and the early school years.

For more than 2 decades, the field has witnessed new approaches to early literacy instruction (Nitecki & Chung, 2013), such as approaches that balance the instruction of early literacy skills with other skills, such as socialization. Chambers, Cheung, and Slavin, (2016) advocated for instructional models that emphasized phonemic awareness, phonics, alphabet knowledge, and writing embedded with other areas of the curriculum that supports creative play, music, and storytime. The literacy environment across preschool program settings also brings differences in philosophy, federal and state mandates, teacher credentials, program design, and structure.

Morrow and Dougherty (2011) described two approaches to literacy instruction that apply to preschool and kindergarten programs: child-centered and skills-based. The child-centered approach is the most recognized and accepted, where the emphasis is on the physical, cognitive and social-emotional development. Whereas, in skills-based

instruction, there is more of a methodical explicit approach to teaching literacy, which is more academic and is tailored more to kindergarten readiness (Morrow & Dougherty, 2011). While the scope of this study does not go into any depth on early literacy instruction, it was important to state that a structural basis for academic preparation does exist in preschool education.

Literacy experiences across different preschool program settings bring their cultural sensitivity when it comes to the role of literacy, such as bilingualism, as cited in Baker (2011). Preschool programs situated in diverse neighborhoods differ between racial and ethnic groups in which Waldfogel (2012) suggests reading skills will vary based on socioeconomic status. She argues that gaps in early literacy exist before entering kindergarten and that the disparities rests with environments beyond the school environment, such as the family and community. She goes on to assert that parents who create a literacy-rich atmosphere, that children are better prepared than their peers who did not have a literacy-rich environment conducive to literacy development, specifically as it relates to race and ethnicity (Waldfogel, 2012). In research conducted by Saracho (2017), preschool-age children from different racial and ethnic groups would have experienced differences in language, like those from their peers in public preschool programs. For example, they are using language in different ways to express different purposes (i. e., slang, music). She also suggests that literacy instruction methods should be representative of how children achieve proficiency in language. To understand the preschool program settings, a brief overview of each setting is discussed in the next section.

Preschool Program Landscape

Preschool is a broad term used to distinguish any school that enrolls children before they enter formal schooling; and found to promote school achievement (Rigby, 2017). In the United States, a preschool program enrolls children between the ages of three-to-five. In the last half-century, the U. S. has seen tremendous growth in preschool enrollment, specifically driven by increased interest of parents, who want to make sure their children are attending programs that promote healthy development and school readiness (Rigby, 2017). Preschool programs come with an educational focus, such as a proven curriculum (Bowman, Donovan, & Burns, 2001), and vary in the structure of the program, staffing, and weekly schedules, all of which affects the value of their education services. There is often a distinction between childcare and preschool, given that childcare programs also enroll infants and toddlers.

A critically important aspect of preschool programs is the demographics of the early childhood teaching workforce. The requirements and qualifications of teachers in kindergarten and preschool educational settings are extremely different (Pianta et al., 2009). For example, a 4-year degree, certification to teach and specialization is required for kindergarten teachers, whereas, preschool teachers in Head Start, childcare, and public schools will have different levels of professional training and education (Pianta et al., 2009). Variability also exists among the education requirements for preschool teachers across different program settings, state licensure requirements will apply to public school pre-k teachers, whereas, Head Start federal standards require lead teachers

to have a Bachelor's degree (Early et al., 2007), and childcare teachers are not required to have a degree (NICHD, 2002).

Preschool teachers' education level has been the focus of most attention from policymakers, researchers and program directors, due in part to the association between teacher qualifications and child outcomes (Pianta et al., 2016). Moreover, studies such as conducted by Burchinal et al. (2008) and Mashburn (2008) show that teacher qualifications, such as education level has less influence on early literacy. Pianta and his colleagues argued that while it may clear that a teacher's formal education could be associated with child outcomes, it has not been evaluated for effectiveness. In order for preschool teachers to effectively educate young children, much more attention to competencies and teacher content knowledge is critical for improving instruction and child outcomes (Cunningham et al., 2009). While the educational attainment across different preschool programs differs substantially, so has compensation (Philips, Austin, & Whitebook, 2016). For example, across the different preschool program settings, preschool teachers who may have the same level of education have noticeably different incomes. In a 2016 report published at the federal level, preschool educators with a 4-year degree employed in a public school earn $6.70 an hour more when compared to teachers employed in Head Start and childcare programs (U. S. Department of Education, 2016). This difference translates as a difference of $13,936 annually. When expectations and preparation differ for those educating children in similar settings, the field faces the risk of staff turnover and hiring teachers who are less qualified. As brief overview of each preschool program setting is discussed in the next section.

Head Start. Head Start is a federally funded program that provides comprehensive services to preschoolers 3-5 years old and their families, who are from low-income backgrounds who meet income eligibility according to Federal government guidelines (U. S. Department of Health & Human Services, 2018). As legislated in the *Head Start Act,* Head Start programs are required to develop school readiness plans as part of their childhood education and development services (U. S. Department of Health & Human Services, 2017). Historically, Head Start has been recognized as the national early childhood education model (U. S. Department of Health & Human Services, 1997). In an effort to determine how Head Start affects school readiness, a National Head Start Impact Study was authorized (U. S. Department of Health and Human Services, 2010). The National Head Start Impact Study examined gains made in language and literacy, which would later influence their achievement in kindergarten.

Study participants were randomly assigned between two cohorts that represented a national sample of Head Start programs: (a) children enrolled that received program services for one year, and (b) children who were not enrolled. Outcomes from both groups were compared to determine whether receiving Head Start services influenced their school readiness. A comprehensive battery of measures and assessments were performed with all study participants, children, teachers, and parents from both cohorts. Head Start parents and teachers of both cohorts were requested to assess the skills and achievement of children using different measures. Assessments for children focused on different skill areas, such as literacy, math, writing, and vocabulary (HHS, 2010). The study found access to Head Start had positive impacts on several aspects of children's

school readiness during their time in the program, specifically in language and literacy in the cognitive domain.

Childcare. Childcare programs have the central goal of caring for children for working families (Johnson, 2017). Although childcare and preschool programs serve young children, their origins and program goals differ slightly (Johnson, 2017). For example, while school readiness is a central aspect of preschool-age children's development in childcare programs, education outcomes are less regulated and follow an eclectic curriculum versus a published curriculum. Moreover, Johnson (2017) asserted that although there is a gap in the literature when it comes to the goal of school readiness in childcare programs, evidence has demonstrated that the effects of childcare has yielded positive outcomes for young children. Additionally, efforts have been made at the state level to impose quality standards that allow childcare programs to demonstrate progress using a rating system known as QRIS (Tout, Starr, Soli, Moodie, Kirby, & Boller, 2010). Most notably, in observational studies conducted by NICHD (2005), found childcare program quality is consistently and positively associated with gains children make in early math and literacy.

Public school pre-kindergarten. Public school prekindergarten (referred to as pre-k programs) are part of a local school district, which is funded at the state level (Barnett, Votruba-Drzal, Dearing, & Carolan, 2017). Additionally, Karoly and Auger (2016) characterized pre-kindergarten programs as heterogeneous and scaled to measure program effectiveness. Not all studies examining state-funded programs have been positive, such as the effects of Tennessee's Voluntary Prekindergarten (TN-VPK)

program, there were mixed findings; specifically, the evidence of pre-k gains as sustainable as children entered kindergarten (Lipsey, Farren, & Hofer, 2015). TN-VPK was a longitudinal study that included two cohorts of children: 1) children enrolled in the TN-VPK program, and 2) control group who attended other preschool programs through random sampling. To study the effects of TN-VPK, specific measures were distributed among two groups (a) achievement and (b) nonachievement. The achievement measures assessed literacy, vocabulary, and arithmetic, and the nonachievement measures assessed social behavior. The authors indicated the selection of noncognitive measures are often used in longitudinal studies because cognitive factors tend to fade while noncognitive outcomes develop over time (Lipsey et al., 2015).

Teacher Content Knowledge in Early Literacy Instruction

Teachers are at the heart of providing literacy-rich experiences by creating classroom environments conducive for learning (Byington & Kim, 2016). The authors, Byington and Kim examined how a content-specific teaching toolkit could be used to expand on assisting young children to develop emergent literacy skills. By introducing steps for creating a toolkit, teachers could purposefully plan experiences designed for students to engage in content-focused language and literacy, by strategically placing books and writing materials throughout the classroom. As a result, Byington and Kim (2016) argued that by intentionally staging literacy-rich props, students could explore through interactions with other peers to expand their knowledge, therefore enhancing their early literacy skills. Therefore, it is critical to recognize the expertise teachers come with, in order to deliver effective early literacy instruction. Dickinson and Brady (2006)

examined different professional development approaches and found teachers faced challenges because of a lack of a comprehensive professional development system that could support teacher development in early literacy instruction.

Additionally, while an emphasis on improving the knowledge base for instruction for teachers in science and math has persisted, there has been less or no emphasis placed on improving the knowledge base toward literacy instruction (Cunningham, Zibulsky, & Callahan, 2009). The authors argued that literacy instruction is not considered as serious as a discipline as science and math. In an earlier study conducted by Phelps and Schilling (2004), the goals of literacy instruction are still debated among academia and researchers in the education field in terms of the knowledge teachers must have for reading instruction. Through factor analysis, Phelps and Schilling (2005) found teachers must develop better knowledge of linguistic features, and more importantly that reading instruction, similar to math instruction, requires specialized knowledge of content (Phelps & Schilling, 2004). In another study, Crim, Hawkins, Thornton, Rosof, and Copley (2008) found variation among teachers about their early literacy knowledge. The authors contended that if teachers do not have or understand early literacy knowledge, the less likely that they could teach these skills to young children (Crim et al., 2008).

In similar research conducted by Hindman and Wasik (2011) they found preschool teachers who had more education, had more content knowledge in literacy than those preschool teachers who participated in some aspect of professional development in early literacy; however, teachers with more content knowledge in early literacy instruction performed better in the classroom. These authors contended that preschool

education has minimal assessments that measure preschool teachers' content knowledge in early literacy. Whitebook and Ryan (2011) argued that there is not much agreement in the field on how to codify and collect data on teacher knowledge and skill, which is directly related to gaps found in the research that supports the statement of the problem.

The acquisition of early literacy skills plays a key role as children prepare for kindergarten. In a study conducted by Hindman and Wasik (2011), a measure called the Teacher Knowledge Measure was used that evaluated a teachers' conceptual and procedural knowledge about preschool literacy instruction. Head Start teachers were the participants in the Hindman and Wasik (2011) study. The findings revealed that content knowledge varied, specifically for teachers with more years of education, who actually responded correctly to 78% of the questions in the measure. Additionally, Hindman and Wasik (2011) asserted that there are not many tools that exist for measuring teachers' knowledge about early literacy.

Connor, Morrison, and Slominski (2006) conducted a longitudinal study involving Head Start, childcare, and pre-k programs. The purpose of this study investigated emergent literacy experiences delivered to preschool-age children across different preschool program settings and how these settings contributed to emergent literacy development as children transitioned to kindergarten. Assessments were conducted twice a year, during the fall and spring. Questionnaires were completed by teachers and parents to gain information on their education levels. During the regular school year, classroom observations were conducted to determine levels of instructional activity (Connor et al., 2006). The findings indicated significant variability in the levels

of instructional literacy activities, which implied that children who entered kindergarten with fewer skills in literacy required more targeted instruction as opposed to children who were assessed with more skills benefitted from more meaningful and intentional instruction (Connor et al., 2006, p. 682).

The Preschool Curriculum Evaluation Research Consortium (PCER; 2008) conducted a national study from more than a decade ago, that examined preschool teacher knowledge that centered on measuring the effectiveness of various curricula implemented to support math and literacy instruction. Preschool curricula were reviewed to determine the influence of different student-level outcomes (PCER, 2008). Of the fourteen curricula reviewed, the findings revealed only two of the fourteen had an impact (PCER, 2008), which was used predominately across Head Start and pre-k programs. Another large-scale effort to help preschool teachers establish content knowledge in early literacy, Dickinson (2002) reviewed state and national professional development models that were put in place for preschool teachers to meet the knowledge and skills requirement; however, not much movement has been made to institute new practices.

There are not many current studies that have examined teacher content knowledge in early literacy instruction in preschool programs. Moats (1994) developed the Teacher Knowledge Survey, which was used to assess teacher knowledge of reading instruction in urban school districts known to be low-performing in reading proficiency, and found that while teachers are experienced in teaching, many did not have a real grasp of language structure. In further research, Moats and Foorman (2003), found modest results were achieved that showed a relationship between teachers' content knowledge and grade-level

reading. Other studies have shown that a teachers' education level and years of teaching experience does not meaningfully influence student achievement (Early et al. ,2006); Howes et al., 2008). However, the level of education that some preschool teachers attain is unique to their respective program setting of which they are employed, such as a high school diploma, with limited training in early literacy development, while others have graduate degrees (Burchinal, Hyson, & Zaslow, 2008). Although many of these studies were conducted in the past, there has not been any recent studies examining teacher content knowledge in literacy instruction, which has shown to be a gap in the research literature.

Phonological Awareness

Phonological awareness as key component in early literacy development forms the foundation for learning early literacy skills (Crim et al., 2008). These authors argued that preschool teachers must have the knowledge to teach phonemic awareness, therefore, increasing the probability that preschool-age young children will gain basic literacy skills they need before they enter the early grades. In similar research conducted by Durst and Joseph (2016), they found that explicitly teaching young children phonemic awareness skills will help them develop basic reading skills with ease when they enter the early grades. Additionally, Crim and her colleagues found that teachers' increased knowledge of phonological awareness contributes to early reading success. A key focus of this study examined teachers' content knowledge in phonemic awareness (PA), which relied heavily on teachers' self-report of their PA knowledge, which Cunningham et al. (2009) found as inconsistent with their actual knowledge. Cunningham and her colleagues found

teachers who were more assured in their knowledge of phonological awareness, tended to be limiting in their self-report than teachers who demonstrated less confidence and often overestimate what they know. Kruger and Dunning (1999) coined this phenomenon as individuals with less knowledge to self-report their knowledge as being better than it is, while others with advanced knowledge to underestimate their competence, known as the "Dunning-Kruger effect."

In evaluating teachers' phonological awareness and knowledge, Moats (2014) found notable knowledge gaps which have consequences for literacy measurement and teaching practices. She further argued that teachers are not able to measure or teach something they do not know themselves. Inspired by research conducted by Binks-Cantrell, Washburn, Joshi, and Hougan (2012) the term "Peter principle," provided more meaning to increase the field's knowledge of the circumstances by which teachers are not adequately prepared in reading instruction. Furthermore, Applegate and Applegate (2004) framed this principle as one cannot give to others what one does not have oneself. It is within this context of how the lack of teacher knowledge in early literacy instruction can contribute to inequities of early literacy instruction and assessment across different preschool program settings. In the next section that that follows, a review of studies is presented to show the relevance of how teachers' acquisition in early literacy instruction contributes to inequities that could influence student achievement.

Inequities of Early Literacy Across Preschool Education Programs

Cunningham and her colleagues (2009) argued that no matter what the socioeconomic status or a program's quality, preschool teachers have the advantage to

provide learning experiences for preschoolers to build literacy skills upon their entry into kindergarten. Preschool programs found to lessen achievement gaps, such as developing literacy skills of children, minimize the academic risk as children enter kindergarten (Camilli, Vargas, Ryan, & Barnett, 2010; Foster & Miller, 2007). However, preschool-age children enrolled in quality preschool programs will less likely fall behind their peers (Boylan & White, 2010; Burkham & Lee, 2002; Garcia, 2015). In more recent studies, the effort to increase achievement outcomes for preschoolers has been from the effects of the expansion of more pre-k programs, which has increased enrollment in early childhood education programs (Magnuson & Duncan, 2016).

In the 2015 report published by the IOM and NRC, the expectation is that all teachers who work with preschool-age children require at a minimum, a four-year degree in early childhood education. Without an increase in salaries, preschool teachers will be less apt toward pursuing and earning a Bachelor's degree (Whitebook, 2014). While it is well documented in research that high-quality preschool programs lessen the achievement gap (Camilli, Vargas, Ryan, & Barnett, 2010, Foster & Miller, 2007), much of this success depends on the quality of preschool educators (Whitebook, 2014). Nonetheless, very little has changed to improve compensation for preschool educators (Whitebook, 2014), which has implications for the differences in education requirements of teachers, which inevitably will contribute to inequities across different preschool program settings. Evidence suggests that children who are at-risk academically gain the most from high-quality preschool programs (U.S. HHS & Education, 2016). In a research policy brief published in 2016 by the National Council of Teachers of English, an emphasis was

placed on a number of factors important toward addressing issues of equity are staff qualifications, staff knowledge of child development, staff ability to transform their knowledge of child development, such as developmentally appropriate learning opportunities.

As a profession, early childhood educators must be valued and thus supported across the nation, like other professions that support an individual's well-being (Goffin, 2013). As inequities in early literacy expose the lack of skills children have as they enter kindergarten, preschool teachers will need accessibility to teacher preparation programs, professional in-service training, and adequate compensation in order to do their jobs well (HHS & ED, 2016).

School Readiness Between Preschool and Kindergarten Programs

Preschool education has been provided for more than fifty years as early intervention (Duncan & Magnusson, 2013). However, most early childhood researchers are still unable to answer a basic question of what skills are most important for long-term success. Conversely, kindergarten over the past 2 decades has made a dramatic shift from less developmentally appropriate practices to more academic skill-building and test preparation, as cited in a report issued by Miller and Almon (2009). Therefore, the goals of school readiness between preschool and kindergarten programs have revealed a misalignment that has shown poor ratings of reading and math competence of children transitioning to kindergarten (Abry, Latham, Bassok, LoCasale-Crouch, 2015). Although attendance in preschool is not mandated in the U. S., there has been increased research linking the alignment and coordination of school readiness in the early grades (Bassok,

Latham, & Rorem, 2016; Sabol & Pianta, 2017). Farran (2016) argued the misalignment among preschool program settings, which brings different structures in staffing, curriculum and instruction, and learning environment. In preschool programs, early literacy development as an indicator of school readiness has placed additional pressure on teachers to prepare children to be ready for kindergarten (Nitecki & Chung, 2013).

The importance of the academic skills preschool-age children bring as they transition from preschool programs to public school kindergarten has been emphasized for decades (Sabol & Pianta, 2017). The authors contended that there had been an increased interest to invest more in high-quality preschool programs, for fostering school readiness as children transition to kindergarten. Sabol and Pianta (2017) also elaborated on the current framework for school readiness in the U. S. and how it would better define comprehensive definitions of school readiness. A key challenge argued by Sabol and Pianta (2017) centers around a multidimensional construct aimed at measuring and identifying disparities in skills that characterize school readiness. For example, the measurement approaches involved in the 2011 ECLS-K provided important knowledge across multiple domains that captured substantive results about the costs and types of school readiness gaps in the U. S. (Sabol & Pianta, 2017).

As researchers who study preschool programs, Farran and Lipsey (2015) posited that preschool programs are too focused on academics for young children and make environments in which the approaches for learning are restrictive. In the longitudinal study of the TN-VPK conducted by Farran and Lipsey (2015), they found children who were enrolled in the TN-VPK program are better prepared than children not enrolled in

TN-VPK, such as in their home or another preschool, as reported by kindergarten teachers when they entered kindergarten. However, in an analysis of the 2015 TN-VPK study, Grunewald (2016) contended that sustaining early gains from preschool may be difficult if the experiences and instruction are significantly different from what is expected in kindergarten programs.

Haskins and Brooks-Gunn (2016) contended that preschool education, in which states are becoming more involved, had shifted the policy arena to expand and invest in quality programming to ensure the academic readiness of children as they approach kindergarten. They believe that preschool programs, namely, childcare and Head Start, will switch to pre-k programs in the public schools. Haskin and Brooks-Gunn (2016) reported a number of concerns with the TN-VPK study, which paved the way for much more vigorous debate among early childhood researchers, whom for decades have attempted to inform the field of the effectiveness of pre-kindergarten in the public school system, targeting young children's academic success. Haskins and Brooks-Gunn (2016) expressed concerns that the design was flawed and the random selection of children who were assigned to attend TN-VPK versus another preschool program as the control group.

Another key aspect of school readiness between preschool and kindergarten is the number of children who receive some form of preschool education before entry to kindergarten. As a nation, the United States enrolls 67% of preschool-age children are enrolled in preschool, compared to other countries (Organization for Economic Cooperation and Development (OECD) (2017). Figure 2 illustrates a considerable number of four-year-olds not enrolled in any preschool program, which places those

children at risk academically upon their entry to kindergarten which is directly tied to academic readiness between preschool and kindergarten (U. S. Department of Education, 2015). This data excludes four-year-olds enrolled in private childcare programs or home-schooling.

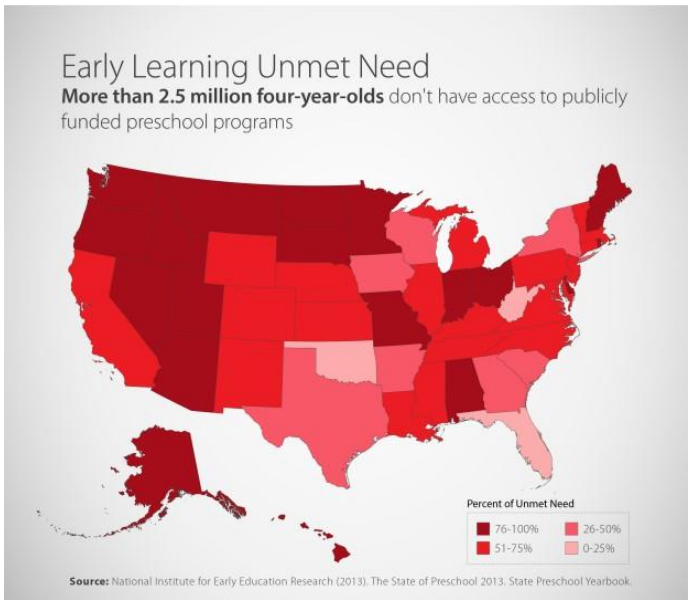

Figure 2. Number of four-year olds without access to early education

Kindergarten and the role it plays in education has been the subject of research for numerous decades, specifically as it relates to how curriculum and instruction relate to teaching practices in early reading (Thompson & Sonnenschein, 2016). The authors were interested in learning whether attendance in part-day or full-day kindergarten would show differences in reading performance. More specifically, their interest was whether the reading skills children acquire in kindergarten could be related to the foundational reading skills acquired during preschool. After controlling for preschool attendance that could have been associated with early reading, the authors found preschool-age children enrolled in a full-day program were better in early reading than preschool-age children

enrolled in a part-day program. Although the academic readiness acquired during preschool was not a factor in addressing early reading attainment before entering kindergarten, the authors' emphasis was to demonstrate the gaps children had in their reading skills according to the length of time spent during their kindergarten day. Moreover, the authors asserted that preschool-age children enrolled in a structured, quality preschool setting would experience a successful transition to kindergarten, and more likely to experience of later school success through third grade.

There has been a wave of education reform efforts that have included goals for school readiness, although requirements for assessments during preschool and kindergarten have not been consistent across states; namely, NCLB and ESSA. Bassok, Latham, and Rorem (2016) argued academic readiness between preschool and kindergarten programs is an important factor in determining later school success. In research conducted by These authors found that a majority of kindergarten teachers reported that learning to read should occur in kindergarten. While there are several approaches used across preschool programs that support kindergarten readiness, there have been a limited number of studies examining the effectiveness of preschool education on kindergarten readiness (Bassok, Latham, & Rorem, 2016).

An important aspect of this study was aimed at exploring how different preschool program settings could influence a child's early literacy skills before entering kindergarten, as it related to preschool teachers' content knowledge in early literacy. Lonigan, Allan, and Lerner (2011) found that preschool-age children are not readily identified as their peers in kindergarten, as a result of a lack of consistent assessment

procedures, making it less probable for them to become proficient readers with similar instruction as they enter into the elementary grades. This study brings awareness that furthers the early childhood education field's understanding to implement professional development aimed at supporting preschool teachers' early literacy knowledge for better instruction, which in effect, better prepares preschool-age children in their transition to kindergarten.

Transition from Preschool to Kindergarten

Coordination between preschool and kindergarten programs have an essential role in establishing a foundation for a child's successful transition. Effective transition programs and practices can ensure that a child moves from one learning setting to another successfully. The renowned economist, James Heckman (2007) argued: "too often government officials design programs for children as if they lived in silos, as if each stage of a child's life were independent of the other, unconnected to what came before or what lies ahead." Heckman (2007) asserted that investments made early in children should not stop at the early grades but with continuing resources and funds during the later school years.

There is substantial evidence to suggest the significance of early learning to later school success (Duncan & Magnuson, 2013; Barnett, 2011; LoCasale-Crouch et al. 2008). The importance of kindergarten recognized by both preschool and elementary school administrators, identified ways to ensure smooth transitions from preschool, such as hosting kindergarten round-ups, sharing information with parents, and arranging visits to the new school (Little, Cohen-Vogel, & Curran, 2016). Cook, Coley and Zimmerman

(2019) found other practices which allow for joint endeavors that preschool and kindergarten programs can do to ensure successful transitions between programs. For example, exchanging student information, and hosting in-service training for teachers to share knowledge and teaching strategies related to instruction (Cook et al., 2019).

Summary and Conclusions

It is well documented in the research for more than 2 decades how important changes to the standards and practices in preschool programs have emerged (Philips, Mekos, Scarr, McCartney, Abbott-Shim, 2000; Bogard & Takanishi, 2005; Kagan & Kauerz, 2007; Son, Kwon, Jeon, & Hong, 2013; Yoshikawa, Weiland, and Brooks-Gunn, 2016; Sabol & Pianta, 2017). The major themes in this literature review have emphasized the theoretical foundation of Bronfenbrenner and Piaget for this study which is aimed toward the value of understanding the ecology of emergent literacy in the framework of school readiness, preschool teacher content knowledge, and early literacy instruction across different preschool program settings.

The gap in the literature revealed an inconsistency in preschool teachers' knowledge in early literacy instruction and the lack of measures available to assess the content knowledge of educators who teach in the most vulnerable settings for implementing developmentally appropriate practices to ensure reading readiness. This study examined the relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching, to the emergent literacy assessment of preschool-age children. The findings of this study can influence social change and serve as a starting point to address potential inequities in preschool program settings, such as

teacher preparation, and specialized knowledge in early literacy. These gaps are evident between the skills children learn in preparing for kindergarten, which is typically not found until standardized testing is administered in the later school years. Furthermore, the skills that children learn are extremely important for children who may be at risk academically will have the potential of being up to twelve months behind their peers in emergent literacy skills (Kuhl, 2011; Shonkoff & Phillips, 2000).

In the next chapter, the research design of the study are discussed, which includes the sample population, recruitment of participants, instrumentation, data collection, and the data analysis plan. The threats to validity, and ethical considerations are also discussed.

Chapter 3: Research Method

Introduction

In this chapter, I discuss the research design, methodology, population, recruitment of participants, instrumentation, data collection, data analysis plan, threats to validity, and ethical considerations. The nature of the study is discussed, along with the characteristics of the sample and literature that aligns with the research problem. This study examined the relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment of children upon their entry kindergarten. Additionally, this study examined the differences in emergent literacy assessment across different preschool program settings.

Research Design and Rationale

The nature of this exploratory study was quantitative. Data came from two sources: (a) a teacher survey questionnaire and (b) students' emergent literacy assessment scores (secondary data from local school districts). The research design selected for this study has a direct connection to the research questions, such as collecting information from using a survey questionnaire. In the proposed research design, study participants were selected from across three different preschool program settings, to examine the relationship of preschool teachers' content knowledge in early literacy to emergent literacy assessment across each preschool program setting. Due to the low number of preschool teachers recruited from childcare programs, I reduced the analysis to 2 settings: Head Start and pre-kindergarten. This research design is also consistent with descriptive

research, which, according to Given (2011), can validate the functional relationship between variables, hypothesis testing, and generalizability. There were two research questions that tested specific hypotheses. The independent variables for the first research question (RQ1) were: (a) preschool teacher content knowledge in early literacy, (b) education level, and (c) years of teaching experience. The level of measurement for two variables: teacher content knowledge and years of teaching experience were interval. One variable was ordinal: education level. The preschool program type was a categorical variable. The dependent variable is the students' emergent literacy assessment scores, an interval level of measurement. This analysis was conducted using multiple regression. Pederson (2017) suggested it is probable to use categorical data for a multiple regression analysis when said variables are coded into specific, previously identified continuous formats. The independent variable for the second research question (RQ2) was preschool program setting, and the dependent variable was students' emergent literacy assessment scores. This analysis was conducted using a one-way analysis of variance (ANOVA).

Teacher knowledge was defined as teachers' content knowledge in early literacy as measured by the scores from the teacher survey questionnaire. Education level was defined by the level of education obtained or completed, such as high school, undergraduate, and graduate degrees, which did not have a numerical value. The education level was not represented as a numerical value but as a frequency that represents an observed category and as a demographic variable (see Sirkin, 2011). The time and resource constraints with the design choice for this study were contingent upon the return rate of responses from the preschool teachers in completing the survey

questionnaire, and upon receiving the secondary data (student emergent literacy assessment) from the local school divisions. Local school divisions in the Commonwealth of Virginia who participate in VKRP are required to administer this assessment twice a year (fall and spring). The research design for this study was supported by other research designs aimed at advancing research around key indicators that support school readiness across other domains in the field of early childhood education (Binks-Cantrell, Malatesha, & Washburn, 2012; Lonigan et al., 2011; Shayne, Piasta, Connor, Fishman, & Morrison, 2009).

Methodology

Population

The sample for this study was 88 preschool teachers employed at one of the three preschool program settings selected for this study: Head Start, childcare, and pre-k located in a neighborhood school district in the Commonwealth of Virginia. Given the exploratory nature of this study, this study sample is only a subset of the targeted population of preschool teachers. In the United States, there are 523,600 preschool teachers employed (U. S. Bureau of Labor Statistics, 2018). The Commonwealth of Virginia employs 9,730 preschool teachers, who are employed at different preschool programs, such as the three preschool programs selected for this study (U. S. Bureau of Labor Statistics, 2017).

Sampling and Sampling Procedures

Convenience sampling was used to recruit participants for this study. Other sampling methods such as purposive sampling and snowball sampling were considered

but were not the most appropriate based on the design of the study. Convenience sampling is known as a non-random sampling approach where individuals of a specific population who meet specific conditions, such as: (a) easy accessibility, (b) physical location, or (c) willingness to participate given the goals of the study (Etikan, Musa, & Alkassim, 2015). The researcher selected this sampling strategy because of the easy accessibility to participants who were located within close distances. Using convenience sampling assumes that members from the targeted population will be similar; that is, there will be no difference in the research results if they had been obtained from a randomized sample (Etikan et al., 2015).

Bornstein, Jager, & Putnick (2013) argued that even though probability sampling yields results with clearer generalizability, convenience samples have been the norm in developmental and educational research. Given the limitations of this sampling strategy, the results from studies are not very generalizable to other settings (Salkind, 2010). However, this sampling strategy was the most appropriate for this study given the exploratory nature of the study and the gaps in the research literature. For purposes of this study it was also important to recruit participants who were located in close proximity of their neighboring elementary school and that participated in a statewide school readiness initiative (Virginia Kindergarten Readiness Program, VKRP) aimed at emergent literacy assessment of new kindergartners.

Therefore, the primary selection criteria related to the ease of obtaining a study sample. As compared to purposive sampling, which is generally considered most appropriate for the selection of small samples and assumed to be representative of the

target population, convenience sampling relies on the geographic distribution of the sample (Battaglia, 2008).G*Power analysis was conducted to determine sample size and statistical power (Faul, Erdfelder, Lang, & Buchner, 2007). The power was set at .80 and the alpha level at .05, and a confidence interval at 95%, because it is considered a standard in determining power (Laureate Education, 2009). The effect size (f_2) selected was calculated at .15. The number of predictors was three, and the sample size calculated for the multiple linear regression was 77 participants, whereas the sample size calculated for a linear regression was 74 (Faul et al., 2007). The final sample size for this study was 88 participants. Two preschool program settings were examined using a one-way ANOVA.

The inclusion criteria included: 1) teachers who represented one of the three preschool program settings selected for this study; and 2) teachers who had children transitioning to kindergarten in the upcoming school year. The preschool programs selected for this study are known to enroll a majority of children who are ages four to five (U. S. Department of Education, 2015). Exclusion criteria that would remove participants from this study was not applicable. Study participants could withdraw voluntarily at any time during the study. There was one key difference across each preschool program setting that affected the initial design and analysis of this study, specifically the sample size. For example, pre-k and Head Start programs often enroll 4-year old children only, whereas childcare programs serve mixed-age groups between birth to age 5, and often have a higher number of infant-toddler teachers versus preschool teachers. Additionally, many of the childcare programs who were recruited for this study, did not have as many

preschoolers transitioning to kindergarten that coincided with the researcher's data collection period. Based on the differences in enrollment across age differences and the number of children transitioning to kindergarten, the sample size for the childcare group was significantly less than the Head Start and pre-k group.

Procedures for Recruitment Participation and Data Collection

A letter requesting participation in this study was emailed to school district administrators and Head Start and childcare directors. Letters of cooperation were received by the participating preschool programs and school divisions and were sent to the IRB. The preschool programs selected as participants were identified from Virginia's Department of Education website for school divisions, Virginia Department of Childcare online directory, and early childhood professional member associations which also provided contact information of each program administrator. Fifteen Head Start programs and ten childcare programs were emailed invitations to participate. Of the Head Start programs, five agreed to participate, and six of the childcare programs agreed to participate. Follow-up email reminders and telephone calls were made to ensure a response would be received. Upon receipt of the program administrator's letter of cooperation, copies were provided to the IRB for approval to begin the recruitment of study participants. Upon IRB approval, an email was sent to study participants (preschool teachers) with the informed consent form as an attachment and a hyperlink to the online survey questionnaire.

There was no follow-up or exit process from the study for participants or participating programs once data collection was finalized. As indicated on the last page of

the teacher survey questionnaire, there was a brief statement to thank teachers for their participation. A summary of the study's findings is to be provided to all study participants and partnering organizations once all requirements of the study have been met in accordance with Walden University.

Teacher Survey Questionnaire

The questionnaire in its entirety as developed by the author was transferred to a web-based program called SurveyMonkey (SurveyMonkey Inc., n.d.). SurveyMonkey is a web-based platform that provides ready-made survey templates that can be used to transfer content that converts response data into different formats, such as being exported to an Excel spreadsheet. The teacher survey questionnaire was labeled according to each preschool program setting. For example, for Head Start, it was labeled, Teacher Phonemic Awareness-HS, childcare as Teacher Phonemic Awareness-CC, and pre-k as Teacher Phonemic Awareness-PreK. Therefore, three separate weblinks were created in Survey Monkey for each preschool program setting. The teacher survey questionnaire remained open throughout the school year to accommodate school schedules and upon receipt of letters of cooperation, permitting to contact participants. The number of non-responders is reported in Chapter 4.

Student Archival Data

Archival data in the form of student emergent literacy assessment known as the Phonological Awareness Literacy Screening for Kindergarten (PALS-K) was requested from each participating school division. Data from the PALS-K was used to answer the second research question, which was to examine if there were differences in emergent

literacy assessment between different preschool program settings. The PALS-K is administered by Virginia school divisions on an annual basis that involves the screening of former preschool students who transitioned to kindergarten. The screening is administered twice a year, in the fall and spring during the school year. Of the 69 participating VKRP school divisions, an invitation letter was emailed to 20 school divisions requesting permission for access to the PALS-K student data. School personnel from five school divisions agreed to participate in the study and provided permission for access to student data. Student-level data were aggregated according to the preschool program setting instead of by the school division or individual cohort group.

Instrumentation and Operationalization of Constructs

The instrumentation for this study included two measures: (a) Phonological Awareness Literacy Screening for Kindergarten (PALS-K) and (b) Survey of Teacher Phonemic Awareness Knowledge and Skills (PhaKS). Each instrument and its appropriateness for this study are described in the next section.

The PALS-K measurement was published in 2013, as a measure of children's emergent literacy skills to help guide teacher instruction (Invernizzi et al., 2013). The PALS-K was designed to cover four major areas in emergent literacy: print concepts, writing, phonological awareness, and alphabet knowledge (Invernizzi et al., 2013). PALS-K is recognized as Virginia's screening measure aimed at decreasing the number of children who experience problems with reading (Invernizzi et al., 2013). The PALS-K is comprised of six subtasks that when combined forms a "Summed Score" (Invernizzi et al., 2013, p. 9). The "Summed Score" is typically compared against a benchmark that

represents minimum expectations during a fall and spring assessment period. The PALS-K is administered individually, but a few tasks can be given in small groups of five or fewer students (Invernizzi et al., 2013). This instrument was chosen as a secondary source of data.

The authors used Cronbach's alpha in achieving reliability of the six subtasks. The reliability coefficients reported for individual tasks range from .79 to .89, which met criteria for internal consistency (Invernizzi et al., 2013). Pearson correlation coefficients ranged from .96 to .99, stating interrater reliability. These results also indicated that the tasks could be scored reliably across individuals and among many different groups of users (Invernizzi et al., 2013). For each of the six subtasks, the authors reported that the Cronbach's alpha range = .83 – .90 across subtasks. Three types of validity were used by the authors to determine if the measure assessed what it was intended to measure: 1) content, 2) construct, and 3) criterion-related (predictive and concurrent).

To assess *content validity*, the authors were sensitive to ensure items represented the literacy subject matter, such as letters of the alphabet (Invernizzi et al., 2013). To assess c*onstruct validity*, which looks at the degree to which the qualities of the measure reflect the theoretical model by which it was developed was also used (Invernizz et al., 2013). To test the theoretical model, the authors conducted this analysis using: 1) principal components analyses to validate the underlying factor structure; 2) discriminant analyses to establish the extent to whether group association could be predicted from the subtask scores; and 3) "receiver operating characteristic curve analysis" to determine the analytical correctness for the measure (Invernizzi et al., 2013). The third form of validity

used included criterion-related, i.e., predictive and concurrent. *Predictive validity* was assessed using two approaches. The first approach compared PALS-K scores from a fall assessment to scores from the *Stanford Achievement Test* obtained from a spring assessment, each during the same school year (Invernizzi et al., 2013). The authors used regression equations, in which 50% ($p < .001$), and the adjusted R^2 was .47, explained the proportion of variance (Invernizzi et al., 2013). The second approach, the authors performed an analysis to determine if the PALS-K fall Summed Scores predicted spring Stanford-9 scaled scores for all three *Stanford-9* subtasks ($p < .001$); adjusted R^2 for Stanford-9 Word Reading was .54 ($p < .001$) (Invernizzi et al., 2013).

To assess the c*oncurrent validity* the authors found a correlation between the fall assessment of the PALS-K Summed Score to the Total Reading scaled score from the Stanford-9 to be medium to high and significant ($r = .72$, $p < .001$) (Invernizzi et al., 2013). These correlations were also found to be medium to high and significant based on the three Stanford 9 subtests (Invernizzi et al., 2013).

PhaKS was published in 2004, as a 15-item multiple-choice instrument designed to examine teachers' content knowledge in early literacy development (Cheesman, 2004). A copy of the original author's survey is located in Appendix A. Permission to use the PhaKS instrument from the lead author is located in Appendix B. The PhaKS is constructed around four key components: 1) definitions, 2) teaching methods, 3) instructional activities; and 4) skills in phoneme awareness (Cheesman, 2004). Of the 15 items, nine are aimed to measure "conceptual knowledge about phonemic awareness," and six that measure "skill" in phoneme awareness (Cheesman, 2004). There are four

multiple-choice items scored as 1-point for correct answer and 0-points for incorrect answers. A fourth choice was included as "I'm not sure," which the author contends was included to deter respondents from speculating (Cheesman, 2004). The maximum score is 15. Eight demographic questions were included before the multiple-choice assessment, such as age, gender, ethnicity, and education level. This instrument was chosen for this study because it offers a measure of the conceptual knowledge and skills in understanding phonemic awareness, which is relevant to emergent literacy skills. This instrument was transferred to an online survey template without any modifications to the original content for participant's online self-administration.

The lead author designed this survey for internal consistency and reliability that initially produced a Kuder-Richardson 20 coefficient as .69 (Cheesman et al., 2009). Bolarinwa (2015) asserts the K-R20 is often used to determine if items within the instrument would produce the same results. The authors argued that by keeping the length of the test short, it would encourage participants to return the survey (Cheesman et al., 2009). The authors applied Spearman-Brown to determine the consistency of scores from a test that was twice in length and similar in subject matter (Cheesman et al., 2009). As a result, reliability increased to .82 (Cheesman et al., 2009). *Content validity* was conducted for the PhAKS before the final development of the tool (Cheesman et al., 2009). A question bank of twenty-five items was rated by several experts, such as university professors, language therapists, and consultants from state departments of education based on their expertise in early literacy instruction and achievements within their profession (Cheesman et al., 2009).

The PhaKS teacher survey questionnaire has been used in previous studies examining what preschool teachers need to know to support preschoolers' needs in early literacy development (Tajuddin & Shah, 2015; Cheesman et al. 2009). In research conducted by Tajuddin, and Shah (2015) examining the phonemic instruction of primary school English teachers, found a majority of teachers were inadequately prepared, had minimal knowledge in literacy instruction, and lacked the skills to select task appropriate for literacy instruction. There is a substantial gap that exists in the research for instruments aimed at assessing teacher content knowledge in the basic skills of language and literacy (Binks-Cantrell, Malatesha, & Washburn, 2012). There have been a few studies conducted, such as Spirou (2008); Tajuddin and Shah (2015); and Billow (2017) that measure teacher content knowledge in phonemic awareness using the PhaKS, but an increased number of studies have been well documented using other content knowledge assessments in literacy (Moats & Foorman, 2003; Zibulsky, & Callahan, 2009; Invernizzi, Landrum, Teichman, & Townsend, 2010; Cunningham; Cash, Cabell, Hamre, DeCoster, & Pianta, 2015).

Data Analysis Plan

The Statistical Package for the Social Sciences (SPSS) Version 25 was used to conduct all statistical analyses (IBM, 2017). Descriptive statistics were generated to describe teacher-level data. Demographic data is reported for participants that includes, gender, age, race, education level, years of teaching experience, preschool program setting, and their level of training in phonemic awareness. As discussed in Chapter 1, the nature of this study is exploratory; therefore, it was of value to run simple linear

regressions to determine if the significance of anyone single independent variable was found to have a significant predictive relationship. A multiple regression analysis was then applied to explain or predict the values of a dependent variable (interval) based on the values of one or more independent variables (Johnson & Christensen, 2014).

The first research question presented in this study involved four sets of hypotheses in which a multiple linear regression analysis was conducted to examine the first research question, in addition to subsequent simple linear regression analysis of each predictor variable. Multiple linear regression allowed for a sophisticated analysis that considered the interrelationships between the three independent variables and the dependent variable as stated in the first research question. Multiple linear regression using the standard multiple regression method was conducted to analyze the significance of the relationship between the independent variables preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment. The standard "enter" method was the only option selected for the predictor input used in the regression model. The default settings were applied to the regression input. To examine the second research question, a one-way ANOVA was conducted to test for significance in the dependent variable, emergent literacy assessment when compared with the independent variable (preschool program group). Before conducting the analysis, a review of the teacher survey questionnaire responses for completeness using a process of proofreading the data to spot errors and correct them referred to as data cleaning, which was performed using SPSS (Frankfort-Nachmias, Nachmias, & DeWaard, 2015). Cleaning the data involved consistency checks and

treatment of missing responses. The researcher conducted a descriptive statistics analysis in SPSS to check the frequencies of participant data. This analysis confirmed the actual number of the study sample aligned with their responses from the teacher survey questionnaire. This data was exported from Survey Monkey in the form of an Excel file, that was uploaded and saved as a data file in SPSS. The consistency checks served to identify data, which could have been out of range or logically inconsistent. The research questions are listed below:

Research Question 1 (RQ1): Is there a relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment? The data from each teacher survey questionnaire was collected using SurveyMonkey. The responses were exported from SurveyMonkey to an Excel file which provided the scores of each participant from each preschool program setting. Participants had a unique identifier that distinguished them by preschool program setting and individual survey response. The following hypotheses were associated with RQ1:

$H_0$1: There will be no significant relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment.

$H_1$1: There will be a significant relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment.

$H_0$2: There will be no significant relationship between preschool teachers' content knowledge in early literacy to emergent literacy assessment.

$H_1$2: There will be a significant relationship between preschool teachers' content knowledge in early literacy to emergent literacy assessment.

$H_0$3: There will be no significant relationship between preschool teachers' education level to emergent literacy assessment.

$H_1$3: There will be a significant relationship between preschool teachers' education level to emergent literacy assessment.

$H_0$4: There will be no significant relationship between preschool teachers' years of teaching experience to emergent literacy assessment.

$H_1$4: There will be a significant relationship between preschool teachers' and years of teaching experience to emergent literacy assessment.

Research Question 2 (RQ2): Are there differences in the emergent literacy assessment by preschool program setting, specifically, Head Start, childcare, and pre-k program settings? These differences in emergent literacy scores by preschool program settings was examined using one-way ANOVA. Assumptions of equal variances among each preschool program setting was checked by performing the Levene's test in the ANOVA. Students were also given a unique identifier that distinguished them by preschool program setting and school division. The following hypothesis was associated with RQ2.

$H_0$1: There will be no significant differences among emergent literacy assessment by preschool program setting.

$H_1$1: There will be significant differences among emergent literacy assessment by preschool program setting.

Threats to Validity

A threat to external validity in this study was based on the sampling strategy. Convenience sampling was used to recruit participants for this study. The researcher selected this sampling strategy due to limitations in resources, in which the researcher would have easy accessibility to participants who were located within close distances of the researcher. Using convenience sampling assumes that members from the targeted population will be similar; that is, there would be no differences in the research results if they had been obtained from a randomized sample of the target population (Etikan et al., 2015). Based on the nature of this study's research design, nonprobability sampling was the most applicable. By using this approach, the process of generalization and whether the results obtained from the study sample could be extended to the targeted population (Hanasono, 2018). Given that convenience sampling is not conducted from random selection, the researcher chose to collect data from a sample that was a subset of the targeted population.

A specific threat to internal validity in this study centered around a lack of calibration of the teacher survey instrument since being published by Cheesman et al. (2009). The teacher survey has not been used extensively in research studies aimed at understanding preschool teacher content knowledge in emergent literacy, which is a considerable gap in the literature and premise of the research problem that was examined. Implications from similar studies using other instruments were used to examine teacher

content knowledge in literacy instruction across different grades is discussed in Chapter 5.

Ethical Considerations

Informed consent forms were distributed to all study participants describing the purpose of the study, benefits of participating, procedures for participation in the study, such as confidentiality, and how to contact the dissertation committee chair and me if they had questions regarding the study as required by Walden's Institutional Review Board (IRB). There was also an explanation to participants, that by completing and submitting the online survey, that this constituted as their consent, however, by submitting an incomplete survey, this indicated that a participant did not complete all items in the survey and would no longer be considered as a participant. Participants were informed that their names and preschool program name would not be disclosed in the final documentation of the study. While, the names of partnering organizations was known by me, the name of the preschool program would not be identifiable in the final publication of the study.

Additionally, participants were also informed that by sending an email with the words "I consent" in the subject line, that it would serve as giving consent to participate in the study. Participants were also given the option of requesting a paper copy of the survey versus completing it online, however, there were no requests for paper copies. There are no names of teachers, students or programs disclosed. All teacher survey questionnaire data that was collected remained confidential with the researcher. The researcher did not share any teacher survey results with the partnering organization.

Student assessment scores were held confidential between the researcher and the respective designee who represented each school division. My dissertation committee chair and I were the only individuals with access to both sets of data. All electronic data files and respective consent forms collected for this study were stored on the researcher's desktop computer. All paper copies of signed letters of cooperation are stored at the researcher's home residence in a locked file cabinet and protected as required by Walden's Institutional Review Board (IRB). According to Walden's IRB, data is scheduled to be destroyed after five years. A summary of the findings from the study will be provided to each preschool program administrator and school district designee of their respective preschool program. Preschool administrators or school district designee had no knowledge of which preschool teachers consented to complete the survey, therefore, the researcher requested that administrators distribute a summary of findings to all preschool teachers of their respective program.

Summary

The nature of this study, research design, methodology, and data analysis plan was discussed in this chapter. This chapter discussed the sampling strategy, recruitment strategy, and instrumentation used to measure the key variables. Threats to internal and external validity and ethical considerations are also discussed. The findings of the study are also presented in Chapter 4.

Chapter 4: Results

Introduction

The purpose of this study examined the relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience, to emergent literacy assessment of children upon their entry to kindergarten. This study also examined the differences in students' emergent literacy assessment scores across different preschool program settings: Head Start, and pre-kindergarten. There are two research questions: (a) What is the relationship between preschool teachers' content knowledge in early literacy, years of teaching experience, and education level to emergent literacy assessment of young children before they enter kindergarten; and (b) Are there differences in the emergent literacy assessment by preschool program setting? A nonexperimental, exploratory research design was selected to address these research questions.

Multiple linear regression and subsequent simple linear regression analyses were conducted to answer the first research question to determine the significance of any linear relationship between the three predictor variables: preschool teachers' content knowledge in early literacy, education level, and years of teaching experience and the dependent variable, emergent literacy assessment. One-way ANOVA was conducted to answer the second research question to test for any significant differences in the dependent variable, emergent literacy assessment when compared with the independent variable (preschool program setting). The research questions and corresponding hypotheses are presented as follows:

RQ1: Is there a relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment?

$H_0$1: There will be no significant relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment.

$H_1$1: There will be a significant relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment.

$H_0$2: There will be no significant relationship between preschool teachers' content knowledge in early literacy to emergent literacy assessment.

$H_1$2: There will be a significant relationship between preschool teachers' content knowledge in early literacy to emergent literacy assessment.

$H_0$3: There will be no significant relationship between preschool teachers' education level to emergent literacy assessment.

$H_1$3: There will be a significant relationship between preschool teachers' education level to emergent literacy assessment.

$H_0$4: There will be no significant relationship between preschool teachers' years of teaching experience to emergent literacy assessment.

$H_1$4: There will be a significant relationship between preschool teachers' and years of teaching experience to emergent literacy assessment.

RQ2: Are there differences in the emergent literacy assessment by preschool program setting?

$H_{01}1$: There will be no significant differences among emergent literacy assessment by preschool program setting.

H_11: There will be significant differences among emergent literacy assessment by preschool program setting.

In this chapter, the findings of the study are reported. An explanation of the data collection and statistical analysis is discussed. Demographic data is reported on the study participants. The analyses include descriptive statistics, multiple and linear regression, and one-way ANOVA. The statistical assumptions for multiple and linear regression and one-way ANOVA are also presented. In conclusion, the findings and previously stated research questions are discussed.

Data Collection

The time frame for recruiting participants began upon receipt of the university's IRB approval dated February 28, 2019. The IRB approval number is 02-19-18-0594780. Recruitment took place between March 1, 2019 through June 15, 2019. The time frame for collecting survey data from preschool teachers was between March 1, 2019 through September 15, 2019, to allow access to teachers who were on summer school break. A total of 119 participants received the teacher survey questionnaire, although only 79% (n=98) participants responded. Of the 74 Head Start teachers recruited, only 68 responded and completed the teacher survey questionnaire, and had student level data, PALS-K; of the 6 childcare teachers recruited, only 3 responded and completed the teacher survey

questionnaire, and only 1 had student level data , PALS-K, and of the 39 pre-k teachers recruited, only 30 responded and completed the teacher survey questionnaire; while only 20 of the pre-k teachers had student level data, PALS-K. However, the final sample size was (*n*=88) indicating the number of study participants who had completed the teacher survey questionnaire, and who had a corresponding student score of the emergent literacy assessment. For example, if a preschool teacher completed the survey, and the researcher did not receive the emergent literacy assessment archival data, those teachers were not included in the final sample size. However, their demographic data was included in reporting the descriptive statistics.

Teacher Survey Data Collection

Preschool teachers currently employed at Head Start, childcare, and pre-k programs located in Virginia completed an online teacher survey questionnaire, titled, The Survey of Teacher Phonemic Awareness Knowledge and Skill (PhaKS). All teachers from each preschool program setting were sent an e-mail invitation once IRB approval was received granting permission to recruit study participants. Email addresses used to invite teachers came directly from each participating preschool program, with the exception of one school division, in which email addresses were listed on the school division's website giving public access to me. Teachers were informed that any data collected from them would remain confidential and that the name of their program would not be disclosed in the final publication of the study. Teachers were also given the option of completing the survey questionnaire via hard copy upon request to the researcher. All teachers who participated completed the online teacher survey questionnaire, therefore,

no paper copies were collected. The data collected from the online teacher survey questionnaire was exported to an Excel file from SurveyMonkey. Once data was extracted from SurveyMonkey, the researcher created an SPSS data set. The data was stored on the researcher's personal computer located at her home residence. The online teacher survey questionnaire remained open on SurveyMonkey throughout the 2018-2019 school year to accommodate school schedules across preschool programs.

Student Archival Data

Archival data from five school divisions in Virginia was received in the form of students' emergent literacy screening assessment scores resulting from the administration of the PALS-K during the 2018-2019 school year. Student-level data were aggregated according to the preschool program setting instead of by the school division or individual cohort group. Although, the PALS-K is administered twice a year, only fall assessment scores were received for this study.

To ensure anonymity of student names, the researcher requested that each preschool program administrator send a list of student names to the participating school division. Once the list was received by the designee for each school division, the researcher provided a sample form with instructions with the format to assign a unique identifier to each student, therefore removing the student's name. Upon receiving the student data from the school division designee, the researcher transferred the scores to the SPSS data file, however, an individual spreadsheet from each school division has been saved and stored on the researcher's personal computer located at her home residence.

Assumptions of Linear Regression

The assumptions of both linear regression and multiple regression was assessed before conducting the overall analysis. All assumptions of the linear regression, normality, linearity, and homoscedasticity also apply to multiple regression with the exception of one addition, multicollinearity.

Normality. Normality and linearity were assessed using a Q-Q scatterplot (DeCarlo, 1997). The results of normality and linearity are displayed as Figure 3. The values did not strongly deviate from the theoretical quartiles, and the assumptions were met.

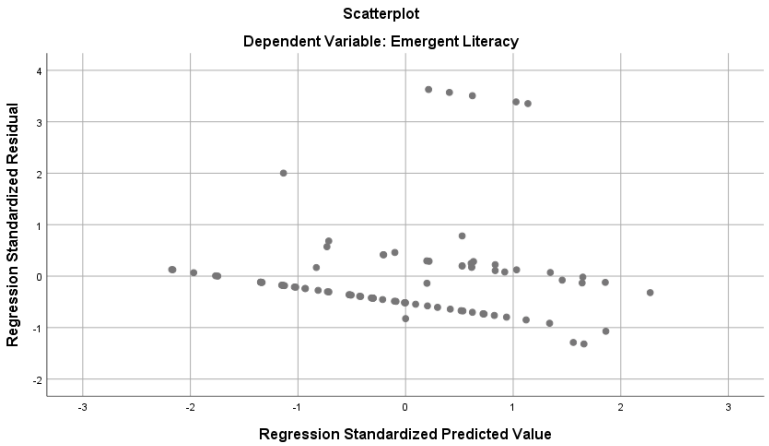

Figure 3. Q-Q scatterplot for normality of residuals of the regression model

Homoscedasticity. The assumption of homoscedasticity was assessed by examining the residual and predicted values (Field, 2013; Osborne & Walters, 2002). In scatterplot results, the points shown to be randomly distributed with no curvature, therefore, the assumption was met. Figure 4 illustrates a scatterplot of predicted values and model residuals.

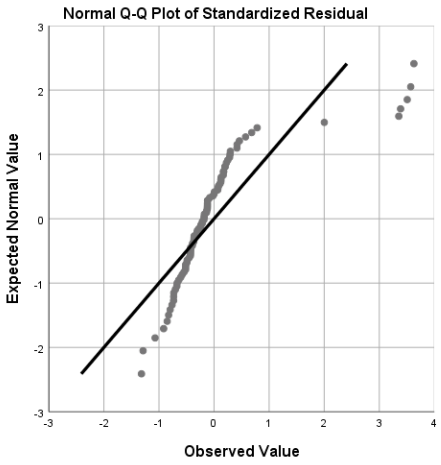

Figure 4. Scatterplot of Residuals Testing Homoscedasticity

Multicollinearity. The presence of multicollinearity is between the predictor variables, which is calculated in SPSS as Variance Inflation Factors (VIFs). High VIFs indicated increased effects of multicollinearity in the model. VIFs greater than 5 are a cause of concern, whereas, VIFs of 10 should be considered in the maximum upper limit (Menard, 2009). All predictors in this regression model have VIFs less than 10. Table 1 displays the VIF for each predictor model in the model.

Table 1

Variance Inflation Factors for Years of Teaching, Content Knowledge, and Education Level

Variable	VIF
Years of Teaching	1.02
Content Knowledge	1.23
Education Level	1.25

Assumptions of a One-Way ANOVA

The assumptions of the ANOVA were assessed before the analysis was conducted. The Shapiro-Wilk test was conducted to determine if the dependent variable

was normally distributed. Results from the Shapiro-Wilk test was found to be significant, W=0.45, p<.001. Based on these results, the assumption of normality was violated. While the one-way ANOVA is considered a robust test against the normality assumption, which means it can tolerate violations of the normality assumption (Lund & Lund, Laerd Statistics, n.d.), the sample size between the groups being compared were not distributed normally. Based on the results of the Shapiro-Wilk test of an alpha value of .05, W= 0.45, p<.001, the results suggest that the residuals of the model are unlikely to have been produced by a normal distribution (Howell, 2013). In this study, the sample size affected the normal distribution of the dependent variable.

Another test used to assess assumptions was the homogeneity of variance referred to the Levene's test, to examine similar variances between groups of the independent variables. Results of the Levene's test showed that the variances was not significant, F(1, 85)= 1.99, p= .162. These results indicated that the assumption was met, in that the residuals of the model have similar variances.

Descriptive Statistics for Participants

Frequencies and percentages are calculated for age range, gender, race, years of teaching experience, and education level. The most frequent age range for participants was 51-60 (n = 35, 36%). Female was the only observed category for gender (n = 98, 100%), and White (n = 56, 57%) was the most frequently observed category of race. The most frequently observed categories of years of teaching were 0-3 and 9-15, each with an observed frequency of 23 (23%). The education level most frequently held was a

Bachelor of Science degree (*n* = 21, 21%). Demographic data of the study participants are displayed in Table 2.

Table 2

Frequency of Participants' Demographics

Variable	*n*	*%*	Cumulative *%*
Age Range			
20-30	19	19.39	19.39
31-40	23	23.47	42.86
41-50	14	14.29	57.15
51-60	35	35.71	92.86
61 or more	7	7.14	100
Missing	0	0	100
Gender			
Female	98	100	100
Missing	0	0	100
Race			
White/Caucasian	56	57.14	57.14
Asian/Pacific Islander	2	2.04	59.18
Black/African American	39	39.80	98.98
Hispanic	1	1.02	100
Missing	0	100	100
Years of Teaching			
0-3	23	23.47	23.47
4-8	20	20.41	43.88
9-15	23	23.47	67.35
16-20	12	12.24	79.59
21 or more	20	20.41	100
Missing	0	100	100
Education Level			
High School	18	18.37	18.37
CDA	3	3.06	21.43
AA	12	12.24	33.67
BS	21	21.43	55.10
BA	18	18.37	73.47
M.Ed.	19	19.39	92.86
MA	6	6.12	98.98
MS	1	1.02	100
Missing	0	0	100

Teachers who participated were from one of three program settings: Head Start, childcare, or pre-k. Of the 88 teachers with teacher-level data and student-level data, the majority (*n* = 68, 69%) were from Head Start, (*n*=20) and pre-k. Due to the low number

of childcare participants, they were not included in any further analysis. However, Table 2 includes the frequencies of participation from all three program settings, however, the childcare participants were not included in any further analysis of each research question, although they were included in the overall demographic data. Additionally, as discussed as the nature of this study, a representative sample of the study population would not be proportional based on the non-probability sampling that was used. The frequencies and percentages are displayed in Table 3.

Table 3

Frequencies and Percentages that Describe Preschool Teachers by Preschool Program

Variable	*n*	*%*	Cumulative *%*
Program Setting			
Head Start	68	69.39	69.39
Pre-k	27	27.55	96.94
Childcare	3	3.06	100

Descriptive statistics were generated according to other questions in the survey: specialization, curriculum, and training in phonemic awareness. The most observed category of specialization was Early Childhood Education (*n* = 52, 53%). Creative Curriculum (*n* = 70, 71%) was the most observed category of curriculum, and the most observed category of training in phonemic awareness (PA) was both training in PA and phonics *(n* = 45, 46%). The variables listed in the table are from the PhaKS. The frequencies and percentages that describe the educational background are displayed in Table 4.

Table 4

Frequencies and Percentages that Describe Preschool Teachers' Specialization, Curriculum and Training in Phonemic Awareness

Variable	*n*	*%*	Cumulative *%*
Specialization			
CDA	1	1.02	1.02
Early Childhood Education	52	53.06	54.08
Early Childhood Special Education	1	1.02	55.10
Education	10	10.20	65.30
Elementary Education	12	12.24	77.54
Elementary Education & Early Childhood and Special Education	1	1.24	78.78
English	1	1.24	80.02
Fine Arts	1	1.24	81.26
Foreign Language	1	1.24	82.50
High School Diploma	1	1.24	83.74
Non-Education Field	8	8.16	91.90
Psychology	3	3.06	94.96
Sociology	2	2.04	97.00
Special Education	2	2.04	99.04
Missing	2	2.04	101.08
Curriculum			
Creative Curriculum	70	71.43	71.43
Foundation Blocks	1	1.02	72.45
High/Scope	3	3.06	75.51
Pinnacle	1	1.02	76.53
Tools of the Mind	17	17.35	93.88
Other	6	6.12	100
Missing	0	0	100
Training in Phonemic Awareness			
No specific training	43	43.88	43.88
Yes, in PA and phonics	45	45.92	89.80
Yes, only PA concepts	3	3.06	92.86
Yes, only phonics concepts	7	7.14	100
Missing	0	0	100

While the most observed category of training in phonemic awareness (PA) was training in PA and phonics, was respectively, 46%, however, the most observed category of training in both was found with public school pre-k teachers (*n*=20, 69%) while PA training for Head Start teachers (*n*=28, 41%). These findings suggests that pre-k teachers who have received training in teaching the concepts of phonemic awareness (PA) and phonics achieved higher mean scores of correct responses to their counterparts in Head

Start. This finding also suggests the significance that education level has to student's emergent literacy assessment.

Descriptive Statistics for the Teacher Survey

The PhaKS was designed to assess the level of knowledge participants possessed that were specific to PA. Public school pre-k teachers answered more questions correctly compared to Head Start and even the small number of childcare teachers, pre-k teachers (n=19), had an average M=7.48 (SD = 2.78) whereas Head Start teachers (n=68) had an average M=5.69 (SD = 2.92). Worth noting was the responses received from Question #9, which asked respondents to define "phonemic awareness instruction" (n=98, 90%) answered correctly, in which those respondents viewed "*phonemic awareness instruction to benefit most children in kindergarten and first grade"* (Cheesman et al., 2009). This question was a main thrust of this study relative to a teachers' understanding of the foundation of early literacy instruction.

Items scored for PhaKS Knowledge as a subscale score had an average of 3.90 (SD = 2.02, Max = 9.00). The observations for PhaKS Skill as a subscale score had an average of 2.26 (SD = 1.49, Max = 6.00). The items scored for PhaKS Overall content knowledge had an average of 6.15 (SD = 2.98, Max = 13.00). The descriptive statistics for the interval and ratio variables are displayed in Table 5.

Table 5

Interval and Ratio Variables

Variable	*M*	*SD*	*n*	Min	Max	Skewness	Kurtosis
Emergent Literacy Assessment Score	53.16	11.37	88	44.01	94.05	2.66	6.87

PhAKS Knowledge	3.90	2.02	98	0.00	9.00	0.20	-0.34
PhAKS Overall	6.15	2.98	98	0.00	13.00	0.00	-0.55
PhAKS Skill	2.26	1.49	98	0.00	6.00	0.29	-0.79

For the pre-k group, the most observed category of education level was a Master of Education, (n = 12, 44%), and for the Head Start group, it was High School and Bachelor of Science each with a frequency of 16 (24%). The frequencies are displayed in Table 6.

Table 6

Frequencies and Percentages that Describe Preschool Teacher Education Level

Variable	Pre-K	Head Start
Program setting		
Pre-K	30 (100%)	0 (0%)
Head Start	0 (0%)	68 (100%)
Missing	0 (0%)	0 (0%)
Education Level		
High School	0 (0%)	16 (24%)
CDA	0 (0%)	3 (4%)
AA	0 (0%)	11 (16%)
BS	5 (19%)	16 (24%)
BA	5 (19%)	13 (19%)
M.Ed.	12 (44%)	7 (10%)
MA	4 (15%)	2 (3%)
MS	1 (4%)	0 (0%)
Missing	0 (0%)	0 (0%)

Mean scores were calculated for the PhaKS Overall Knowledge scores for each group. For the pre-k teachers, the average score was 7.48 (SD = 2.78, SE_M = 0.53, Min = 2, Max = 13). For Head Start teachers, the average score was 5.69 (SD = 2.92, SE_M =

0.35, Min = 0, Max = 12). Descriptive statistics for preschool teachers' PhaKS Overall scores are displayed in Table 7.

Table 7

Descriptive Statistics for Preschool Teachers' PhaKS Overall Scores by Program Setting

Variable	*M*	*SD*	*n*	SE_M	Min	Max	Skewness	Kurtosis
PhaKS Overall								
Pre-K	7.48	2.78	27	0.53	2.00	13.00	-0.03	-0.36
Head Start	5.69	2.92	68	0.35	0.00	12.00	0.02	-0.63

Detailed Analysis and Hypothesis Testing: Research Question 1 Hypothesis 1

RQ1: Is there a relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment?

$H_0$1: There will be no significant relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment.

$H_1$1: There will be a significant relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment.

To address research question one, multiple linear regression was conducted. The standard "enter" method for predictor input was used in the regression model. The default settings were applied to the regression input. Due to the categorical nature of the demographic predictor variables, each independent variable was dummy coded prior to entry into the regression model. Years of teaching experience was dummy coded with "0-

3 years of experience" as the reference group. Education level was dummy coded with "high school" as the reference category. In addition, the Bachelors and Masters categories were collapsed into one variable each. A total of 88 teachers had data for the dependent variable, emergent literacy assessment. Therefore, these participants were included in the regression analyses. Multiple linear regression was conducted using standard multiple regression. The standard "enter" method for predictor input was used. The default settings were applied to the regression model.

Multiple linear regression was conducted using standard multiple regression. The standard "enter" method for predictor input was used. The default settings were applied to the regression model. By using standard multiple regression, all three predictor variables: a) preschool teachers' content knowledge, b) education level, and, c) years of teaching experience were entered at the same time, to examine the relationship to student's emergent literacy assessment. Of the three predictor variables, the result was one model used to determine which predictor contributed significantly to predicting emergent literacy assessment. Multiple regression allows for a relationship to be modelled between multiple independent variables and a single dependent variable where the independent variables are being used to predict the dependent variable.

To determine if there was a relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment, a multiple linear regression analysis was found not to be significant, $F(3, 84) = 2.59$, $p = .060$ with an R^2 of .084. Therefore, the combination of the linear regression model with all three predictors did not contribute to the regression

model. The results of the multiple linear regression analysis revealed that preschool teachers' content knowledge in early literacy, education level and years of teaching experience were not statistically significant predictors to the model ($p > .05$). Controlling for education level and years of teaching experience, the regression coefficient [$B = .914$, 95% C.I. [.103,1.72] $p < .05$] associated with preschool teachers' content knowledge in early literacy suggested that for every one unit increase in teacher content knowledge, the value of the dependent variable, emergent literacy assessment increased. The confidence interval associated with the regression analysis does not contain 0, which means the null hypothesis was retained, indicating no predictive relationship could explain emergent literacy assessment. The results of this analysis are displayed in Table 8.

Table 8

Multiple Linear Regression Results of Content Knowledge (PhaKS) in Early Literacy, Education Level, Years of Teaching to Emergent Literacy Assessment

Variable	*B*	*SE*	CI	β	*T*	*p*
(Intercept)	46.81	3.37	[40.10,53.52]		13.89	.000
Years of teaching experience	-.670	.814	[-2.28,.949]	-.087	-.823	.413
Education Level	1.01	.710	[-.401,2.42]	.165	1.42	.158
PhaKS Overall	.687	0.45	[-.219,1.59]	.176	1.58	.135

Details of the Linear Regression Analysis: Research Question 1 Hypothesis 2

$H_0$2: There will be no significant relationship between preschool teachers' content knowledge in early literacy to emergent literacy assessment.

$H_1$2: There will be a significant relationship between preschool teachers' content knowledge in early literacy to emergent literacy assessment.

To further investigate the first research question, simple linear regression analyses was conducted to test the hypothesis of each single predictor variable: preschool teachers' content knowledge, education level and years of teaching and the dependent variable (emergent literacy assessment). Each predictive variable was tested for what could be explained for by the regression model. The results of each linear regression and the associated hypothesis are reported. The standard "enter" method for predictor input was used, and the default settings were applied to the regression model.

A simple linear regression was carried out to test if preschool teachers' content knowledge significantly predicted emergent literacy assessment. The predictive variable was found to be statistically significant, [*B*= .914, 95% C.I. [.103,1.72], p=. 028], indicating that for everyone unit increase in content knowledge, suggesting the value of the dependent variable (emergent literacy assessment), PALS-K scores increased. While the results of the regression analysis indicated that the model explained 6% of the variance, that the model was significant, $F(1,86) = 5.02$, $p = .028$, $R^2 = 0.06$, suggesting a slight significance could explain a predictive relationship between student's emergent literacy assessment (PALS-K) and preschool teachers' content knowledge in early literacy (PhaKS Overall). While PhaKS Overall content knowledge score had a predictive

relationship to emergent literacy assessment scores, $B = 0.914$, $t(86) = 2.24$, $p = .028$, the null hypothesis is rejected, as PhaKS Overall scores suggests only a slightly predictive relationship to student emergent literacy scores. The results of this analysis is displayed in Table 9.

Table 9

Linear Regression Results of Preschool Teachers' Content Knowledge (PhaKS) to Emergent Literacy Assessment (PALS-K)

Variable	*B*	*SE*	CI	β	*t*	*p*
(Intercept)	47.65	2.73	[42.22, 53.08]	0.00	17.44	< .001
PhaKS Overall	0.91	0.41	[0.103, 1.72]	.235	2.24	.028

Details of the Linear Regression Analysis: Research Question 1 Hypothesis 3

$H_0$3: There will be no significant relationship between preschool teachers' education level to emergent literacy assessment.

$H_1$3: There will be a significant relationship between preschool teachers' education level to emergent literacy assessment.

A linear regression analysis was performed to test the hypothesis if education level significantly predicted student emergent literacy assessment scores (PALS-K). As cited in the version of the survey questionnaire (PhaKS) used for this study, education level was defined across six levels. In order to conduct the linear regression, education level was dummy coded. The standard "enter" method for predictor input was used, and the default settings were applied to the regression model. The results of this analysis was not significant, $F(1,86) = 4.95$, $p = .029$, $R^2 = .055$, indicating education level could not

account for any significance of variation in emergent literacy assessment (PALS-K); therefore, the null hypothesis is retained. The results are displayed in Table 10.

Table 10

Linear Regression Results with Education Level to Emergent Literacy Assessment Score

Variable	*B*	*SE*	CI	B	*t*	*p*
(Intercept)	48.76	2.62	[43.56,53.97]	0.00	22.86	.000
Education Level	1.42	.641	[.153,2.701]	.234	2.27	.029

Details of the Linear Regression Analysis: Research Question 1 Hypothesis 4

$H_0$4: There will be no significant relationship between preschool teachers' years of teaching experience to emergent literacy assessment.

$H_1$4: There will be a significant relationship between preschool teachers' and years of teaching experience to emergent literacy assessment.

A linear regression analysis was performed to test if years of teaching experience significantly predicted student's emergent literacy assessment scores (PALS-K). The standard "enter" method for predictor input was used, and the default settings were applied to the regression model. The results of this analysis was not significant, $F(1,86) = .156$, $p = .694$, $R^2 = 0.002$, indicating years of teaching experience did not explain a significant proportion of variation in emergent literacy assessment scores; therefore, the null hypothesis is retained. The results of this analysis is displayed in Table 11.

Table 11

Linear Regression Results with Years of Teaching Experience to Emergent Literacy Assessment

Variable	*B*	*SE*	CI	B	*t*	*p*
(Intercept)	51.55	2.53	[46.53,56.57]	0.00	20.42	<.001
Years of teaching experience	-.327	.829	[-1.97,1.32]	-.043	-.395	.694

Emergent Literacy Assessment: Research Question 2

Research Question 2: Are there differences in the emergent literacy assessment by preschool program setting?

$H_{01}1$: There will be no significant differences among emergent literacy assessment by preschool program setting.

$H_1 1$: There will be significant differences among emergent literacy assessment by preschool program setting.

Archival data in the form of student emergent literacy assessment PALS-K scores was provided by each school division; however, not all student data was made available to the researcher during the data collection period.

Emergent literacy assessment scores (PALS-K) had an average of 53.16 (*SD* = 11.37, Min = 44.01, Max = 94.05. The average PALS-K among the Head Start group (*n*=392) was 59.22, and among the public school pre-k group (*n*=973) was 60.00.

The ANOVA results were significant, $F(1, 85) = 4.32$, $p = .041$, demonstrating significant differences in the emergent literacy assessment score among the different program settings. The ANOVA results are displayed in Table 12. The eta squared was

0.05 indicating a small effect size; therefore, the null hypothesis was rejected. The means and standard deviations for the distribution of scores are shown in Table 13.

Table 12

Analysis of Variance (ANOVA) for Emergent Literacy Assessment Score by Program Setting

Term	*SS*	*df*	*F*	*p*	η_p^2
Program setting	527.24	1	4.32	.041	0.05
Residuals	10378.27	85			

Table 13

Distribution of Emergent Literacy Assessment Scores by Preschool Program Setting

Combination	*M*	*SD*	*n*
Pre-K	57.60	1.48	20
Head Start	51.65	12.42	68

Mann-Whitney *U* Test

While the one-way ANOVA is considered a robust test against the normality assumption, which means it can tolerate violations of the normality assumption, the sample size between the groups being compared in this study were not distributed normally (Laerd Statistics, n.d.). Based on the results of the Shapiro-Wilk test of an alpha value of .05, W= 0.45, $p<.001$, the results suggest that the residuals of the model are unlikely to have been produced by a normal distribution (Howell, 2013). A Mann-Whitney *U* Test was conducted on ranked scores because the distributions of the variable for the two groups in this study were not normally distributed. The Mann-Whitney U Test is a non-parametric test which is appropriate for ordinal data (Black, 2011). There were

20 preschool teachers in the public school pre-k group and 68 preschool teachers in the Head Start group. A majority of the childcare programs who participated indicated they did not maintain records of students who transitioned to kindergarten every year, therefore PALS-K data for students from childcare programs was not available. Only one participating childcare program provided student data; therefore, those scores were not included in the analysis.

The results of the Mann-Whitney *U* test was significant, $U = 135.00$, $z = -5.40$, $p < .000$. The PALS-K mean score for the pre-k group was 68.26, and 37.22 for the Head Start group. This finding implies that the distribution of PALS-K scores for the pre-k group was significantly different from that of the PALS-K scores for the Head Start group. Additionally, this finding suggests that pre-k teachers had achieved better PhaKS scores than their Head Start counterparts, therefore, affecting the emergent literacy assessment of young children who transitioned from the pre-k program setting. The pre-k group had a significantly larger median (*Mdn*= 57.09) than that of the Head Start group (*Mdn* = 47.42). The results from the Mann-Whitney *U* test are shown in Table 14.

Table 14

Mann-Whitney Test for Emergent Literacy Assessment Score by Program Setting

	Mean Rank				
Variable	Pre-K	Head Start	*U*	*z*	*p*
Emergent Literacy Assessment Score	68.26	37.22	135.00	-5.40	< .001

Summary

This study examined the relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience, to

emergent literacy assessment of children upon their entry to kindergarten using a multiple linear regression analysis to examine the first research question (RQ1). To examine the second research question (RQ2), a one-way ANOVA was conducted to compare the group mean differences in emergent literacy assessment, PALS-K between two preschool program settings: Head Start and pre-kindergarten. Based on the small sample of teachers recruited as participants from the childcare programs as participants, the ANOVA analysis only included the PALS-K scores from two groups, Head Start and pre-k. Although PALS-K scores were received from the childcare preschool group, there was not enough student data to be considered; therefore, the student data that was received was excluded from the analysis.

In analyzing the multiple predictor variables to test the relationship to emergent literacy assessment, PALS-K, the multiple linear regression analysis overall model findings were not significant, indicating years of teaching experience, education level, and preschool teachers' content knowledge in early literacy could not explain any significant variance in emergent literacy assessment, PALS-K. However, the results found in conducting simple linear regressions for each predictor variable to students' emergent literacy assessment scores, PALS-K did vary. Preschool teachers' education level was not significant, indicating education level could not explain any significant variance in students' emergent literacy assessment, PALS-K; and years of teaching experience was not significant, indicating years of teaching experience could not explain the significant variance in emergent literacy assessment scores, PALS-K. However, the results did find a slight significance to suggest a predictive relationship between

preschool teachers' content knowledge, PhaKS in early literacy to a student's emergent literacy assessment, PALS-K. For every one-unit increase of teachers' PhaKS Overall content knowledge in early literacy, the value of student's emergent literacy assessment scores increased by 0.91 units.

A one-way ANOVA was conducted to examine the emergent literacy assessment, PALS-K between two of the preschool program settings. The study found significant differences in students' emergent literacy assessment scores, PALS-K among the Head Start and pre-k groups. Additionally, the results of the Mann-Whitney was found to be significant, suggesting that the distribution of PALS-K scores for the pre-k group were considerably different from the Head Start group.

In the final chapter, the interpretation of the results as it relates to the theoretical foundation and literature review is discussed. Additionally, the results are presented in ways that will confirm, disconfirm, or extend knowledge in educational psychology, as found in the literature review. To conclude, the limitations of the study along with recommendations for further research and practice are presented.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

For 2 decades, increasing evidence has shown preschool education's prolonged-term effects on the positive outcomes that preschool-age children experience, in particular, as it relates to preparing them for later school success. Further evidence led by education researchers suggests that preschool educators lack the content knowledge in early literacy The purpose of this quantitative study was to examine the relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment of children upon their entry to kindergarten. This study also examined the differences in students' emergent literacy assessment scores across 2 different preschool program settings: Head Start, and pre-kindergarten.

Multiple linear regression was performed to examine the relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment of children upon their entry to kindergarten. Additionally, subsequent simple linear regression analyses examined each independent variable: teachers' content knowledge in early literacy, education level, and years of teaching experience in relationship to the dependent variable: student's emergent literacy assessment. Based on the multiple regression analysis, the overall findings were not significant, indicating years of teaching experience, education level, and teacher content knowledge in early literacy, PhaKS could not explain the significant variance in the emergent literacy assessment, PALS-K. However, results found in the linear

regression analyses did vary and found that preschool teachers' content knowledge in early literacy had a slight significance to explain a predictive relationship to emergent literacy assessment, while the other variables did not.

One-way ANOVA was used to analyze emergent literacy assessment in comparing the group means of different preschool program settings. The results of an ANOVA found differences in students' emergent literacy assessment scores, PALS-K across the Head Start and pre-k program settings. The sample size for the third preschool program setting that was selected for this study, childcare was too small to for the analysis. There was a significant difference in students' emergent literacy assessment scores, PALS-K among the Head Start and pre-k groups.

In this chapter, I present an interpretation of the results situated within the context of the theoretical foundation and literature review for this study. The limitations are discussed about the overall execution of the study and generalizability. Recommendations for future research and practice are presented, along with implications. In conclusion, areas of potential positive social change as related to the findings of the study are discussed.

Interpretation of the Findings

The current study examined the relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment. The first research question examined the relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment. In the analysis of the

predictor variables to test the relationship of teachers' content knowledge in early literacy to student's emergent literacy assessment scores, PALS-K, the overall regression model findings were not significant, indicating years of teaching experience, education level, and overall content knowledge in early literacy, PhaKS did not explain a significant proportion of variation in the student's emergent literacy assessment score, PALS-K, $F(1,86) = 5.02$, $p = .028$, $R^2 = 0.06$. However, results found in the linear regression analyses that preschool teachers' content knowledge in early literacy had a slight significance to explain a predictive relationship to emergent literacy assessment, while the other variables did not. While this finding does not show a strong relationship, the results did indicate that with a one unit increase in teacher content knowledge in early literacy, there was an increase in a student's emergent literacy assessment, PALS-K by 0.91 units. Preschool teachers' education level was not significant, indicating education level could not explain the significant variance in students' emergent literacy assessment scores, PALS-K; and years of teaching experience was not significant, indicating years of teaching experience could not explain the significant variance in student's emergent literacy assessment, PALS-K.

The variables under investigation in this study, teacher content knowledge in early literacy, education level, and teaching experience, were examined using a theoretical foundation that integrated two developmental theories developed by Jean Piaget and Urie Bronfenbrenner. Bronfenbrenner's (1977) ecological systems theory has been well-documented in supporting a general framework for examining school readiness in different educational settings, specifically aimed at emergent literacy and math skills

(Bronfenbrenner & Morris, 1998; Hamre, Hatfield, Pianta, & Jamil, 2014; Moran & Senseny, 2016). Additionally, Piaget's (1952) theory is often associated with the theory of how children learn and construct knowledge. Although the findings demonstrate consistency with the theoretical foundation, they were found to partially support Piaget and Bronfenbrenner's theory, which is further explained in the next section.

Findings in Comparison to the Theoretical Foundation

Bronfenbrenner's ecological systems theory is founded on interrelated systems, often referred to as an individual's internal and external environments. Preschool teachers are an important aspect of a students' immediate environment, i.e., the classroom that influences learning and later school success. Bronfenbrenner's ecological systems provide a lens for appreciating various sources of influence and their interrelatedness. In a child's responsiveness to various environments, they learn to distinguish between the different expectations of their internal and external environments. In the mesosystem, for instance, teachers enhance children's education in reinforcing learning experiences in the classroom and at home. In past research, Burchinal et al. (2000) found preschool teachers with an advanced level of early childhood education and training produced greater outcomes for the gains preschool children made in early literacy skills than teachers with less education and training in early childhood, which was a focus of this study.

Moreover, a teacher's literacy practices that include opportunities for young children to see them engaged in literacy activities are more apt to engage in reading and view reading as valuable (Applegate & Applegate, 2004). Further research has shown that learning environments that are rich in literacy materials, opportunities for language

activities, and verbal interaction with teachers influence preschool-age children's early literacy and pre-academic skills (Baroody & Diamond, 2016). Consistent with Bronfenbrenner's theory, the findings suggest that early literacy skills are influenced by a child's environmental contexts.

Piaget's cognitive development theory helps to explain that it is a teachers' specific content knowledge that leads young children to construct their understanding of written information and sounds, phonemic awareness, especially at the preoperational stage. During their preschool years, this is the time young children engage in symbolic play, learn to manipulate symbols, and acquire foundational precursors to traditional early literacy skills, specifically, alphabet and print knowledge. And as the findings suggest, preschool teachers with specialized knowledge in early literacy have the skills to create rich literacy environments. This is important as children construct the meanings of written words in their own ways. This finding suggests a link between teachers' content knowledge specific to emergent literacy and the characteristics of Piaget's preoperational stage, more specifically, constructivism (Ensar, 2014). This view of Piaget's theory was based on how children relate to their environment to create their own knowledge. A constructivist view of early literacy instruction not only requires phonological awareness but of a teacher's ability to foster an environment for young to develop and inquire through activities that will help them to emerge (Ensar, 2014). As it relates to this study, emergent literacy is a concept that is shaped by Piaget's theory of how children construct their own knowledge.

The second research question examined if there were differences in emergent literacy assessment by preschool program setting. Due to the relatively small sample size obtained from childcare participants, insufficient student data was not received for this analysis. Therefore, the one-way ANOVA only included the analysis of the other two groups, Head Start and pre-k. The results indicated significant differences in students' emergent literacy assessment scores (PALS-K) among different preschool program settings. Additionally, the results from the Mann-Whitney *U* test was found to be significant, suggesting that the distribution of PALS-K scores for the public school pre-k group was significantly different from the Head Start group. This finding suggests that the approaches in early literacy instruction and teacher training assumed by each group does matter, which could explain the significance of variance in teacher content knowledge in early literacy between the Head Start and pre-k groups.

The findings of the ANOVA only reported differences between program settings, and therefore, suggest that preschool programs that have certain content expectations around early literacy, such as phonological awareness, are more effective in facilitating emergent literacy than others, as shown in teacher's PhaKS Overall scores. While the focus of this study did not examine how curricula were used to support early literacy instruction, the differences in teacher content knowledge across preschool program settings suggest that it is likely that each setting uses a different approach in early literacy instruction. For example, of the five school divisions that participated, four of the five pre-k programs and Head Start programs used Creative Curriculum. This curriculum is designed to show preschool teachers how to intentionally integrate literacy activities in

their classroom, i.e., alphabet recognition and phonemic awareness (Teaching Strategies, 2010), all of which are concepts included in the PhaKS.

Findings in Comparison to Peer-Reviewed Literature

Teacher Content Knowledge

Many studies to date have found that preschool teacher content knowledge in early literacy is beneficial for the gains young children make in developing early literacy skills before entering kindergarten such as, Barnett, 2004, Cunningham et al. 2009, and Duncan et al. 2007); however, fewer studies have been conducted on preschool teacher content knowledge in early literacy to examine the relationship to student achievement in emergent literacy, which was the focus of this study. Preschool teacher content knowledge in early literacy in this study was found to have a slight significance in predicting emergent literacy assessment of preschoolers as they entered kindergarten. In previous research, it has been revealed that there are different approaches in conceptualizing teacher knowledge and literacy skills (Ball, Thames, & Phelps, 2008; Cunningham et al., 2009; Giles & Tunks, 2015; Moats & Foorman, 2003).

Based on the teacher survey questionnaire, the PhaKS results of this study, preschool teachers from across each preschool program setting, have a limited to moderate understanding of early literacy. The maximum PhaKS score was 15. The observations for PhaKS Knowledge as a subscale score had an (M=3.90, SD = 2.02); and PhaKS Skill had a (M=2.26; SD = 1.49; and overall content knowledge, (M=6.15, SD = 2.98). However, overall content knowledge for pre-k teachers had an (M=7.48), Head Start (M=5.69), and childcare (M=4.6).

Early Literacy Instruction

Currently, there has been very little agreement among researchers and educators in the American education system for instruction for teaching young children to read (Giles & Tunks, 2015). There has been a growing concern from educators and policymakers to improve the process of literacy acquisition of preschool children, especially in their transition from instruction across the preschool and the early school years. Head Start and pre-k programs are expected to utilize an evidence-based core curriculum based on the philosophy of the whole-child, which promotes children's learning through classroom interactions versus content-specific curriculum. (Nguyen & Jenkins, 2018). As mentioned earlier, Creative Curriculum was found to be the most observed curriculum used to support literacy instruction, which is viewed by researchers as a curriculum with a constructivist approach to learning (Nguyen & Jenkins, 2018).

Previous research conducted by Gormley, Phillips, Adelstein, and Shaw (2010) reported that preschool-age children who transition from pre-k programs enter kindergarten with advanced levels of academic skills than children enrolled who transition from Head Start programs, which could imply how early literacy instruction is implemented in each preschool program setting. Additionally, when both program settings are compared across educational programming, teachers will often have different educational backgrounds, teaching experience, and credentialing requirements (Nguyen & Jenkins, 2018). The findings from this study were the first of its kind in examining preschool teacher content knowledge in early literacy to the emergent literacy assessment of preschool children before entering kindergarten. Furthermore, the findings supported

the notion that the more knowledgeable preschool teachers are in phonemic awareness, the greater the likelihood that preschool-age children will move into kindergarten with the early literacy skills they need.

Phonemic Awareness

Phonemic awareness has repeatedly shown as being strongly linked to later reading skills (Ukrainetz, Nuspl, Wilkerson, & Beddes, 2011). Moyle, Heilmann and Bermann (2013) found that the most prominent phonemic awareness skills are establishing rhyming and sound repetition. They further argued that these two skills are critical when working with preschool-age children with limited early literacy skills. The findings of this study indicated that the greater a preschool teacher's content knowledge in early literacy, with an emphasis on phonemic awareness, the greater the likelihood that young children will increase their emergent literacy skills. This finding suggests for preschool programs that emphasize phonemic awareness are more likely than other preschool programs to provide specialized literacy instruction that prepares young children to be successful readers before they enter kindergarten.

School Readiness Between Preschool and Kindergarten

Preschool education has provided for more than fifty years as early intervention (Duncan & Magnusson, 2013). However, most early childhood researchers are still unable to answer a basic question of what skills are most important for long-term success. Conversely, kindergarten over the past 2 decades has made a dramatic shift from less developmentally appropriate practices to more academic skill-building and test preparation, as cited in a report issued by Miller and Almon (2009). Therefore, the goals

of school readiness between preschool and kindergarten programs have revealed a misalignment that has shown poor ratings of reading and math competence of children transitioning to kindergarten (Abry, Latham, Bassok, LoCasale-Crouch, 2015).

As previously shown in Table 6, pre-k teachers with an advanced level of early childhood education had more knowledge in phonemic awareness (PA) than their Head Start counterparts, who did not have as high a level of education or knowledge in PA. This finding suggests that teacher knowledge in early literacy instruction prepares young children for later school success. This study is the first of its kind to examine preschool teacher content knowledge in early literacy across different preschool program settings, specifically as it related to the emergent literacy assessment of preschool children before entering kindergarten, which has been a major gap in the field of education research. Dating back from a decade ago, the gap in the literature reveals that there are very few instruments for measuring preschool teachers' knowledge in early literacy (Hindman & Wasik, 2011). Moreover, without research that measures what preschool teachers know in early literacy, they will struggle with implementing instruction that targets early literacy abilities that will prepare them for kindergarten. The findings of this study also suggest that pre-k teachers had more knowledge about phonemic instruction than Head Start and childcare preschool teachers and its importance to kindergarten readiness. This could further be explained by the differences in the education requirements for teacher qualifications across different preschool program settings.

Limitations

First, this study was limited in its exclusion of other preschool program arrangements that could have been more representative of the study population. This study only included preschool teachers who were employed at Head Start, childcare, and pre-k programs. Therefore, preschool teachers who provided family childcare, home-visiting, private preschool, and faith-based preschool were excluded from the study. Secondly, the study only examined one domain of kindergarten readiness, versus domains, such as math, social-emotional, and self-regulation or factors associated with family and home environments. The third limitation was this study relied upon self-reported data from preschool teachers. The participants' responses across each program setting could have been influenced by their lack of knowledge in phonemic awareness and early literacy concepts.

The sample size for teacher participants across each preschool program setting was the fourth limitation of this study. The participation rate of teachers from childcare programs was smaller when compared to the size of Head Start and pre-kindergarten teachers. While the sample size was achieved for the Head Start and pre-k groups, it was not achieved for the childcare group. Therefore, this decreased the generalizability of the results of the study as representative of the study population. The fifth limitation of the study was the analysis, specifically, as an exploratory study, the findings of both the regression model and ANOVA analysis were inferential rather than causal. The sample of the study was comparatively small to conclude about the larger population. Additionally, the ANOVA analysis conducted on emergent literacy assessment was an aggregated

summed score across participant groups, versus an analysis of summed scores of each preschool program cohort.

Study participants varied across each preschool program setting, which changed the nature of establishing individual preschool program cohorts; therefore, the analysis aggregated data by preschool program group instead of being aligned with individual preschool program cohorts. Student names from some of the childcare participants were not made available to the participating school division in order to provide the student-level data, PALS-K assessment; therefore, an analysis by individual preschool program cohort was not achievable.

Recommendations for Future Research and Practice

Future research that expands to other preschool program settings and their kindergarten counterparts is recommended. Future research could expand on sample size, student demographics, as well as other literacy skills related to academic readiness between preschool and kindergarten programs. One way this could be achieved is administering readiness assessments in preschool and examining individual skill acquisition rates once children enter kindergarten. It would be informative for kindergarten teachers to have a greater knowledge of the acquisition rate of different emergent literacy skills as a valid predictor of future reading proficiency.

Future research would be essential to learn more about how curricula are used to support early literacy instruction in preschool classrooms. This research could also explore the specific training preschool teachers receive in teaching concepts of phonemic awareness and phonics. Similarly, future research could focus on how preschool teachers

acquire knowledge in the teaching concepts of PA and phonics, which could be of value to improving early literacy instruction as it relates to the gains made by their students.

Recommendations for Practice

The effect of teacher content knowledge on early literacy outcomes for young children is confounded with the limitations of relevant studies. In examining the gaps in teacher content knowledge in early literacy, the findings from this study suggest inequities across education level, basic skills, and specialized training in phonemic awareness as it relates to early literacy instruction. The need for more specialized training could enhance a preschool teacher's ability to affect early literacy outcomes for young children. Cunningham and O'Donnell (2015) called for more intentionality of professional development models. These authors argued professional development can be best achieved when it is rigorous and continuing, involves peer learning experiences, focuses on targeted skills rather than basic, provides an occasion for teachers to practice new skills and knowledge, and use for self-reflection.

As the findings of this study have revealed, preschool teachers with an advanced understanding and knowledge in early literacy have the competency to apply this knowledge to their teaching practices. Therefore, affecting their student's early literacy development, then their counterparts with limited knowledge in early literacy. These findings are consistent with Piasta, Connor, Fishman, and Morrison (2009) found that preschool teachers with a lack of knowledge will not be able to promote early literacy in their teaching practices effectively. Consequently, these findings emphasize a necessity for an increase for in-service training and professional development that can support

preschool teachers with the foundational knowledge in emergent literacy in the classroom, which is consistent with the research conducted by Cunningham, Etter, Platas, Wheeler, and Campbell (2015).

Implications

The results from this study showed that public school pre-k teachers answered more questions correctly compared to Head Start and childcare preschool teachers, implying that they had received training in teaching the concepts of PA and phonics. The education level of pre-k teachers when compared to their Head Start and childcare counterparts, was at a higher level, implying a close association of their knowledge in phonemic awareness and phonics as it relates to early literacy instruction. The results from this study also suggest that preschool teacher requirements and credentials vary across different preschool program settings, which has implications for the quality and delivery of instruction. Although the results show that a preschool teacher's education and years teaching experiences does not significantly affect student performance, however, preschool teachers' content knowledge in early literacy was consistent with the results of this study.

As this study has revealed, a small number of studies have investigated the content knowledge in early literacy of preschool teachers, when compared to other subjects, which creates obstacles for educators to gain additional training to close the gaps in early literacy instruction (Cunningham & O'Donnell, 2015).

Positive Social Change

This results from this study promote positive social change in a way that can inform educators, parents, program directors, school administrators, and policymakers about the effect of early literacy instruction as it relates to school readiness and the transition between preschool and kindergarten. More specifically, this study contributes to positive social change in educational psychology from three perspectives. First, the results of this study can inform educators at the local and state level with a deeper understanding of the need to support professional development across all sectors in early childhood education; specifically, preschool teachers about high-quality early literacy instruction. Second, the results of this study can contribute to the improvement of preschool education by describing high-quality practices in early literacy instruction, specifically in phonemic awareness. Lastly, teacher educators can use the results to inform future enhancements of coursework of their teacher preparation programs to ensure future teachers understand the role that early literacy development plays in supporting developmental continuity of curriculum and instruction from birth to third grade, as well as through high school.

Conclusion

Currently, there is very little agreement between researchers and educators in the U. S. education system for instruction for teaching young children to read. As a result, fewer studies have investigated the preschool teachers' content knowledge in early literacy as it relates to emergent literacy assessment. Education researchers have called for the development of more measures of preschool teacher content knowledge in early

literacy instruction. For more than 2 decades, research focused primarily on reading problems and less attention to the gaps that exist due to the lack of teachers' knowledge of phonemic awareness that correlates to later reading proficiency in the early grades.

This study examined the relationship between preschool teachers' content knowledge in early literacy, education level, and years of teaching experience to emergent literacy assessment of children upon entering kindergarten; and to examine if there are differences in emergent literacy scores across preschool program settings. This was an exploratory study that focused on a research problem that had few or no previous empirical research to refer to or rely upon for predicting the results. Gaps in the research literature were reviewed and addressed by examining two research questions aimed at understanding emergent literacy assessment across different preschool program settings and the relationship between preschool teachers' content knowledge in early literacy, education level and years of teaching experience to emergent literacy assessment before children enter kindergarten.

Bronfenbrenner's theory partially supported how important teachers are to children's learning environment as it relates to emergent literacy. However, it is a teacher's specific content knowledge in early literacy, i.e., phonemic knowledge and awareness that matters in student achievement. Piaget's theory, especially as it relates to the preoperational stage, helped to explain further content knowledge teachers bring to assist children in constructing emergent literacy. Preschool teacher's phonemic knowledge and awareness may be important to emergent literacy because the preoperational stage is a time when children start to talk, engage in symbolic play, and

learn to manipulate symbols. The findings from this study suggest a link between teachers' content knowledge specific to emergent literacy and the overall characteristics of Piaget's preoperational stage.

The essence of this study was to increase awareness of the role that preschool education has in improving young children's emergent literacy, before entering kindergarten with an emphasis on preschool teachers' content knowledge in early literacy instruction. Preschool teachers' content knowledge in phonemic awareness frames the context for how young children acquire emergent literacy skills before they enter kindergarten. The key variations that exist in different preschool program settings were also at the heart of this study. As indicated from the second research question that preschool programs are different, suggesting that their approaches to emergent literacy matter to children's emergent literacy development, as measured by an assessment score. Another important aspect of this study was the differences in preschool content knowledge in phonemic awareness that public school pre-k teachers had than their Head Start and childcare counterparts. The gap in the literature that has persisted for several decades has been the result of the ongoing debate as to how to gauge what teachers know about early literacy instruction. Still missing from the discourse is language and literacy professional development, which translates to improved early literacy teaching practices in the classroom, which ultimately leads to successful readers.

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Appendix A: The Survey of Teacher Phonemic Awareness Knowledge and Skills

(PhaKS) with Answer Key

Directions: Select your response to each item by clicking on the bubble for the answer you choose. If you are not sure about on answer, choose (d) - I'm not sure. Please answer all questions. Your anonymity and confidentiality is guaranteed. Please be as candid in your answers as you can**.**

Background Information

1. My age is in the following range of years:
a. 20-30
b. 31-40
c. 41-50
d. 51-60
e. 61 or more

2. My gender is:
a. Female
b. Male

3. Primary ethnicity:
a. Caucasian
b. Black/African American
c. Native American
d. Hispanic
e. Asian/Pacific Islander
f. Other

4. I have taught preschool for the following number of years:
a. 0-3
b. 4-8
c. 9-15
d. 16-20
e. 21 or more

5. My highest level of education is:
a. High school diploma
b. A.A.
c. B. S.
d. B. A.
e. M. Ed.
f. Ed. S.
g. Ph. D. /Ed. D.

6. My most current degree is in:
a. Education
b. Early Childhood Education
c. Special Education
d. Non-education field of study: Name: _____
e. In process of completing degree

7. I use the following curriculum to support literacy instruction in my classroom:
a. High/Scope Curriculum
b. Creative Curriculum
c. Curiosity Corner (Success for All)
d. Imagine It
e. Other
i. Name: _____

8. I have had specific training in teaching the concepts of phonemic awareness (PA) and phonics:
a. Yes, in both PA and phonics
b. Yes, but only PA concepts
c. Yes, but only phonics concepts
d. No specific training in either PA or phonics

Survey Questions

1. A phoneme is:
a. the smallest part of written language
b. the smallest part of spoken language
c. a word part that contains a vowel sound
d. I'm not sure

2. Phonemic awareness is:
a. the same thing as phonics
b. understanding the relationships between letters and the sounds they represent
c. the ability to identify and work with the individual sounds in spoken words
d. I'm not sure

3. Effective phonemic awareness instruction teaches children to:
a. convert letters or letter combinations into sounds.
b. notice, think about, and work with sounds in spoken language
c. discriminate one letter from the other letters in the alphabet
d. I'm not sure

4. The student's first lessons in phonemic awareness involve:

a. learning letter-sound relationships
b. matching spoken words with printed words
c. identifying sounds shared among words
d. I'm not sure

5. A student has broad phonological awareness and now needs explicit phonemic awareness
instruction. What type of activity focuses on phonemic awareness skills?
a. Color the pictures that begin with the letter *b*
b. Count the syllables in the word *hotdog*
c. Count the sounds in the word *cake*
d. I'm not sure

6. An example of explicit phonemic awareness instruction is:
a. teaching letter-sound correspondences
b. choosing the words in a set of four words that has the "odd" sound
c. reading words in the same word family, e. g. *at, sat, mat, cat*
d. I'm not sure

7. Which activity explicitly links spelling with phonemic awareness?
a. Make as many words as you can using only the letters *p, a, s, l*
b. Say a word, then name the letters out loud; write the word
c. Say a word, then tap out the sounds in the word; write the letters for these sounds
d. I'm not sure

8. Which task requires more refined phonemic awareness?
a. **What is the first sound in *sled*?**
b. What is the first sound in *shed*?
c. The tasks are the same.
d. I'm not sure

9. Phonemic awareness instruction:
a. is only meant for students at-risk for reading failure
b. potentially benefits most children in kindergarten and 1st grade
c. is not appropriate for older students (7+ years old) who have reading problems
d. I'm not sure

10. Can the words *shoe, do, flew, and you* be used to illustrate oral rhyming?
a. yes
b. no
c. only *you, do, and shoe,* but not *flew*
d. I'm not sure

11. An example of matching words with the same final sound is:
a. please-buzz
b. house-hose
c. of-off
d. I'm not sure

12. An example of grouping words with a common vowel sound is:
a. kin, fist, kind
b. paid, said, maid
c. son, blood, touch
d. I'm not sure

13. You are helping students break a word into its separate sounds. How many sounds are in the word *grape*?
a. three
b. four
c. five
d. I'm not sure

14. Which list shows a systematic sequence in counting sounds in words, from easy to complex?
a. ape, lake, break
b. hop, shop, shops
c. toe, blow, float
d. I'm not sure

15. If you said the word *mixed* without the /K/, you would say:
a. mid
b. mist
c. mitt
d. I'm not sure

Thank you for participating in this study. Please respond to the survey no later than [insert date].

Appendix B: Permission to use the Survey of Teacher Phonemic Awareness Knowledge and Skills

Re: Interest in the Teacher Survey

Dr. Elaine Cheesman

Tue 1/30, 10:51 PM

Myra,

You are welcome!

Elaine Cheesman

On Tue, Jan 30, 2018 at 8:47 PM, Myra Crouch < > wrote:

Hello Dr. Cheesman,

Thanks so much for getting back to me. I appreciate your consideration and will most definitely cite your work in my dissertation. Thanks for the reference to the conference.

Sincerely,

Myra Crouch
Student, PhD in Educational Psychology

From: Dr. Elaine Cheesman
Sent: Monday, January 29, 2018 4:43:36 PM
To: Myra Crouch
Subject: Re: Interest in the Teacher Survey

Hello Myra,
I would be delighted to give you permission to use the survey. Just please cite me. Good luck! You are doing important research. I hope to see you at the IDA Annual conference next year in Connecticut.
Best regards,

Elaine Cheesman

On Sun, Jan 28, 2018 at 6:52 PM, Myra Crouch < wrote:

Dear Dr. Cheesman,

I hope and trust that my note finds you well. I understand from the USSC that you have retired. I received your personal email from Laura Marshall, to contact you, so I hope that is okay.

I am a doctoral student at Walden University enrolled in the Educational Psychology PhD program. My areas of interest are teacher competency, school readiness and domains of learning in early care and education settings. For my dissertation topic, I am proposing to assess the content knowledge and instructional practices of preschool teachers and the development of emergent literacy skills of preschool children as they enter kindergarten.

I am writing to request your permission to use the *Survey of Teacher Phonemic Awareness, Knowledge, and Skills* (PhAKS) in my dissertation, which you developed and used in in your research with McGuire, Shankweiler and Coyne in 2009. The participants for my study will include preschool teachers from Head Start, child care and public school pre-kindergarten programs who are all feeder programs to a local school district. As you may know, my committee is interested in the validity of the instrument as well.

Thank you for taking time to consider my request. If you have any questions, please let me know.

Sincerely,

Myra Crouch
Student, PhD in Educational Psychology