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Examination of Language Skills in Children who Attend Head Start Programs

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Examination of Language Skills in Children who Attend Head Start Programs
A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Science in Communication Disorders

by

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Bachelor of Science in Communication Sciences and Disorders, 2018

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Abstract

Socioeconomic status and poverty can greatly affect child development and have lasting impacts throughout life. Children who are raised in a low socioeconomic status homes may experience limited parent sensitivity, limited parental engagement, and limited access to stimulating materials. These factors may also limit opportunities to experience rich language and literacy experiences which can negatively impact development of emergent literacy skills and later educational growth. To reduce the effects of poverty on school readiness, income-based childcare programs allow families access to affordable early school readiness opportunities that are developmentally appropriate. Head Start programs are designed to facilitate child development, provide parent education to improve the home environment, and provide families connections to community resources. Head Start centers run on a typical school year calendar and do not provide formal education in the summer. This study examined changes in vocabulary as measured by the Peabody Picture Vocabulary Test- Fourth Edition (PPVT-4) standard scores of children who attended Head Start. Participants included 135 children enrolled in Head Start pre-k programs during the 2018-2019 school year between the ages of three and six years old. Students were further divided into two groups based on completion of mandatory reading logs to assess differences in vocabulary by group. To study the impact of the summer reading setback and the home environments over the summer, researchers developed the Perception of Summer Literacy survey which was completed by participants who returned for the 2019-2020 school year. Results of the survey were completed by 25 families and indicated that parents, on average, read to their children for the same amount time during the summer as they did in the school year. PPVT-4 results indicated there were no significant changes based on the reading logs; however, mean vocabulary scores significantly increased for students who attended Head Start for the academic year.

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Dedication

For Zachary. The outpouring of love and support has not been overlooked during this time. I am forever grateful for you and excited to see where the future takes us. I love you endlessly.

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Introduction

Socioeconomic status (SES) and childhood poverty can greatly impact children's school readiness skills, course of schooling, and future occupation (Hackman & Farah, 2008; 2009; Engle & Black, 2008). Children from low SES backgrounds are more likely to experience increased risk factors such as poor home learning environments, access to fewer resources, and poor health when compared to children from middle and high SES backgrounds (Neuman, Kaefer, & Pinkham, 2018; Storch & Whitehurst, 2001; Engle & Black, 2008; Brooks-Gunn & Duncan, 1997). These differences may result in less stimulation that is necessary for cognitive development and lower school readiness skills at kindergarten entry (Scarborough, 2001; Duncan, Dowsett, Classens, Magnuson, Huston, Klebanov, & Japel, 2007). To fight against the effects of poverty, federal programs such as Head Start have been put in place to encourage positive and stimulating preschool environments for children living at or below the national poverty line (Zill, Resnick, Kim, McKey, Clark, Pai-Samant, Connell, Vaden-Kiernan, O'Brien, & D'Elio, 2001; Zill & Resnick, 2006). These programs focus on providing children with stimulating curriculum to promote healthy child development while also providing parental education to increase learning in the home environment (Zill et al., 2001; Zill & Resnick, 2006).

The purpose of this study was to determine if completing reading logs in the spring 2019 semester would increase vocabulary scores in children enrolled in Head Start pre-k programs and increase the amount of home literacy activities that took place during the summer months.

Head Start centers operate on a typical academic calendar which can result in a summer reading setback (McDaniel, McLeod, Carter, & Robinson, 2017; Allington, McGill-Franzen, Camlli, Williams, Graff, Zeig, Zmach, & Nowak, 2010). This summer setback can be devastating

to children from low SES homes who are already falling behind peers from a higher SES (McDaniel et al., 2017; Gao, Gilbert, & Woods 2016). To assess what types of literacy activities were occurring during the summer, the Perception of Summer Literacy Survey was created. These results were compared to mandatory reading logs that were completed during the academic year.

Literature Review

There are many factors that influence a child's development that have lasting impacts throughout their life. Socioeconomic status is one area that has been found to greatly impact a child's neurodevelopment, relationships with others, and language input quality and quantity. Development of emergent literacy skills such as print concepts, written language awareness, and alphabet knowledge begin acquiring before children begin preschool (Justice & Ezell, 2004). Having a strong foundation in emergent literacy skills is required at kindergarten entry as these skills lay the foundation for learning to read (McCardle, O'Coner, Houle, Karp, & Paul-Brown, 2001). Children who are from low socioeconomic status homes are at risk for having below average emergent literacy skills due to exposure to fewer print materials, less parental engagement, and less diverse syntax and vocabulary used in the homes (Neuman, Kaefer, & Pinkham, 2018; Grebelsky-Lichtman, Zill & Resnick 2006; Storch & Whitehurst, 2001). However, a stimulating home environment has been shown to mitigate the effects a low SES can have on child development (Ronfani, Liza, Mariuz, Tongin, Bin, Ferluga, Barbone, 2015).

Socioeconomic Status

An individual's socioeconomic status (SES) is determined by the highest level of education attained, occupation, income, tangible possessions, and prestige one has within their community (Hauser & Warren, 1997). Education is an important indicator of SES since it is one of the ways society allows its members to move upward in the social hierarchy. Children who come from families with higher socioeconomic advantage are more likely to have regular school attendance, attend school for longer, and obtain higher paying occupations (Najman, Aird, Bor, O'Callaghan Williams, & Shuttlewood, 2004). Occupational status allows economic opportunity, demonstrates an individual's skill-set and "is the most important social and economic role held

by most adults outside their immediate family or household” (Hauser & Warren, 1997, p. 179). Since children are unable to hold jobs, make a reliable income, and are in the schooling process, children are assigned to the SES that their parents hold (Najman et al., 2004).

Hackman and Farah (2008; 2009) found that the SES a child was born into greatly affected their developmental outcomes. One area of development found to be affected by SES was neurocognitive performance, specifically language and executive function. Executive functions include skills such as attention, memory, overriding automatic thoughts and responses, adapting to one’s environment, and goal-directed behaviors (Garon, Bryson, & Smith, 2008). An individual’s SES can influence brain function, which is reinforced with disparities in neurocognitive functioning found in neuroimaging (Hackman & Farah, 2008;2009). The disparity in neural processing and executive function between children of high and low SES can have a long-term detrimental impact for those on the lower end, affecting their academic success and potentially restricting their ability to rise in status.

Socioeconomic status can also affect the relationships parents and children form, which can, in turn, affect the home environment. Grebelsky-Lichtman (2014) found that mothers with a higher SES were more likely to engage in joint attention activities with their children. Joint attention is defined as “attending to a common object or event outside the dyad while being aware of the shared focus” (Abels & Hutman, 2015 p.1), which is “one of the most important prerequisites of language and social development” (Ghazvini, Rafiee, Yadegari, & Pourshahbaz, 2015, pg. 1). Since joint attention is a foundational component for language development, it is imperative that children receive adequate time with a parent to encourage the growth of this skill.

Child-directed speech (CDS) is important for language stimulation in the home environment (Neuman, Kaefer, & Pinkham, 2018). Caretaker or CDS “is a distinct speech

register that differs from others in its simplified vocabulary, systematic phonological simplification of some words, higher pitch, exaggerated intonation, and short, simple sentences” (Moskowitz, 1978, pg. 94B). The quality and quantity of CDS been strongly associated with a child’s SES background and has been found to influence immediate skill building as well as the ability to process and learn from future language input (Neuman, Kaefer, & Pinkham, 2018). The type of support that is given within the home environment of a preschool aged child has also been found to be a predictor of a child’s later achievement in math and reading skills (Baharudin & Luster, 1998).

Children from lower SES backgrounds receiving fewer opportunities to establish joint attention with mothers which can lead to less experience with language and literacy throughout their day (Neuman et al., 2018). This can in turn lead to decreased print and phonemic awareness development (Storch & Whitehurst, 2001). Children from low SES backgrounds who do not receive sufficient support within the home to develop emergent literacy skills prior to kindergarten will develop the skills necessary throughout kindergarten. However, these skills will be obtained at a much slower rate compared to children from higher SES homes (Neuman, et al, 2018). While children from low SES backgrounds may score within average limits on reading skills, their performance will still fall a full standard deviation below children from higher SES homes (Hammer, Farkas, Maczuga, 2010; Neuman, et al., 2018; ill, Resnick, Kim, O’Donnell, Sorongon, Ziv, and Alva, 2006). Limited reading skills is a problem for children in academic settings. Insufficient reading skills may lead to problems that will affect an individual in all aspects of life, throughout the lifetime (McCardle, Cooper, Houle, Karp, Paul-Brown, 2001). Being a proficient reader is critical to an individual’s overall well-being, as reading is essential in this literacy-driven society (Lyon, 1998). Therefore, for many, reading is not simply

seen as an educational issue, but instead a public health issue (McCardle, et al., 2001; Lyon, 1998).

Economically, poverty is based on income measures, with the poverty line consisting of enough money to purchase the food necessary to meet dietary requirements and a small amount leftover for non-food goods (Engle & Black, 2008). However, a broader definition of poverty is often necessary to fully recognize the disadvantage of living in poverty. The broader definition of poverty includes lacking material assets, health, and a deprivation of capabilities such as social belonging, education, cultural identity, and respect (Engle & Black, 2008).

Poverty can be seen as the fault of one individual, or it can “focus on the social exclusion factors which prevent groups or categories of peoples from moving out of poverty” (Engle & Black, 2008 p. 243). No matter how an individual decides to view poverty, it should be kept in mind that poverty is a dynamic condition that affects people in different ways. Some people cycle in and out of poverty throughout their lives, others fall into poverty temporarily after losing a job, and others experience generational poverty (Engle & Black, 2008).

Every year, the US Census Bureau adjusts the current poverty threshold for inflation to determine the line for the following year. To determine whether a family is living in poverty, anyone over the age of 15 who is living in the home reports their income before taxes. Each individual’s income is then added together and subtracted from the poverty guideline for their family’s size. If the difference is less than the poverty threshold, then each individual living in the household is considered in poverty; if the amount is greater than the poverty threshold, the family is not considered to live in poverty. The poverty rate for the United States in 2017 was 12.3%, which includes 39.7 million people (US Census Bureau, 2018).

Poverty-related developmental risk factors, such as limited parental interaction, limited income, and lack of established routines can accumulate leaving children at risk for developmental delay, chronic health problems, and socioemotional problems (Hix-Small, 2017; Johnson & Noble, 2016). Exposure to risks from conception to the age of three years can affect the brain's structure and function, which could jeopardize child development and have lasting effects into adulthood (Walker, Wachs, Grantham-McGregor, Black, Nelson, Huffman, Richter, 2011; Britto, Engle, & Super, 2013; World Health Organization). The World Health Organization has determined that stable and nurturing caregivers, a safe and supportive home environment, and adequate nutrition are essential for healthy child development. While SES was found to have a large effect on a child's development, this could be mediated by the home environment. (Ronfani, Liza, Mariuz, Tongin, Bin, Ferluga, Barbone, 2015)

Development of Emergent Literacy Skills

Reading and writing are significantly more complex in the variety of vocabulary and syntax used than oral language (Chomsky, 1972). It has been found that reading is not a naturally developing skill, children must be taught to read. Many children require explicit instruction of decoding, word recognition, and comprehension to learn to read (Lyon, 1998). While the instruction of many literacy skills requires explicit instruction during the early school years, the foundations for learning literacy are laid well before a child ever enters kindergarten (McCardle, Cooper, Houle, Karp, & Paul-Brown, 2001). The period of emergent literacy begins at birth and continues through the end of preschool (Justice & Ezell, 2004). During this time, "children are rapidly developing important precursory skills in written language awareness, including print concepts, concept of word, and alphabet knowledge" (Justice & Ezell, 2004, p. 185). Development of these skills allows children to distinguish between different language forms,

functions of print, sensitivity to words as units of print and sound, and emerging alphabet knowledge (Justice & Ezell, 2004).

Helping children develop behaviors associated with literacy learning during the first three years of life include book handling, labeling pictures, and listening to stories (Terrell & Watson, 2018) and allow for more advanced skills such as print concept awareness and phonemic awareness (Lyon, 1998; Terrell & Watson, 2018). A way to facilitate the development of these skills is through shared book reading, which is considered an integral component of emergent literacy (Terrell & Watson, 2018). Through shared book reading, children are able to determine that print is meaningful within society as well and helps to develop phonemic awareness and alphabet knowledge in a natural and comfortable environment (Justice & Ezell, 2004; Terrell & Watson, 2018). Shared book reading often evokes positive feelings due to the intimate nature of reading, which involves sitting closely to an adult while engaging in a shared activity (Terrell & Watson, 2018). As previously mentioned, reading exposes children to a variety of complex syntax and vocabulary that is absent from spontaneous spoken language (Chomsky, 1972; Purcell, 1996). In an analysis of the Head Start Family and Child Experiences Survey by Hammer et. al (2018), it was found that children's parents who read to them made larger gains in vocabulary than those who did not. Allowing children to experience an increased variety of rich language has been found to promote linguistic development of oral language (Chomsky, 1972), which is essential for the development of reading and writing (Terrell & Watson, 2018; Storch and Whitehurst, 2001).

Socioeconomic status significantly impacts emergent literacy, and later, advanced literacy skills. For example, research has reported that children from lower SES background experience fewer opportunities to experience language and literacy during waking hours and are

exposed to less frequent child-directed speech than children from higher SES homes (Neuman, Kaefer, & Pinkham, 2018). It has also been found that children from low SES homes are exposed to fewer literacy experiences, which inhibits print and phonemic awareness development (Storch & Whitehurst, 2001).

Not only are children from low SES deprived of language and literacy experiences, they also receive less support for school-based language and literacy than children from working-class homes (Neuman, et al., 2018). Children from lower SES communities with inadequate emergent literacy skills will receive less support from teachers and staff in school (Neuman et al., 2018). In a study by Neuman, et al. (2018), it was found that children from low income neighborhoods were more likely to attend a school that failed to meet yearly progress, had shorter school days, and teachers with less experience. In another study by Tichnor-Wagner, Garwood, Bratsch, and Vernon (2016), it was found that children who struggled to read in school were less likely to be read to at home, had fewer books in the home, were less likely to have a computer, and came from a lower SES than children who did not struggle to read.

The impact of SES does not stop at hindering the development of immediate skills, but also affects future abilities to process and learn from language (Neuman, et al., 2018). Once the transition from preschool to kindergarten occurred, Neuman et. al (2018) noted that children from poorer communities experienced limited growth in language and literacy compared to peers from higher SES homes. It is important to note that children from lower SES homes can develop literacy skills once they are in formal school, but at a slower rate than children from higher SES homes. It is likely that, while they will be within average limits of linguistic knowledge, their performance will fall a full standard deviation below higher SES peers (Neuman, et al., 2018; Zill & Resnick, 2006).

Home Environment

A child's home environment, which includes parental engagement, parent/child interaction, and access to resources, can either mediate or exacerbate the effects of low SES (National Institute of Child Health and Human Development Early Child Care Research Network, 2005). If a child is born into a low SES with a low-quality home environment including limited parent sensitivity, minimal parental engagement, and no access to stimulating materials, a child's development could be limited (Zill & Resnick, 2006; Neuman et al., 2018; Najman et al., 2014). It has been found that children from low SES homes experience less opportunities to experience rich language and literacy experiences (Neuman et al., 2018). Creating a stimulating environment for a child to grow in is imperative because a child's cognitive development is central to academic and economic success as an adult (Najman et al., 2004).

Britto et. al (1966) found that the home literacy environment consisted of language and verbal interactions, creating a learning climate, and a positive socioemotional climate. Hart and Risley (1995) found that parents from higher SES families engaged in more utterances per hour with their child and conversed with their child more frequently during an hour. Not only were parents from higher SES engaging more frequently with their children for longer periods of time, they were also using rich language and diverse vocabulary (Hart and Risley, 1995). In a study by Tichnor-Wagner et al. (2016), it was found that children who did not struggle with reading in school were more likely to come from families where they were read to 5-7 days per week, suggesting that parent interaction surrounding literacy is beneficial to children's reading development.

Previous research has employed a variety of ways to measure home literacy environments with parental reports frequently being used for estimating the amount of shared book reading occurring in the home (Bus, van Ijzendoorn, Pellegrini, 1995). While in-home observations are the most effective way to determine the amount of meaningful literary experiences and parental interactions that children encounter, they are often not utilized due to their expensive and time-consuming nature; therefore, a parent self-report measure is typically used (Wasik & Hindman, 2010). Bracken and Fischel (2008) completed a study on the family reading behaviors and early literacy skills in preschool children by sending home a survey for parents to complete, which allowed them to identify relationships existing between parent-child reading interactions and early literacy skills that the children had developed (Bracken & Fischel, 2008).

It should be taken into consideration that there are limitations to self-report measures including parents exaggerating answers to match social expectations, forgetting information surrounding book routines (Bus et. al, 1995; Fiske, 1987; Bracken & Fischel, 2008), and survey items failing to include all literacy related activities that might be used within the home such as letter magnets or coloring and writing with crayons, pencils, and paper (Braken & Fischel, 2008).

School Readiness

School readiness is a complex concept that encompasses the skills a child is expected to enter kindergarten with in order to succeed academically (Duncan, Dowsett, Classens, Magnuson, Huston, Klebanov, Pagani, Feinstein, Engel, Brooks-Gunn, Sexton, Duckworth, & Japel, 2007). These skills include oral language, conceptual ability, number and letter recognition, attention, and socioemotional skills (Duncan et al., 2007). A strong foundation in school readiness skills prior to kindergarten ensures that children have the tools needed to learn

foundational reading and math skills that will impact educational outcomes (Bernstein, West, Newsham, & Reid, 2014).

Children who enter preschool with deficits in syntactic use and speech production typically end up with poor vocabulary and phonological awareness skills at the end of their time in preschool, which are precursors for later reading abilities (Scarborough, 2001). This trend continues as children who enter kindergarten with weak verbal ability and literacy knowledge are more likely to have difficulty learning to read, therefore it is crucial to ensure that children are entering school with adequate, age-appropriate skills (Scarborough, 2001). One study found that understanding early math concepts such as numbers and ordinality were also predictors of future learning (Duncan et. al, 2007). Children who enter kindergarten with stable early math and reading skills are more likely to perform at higher levels throughout their academic career (Duncan et. al, 2007).

Differences in School Readiness Between Children from Different SES Background

Ryan, Fauth, and Brooks-Gunn (2006) stated that “growing up in poverty can significantly impact a child’s readiness to learn upon school entry” (p. 323), which is reflected in steep gradients in reading and math abilities at kindergarten entry compared to children from higher SES homes (Larson, Russ, Nelson, Olson, & Halfon, 2015). Substantial differences were also found in cognitive function (Larson et. al, 2015; Dearden, Sibieta, Sylva, 2011) and socioemotional development as early as the age of three years with the gap widening by five years of age (Dearden et. al, 2011). Ryan et. al (2006) also found that there were significant gaps in achievement between children from middle-income homes and low-income homes at kindergarten entry and that these gaps widen as the children get older. These gaps were found to

contribute to disparities throughout life in learning difficulties, educational attainment, and future occupation (Ryan et. al, 2006). Steep gradients are caused by a combination of factors resulting from low SES such as health, home learning, parenting, and early education (Larson et. al, 2015). Children from lower SES backgrounds experience less advantageous early childhood home environments resulting in differences in health, well-being, and home learning environment, which can explain differences in cognitive levels (Dearden et. al, 2011).

Income, poverty, and low preschool ability are associated with lower test scores throughout childhood, grade failure, school disengagement, and dropping out of school (Brooks-Gunn, Guo, and Furstenberg, 1993). It has also been found that the amount of family household income during early childhood had a larger impact on completed schooling than did income during middle childhood, which can correlate to the importance of school readiness and the impact it can have on a child's future (Duncan & Brooks-Gunn, 2000)

Head Start

To reduce the effects poverty has on school readiness, income-based child care programs like Head Start provide families access to affordable early school readiness opportunities that are developmentally appropriate. (Zill et al., 2001; Zill & Resnick, 2006). Head Start programs are “designed to enhance children’s physical, intellectual, and social competencies on the grounds that each domain contributes to a child’s overall developmental competence and readiness for school” (Duncan et al. 2007, p. 1429). Head Start programs have adopted the whole child view of school readiness which incorporates five developmental domains including physical well-being and motor development, socio-emotional development, approaches to learning, language and emergent literacy, and cognition (Zill et al., 2001). Each of these five developmental areas

help children enrolled in Head Start programs to receive well rounded knowledge to develop appropriate school readiness skills for kindergarten (Zill et al., 2001).

Head Start programs also aim to incorporate parents into the learning process by providing educational activities they can carry out with their children and providing access to resources to obtain nutritious meals and healthcare for their families (Zill & Resnick, 2006). To better capture the large goals of increasing family involvement and developing the whole child, Head Start created five objectives that lead to the development of school readiness (Zill et al., 2001). These objectives include: enhancing children's growth and development; strengthening families to be the primary nurturers for their children; providing children with educational, health, and nutrition services; linking families to needed community services; and ensuring parents are involved in decision-making regarding their children (Zill et al., 2001). These objectives are critical in "helping children of low-income families attain their full potential" (Zill et al., 2001, pg. 23).

Hammer, Farkas, and Maczuga (2018) completed an analysis of the Family and Child Experiences Survey database and found that preschoolers who enrolled in Head Start had language and literacy skills below the national average, however, they made significant gains in vocabulary and early writing skills. It was also found that children who attended Head Start for two years exhibited greater gains in test scores than those who only attended Head Start for one year (Hammer et al. 2018) and once the "Head Start graduates were in kindergarten, they made significant gains in vocabulary and early writing abilities" (Hammer et al., 2018 pg 73).

Summer Set Back and Summer Reading Programs

Every summer, students go without formal academic instruction in preschools and schools (McDaniel, McLeod, Carter, & Robinson, 2017), resulting in a summer reading setback (Allington, McGill-Franzen, Camlli, Williams, Graff, Zeig, Nowak, 2010). While this gap occurs to the majority of children despite their SES, this setback can be devastating for children from lower SES homes who are already falling behind peers from a higher SES (McDaniel, McLeod, Carter, & Robinson, 2017; Gao, Gilbert, & Woods 2016). Exacerbation of the gap stems from children in lower SES homes having less access to literary resources within the home, less exposure to rich vocabulary and varied syntax during parent interaction, and a decreased learning culture with the home (Neuman, et al, 2018; Britto & Brooks-Gunn, 2001; Storch & Whitehurst, 2001). The significant gap in reading achievement between children from low and high SES has been substantial and persistent (Allington, et.al., 2017).

To help encourage growth of literary skills in children from lower SES homes, summer reading programs have been implemented in several studies to determine if there is an effect on the maintenance of literacy skills. In a study by McDaniel, et al. (2017), they found that a summer literacy program with 6 and 7-year old children receiving 3 hours of literacy instruction by trained counselors a week for 9 weeks were able to maintain their literacy skills over the course of the summer. In another study by Kim (2007), it was found that giving children in grades 1-5 books to take home over the summer yielded more self-reported time spent reading and engaging in literary activities, however, the test group and the control group performed the same on reading comprehension measures. Actively participating in shared book reading and exposure to literary artifacts is a crucial aspect of emergent literacy development (Terrell & Watson, 2018; Carlson, 2005).

In another study looking at the effects of emergent literacy in rising kindergarteners, it was found that in a summer camp where counselors were trained to help children develop emergent literacy skills for 1 hour per day over a 9 week period, the participants exhibited growth in letter-naming and letter-sound fluency (McDaniel, Carter, McLeod & Robinson, 2015). Due to the maintenance and growth of literary skills and an increase in voluntary reading over the summer months, authors concluded “summer literacy programs have recently begun to be studied as possible opportunities for intensive school-readiness preparation” (McDaniel, et al., 2015, p.77).

In summary, low SES and childhood poverty increases children’s risk to be exposed to factors such as fewer opportunities to experience rich vocabulary and syntax, less stimulating home environments, and fewer resources (Neuman et al., 2018; Engle & Black, 2008; Storch & Whitehurst, 2001) that could result in lasting impacts on academic outcomes (Neuman et al., 2018; McCardle et al., 2001). Head Start programs allow families living in low SES homes to have access developmentally appropriate childcare (Zill et al., 2001) to help facilitate language and literacy skills to increase school readiness and educate the parents to providing stimulating home environments and care for their children (Hammer et al., 2018; Zill et al., 2001; Zill & Resnick, 2006). However, families go without developmentally appropriate childcare during the summer months when Head Start is out of session, which could lead to devastating learning setbacks in children who are already falling behind their peers in school (McDaniel et al., 2017; Allington et al., 2010).

To increase the amount of parent-child interaction in the home, a Head Start program with centers within one county in the South/Midwestern area of the United States implemented mandatory literacy logs to be carried out within the home and turned back in on a weekly basis.

Researchers decided to determine the impact completing reading logs had on Peabody Picture Vocabulary (PPVT-4) scores that are routinely obtained on all children at the beginning and end of each academic school year. To determine the home environment over the summer months, surveys will be sent out to assess parent's perception of the literacy activities that took place within the home over the summer. Researchers suspected that children who kept literacy logs during the school year would experience higher gains on PPVT-4 scores when retested at the end of the 2018-2019 school year and that those who participated in more literacy activities over the summer would experience less loss in PPVT-4 scores at the beginning of the 2019-2020 school year.

Methods

Procedures

Participants for this study included 135 children enrolled in Pre-K programs at Head Start centers within one county in the South/Midwestern area of the United States. Participants were between the ages of three to six years old and enrolled in Head Start centers for the 2018-2019 academic school year.

Starting in January 2019, the participating Head Start programs required parents to fill out homework logs with the homework activity, book(s) read, and time spent on each activity every week. Homework logs were sent home at the beginning of every week and expected to be returned at the end of the week with the homework and reading section filled out. For research purposes, participants were divided into two groups, compliers and non-compliers based on whether they completed homework logs during spring 2019. As a result of the homework logs being a requirement, there were high levels of participation among families in completing the reading logs, resulting in skewed participant groups. For this study, only logged reading information was gathered to determine if time spent reading at home impacted vocabulary growth.

To determine vocabulary growth, the Peabody Picture Vocabulary Test- Fourth Edition (PPVT-4) was administered in the fall of 2018, spring 2019, and fall 2019. PPVT-4 testing is carried out at the beginning and end of every academic school year by Head Start centers to track children's growth. Testing is administered by Head Start center directors and speech-language pathologist graduate clinicians from a local university.

Every year from May-August, Head Start centers close for summer break, leaving children without structured learning and parents without requirements to complete reading logs to return to their Head Start program. To determine if parents were still reading with their children during summer break, a survey was constructed to determine parent's perceptions of the meaningful literary experiences they had with their children. Surveys were passed out by classroom teachers for parents of children who had been enrolled in the 2018-2019 academic year and were returning for the 2019-2020 academic year and to fill out in the classroom and took about 10-15 minutes to complete. Questions varied from the time spent reading, number of books in the home, and parental education.

Participants

The sample consisted of 135 children from one county in the South/Midwestern area of the United States who were enrolled in Pre-K programs at Head Start centers within the county. The children were between the ages three to six years old with the mean age in fall 2018 consisting of 49 months (SD: 8.1, 36 months min, 67 months max). To be considered eligible for the study, students had to be enrolled in Head Start centers for the 2018-2019 school year, between the ages 3-6 years old, administered the Peabody Picture Vocabulary Test - Fourth Edition in fall 2018 and spring 2019. Reported race and ethnicity demographics were as follows: 44% White, 25% Hispanic, 14% African American, 5% Asian, 6% Pacific Islander, 7% Biracial/Multiracial, and 5% Native American. One participant chose to not disclose race and ethnicity information. In this study Pacific Islanders were mostly comprised of Marshallese, as there is a large population in this area of the United States. English was the primary language for 77% of participants, Spanish for 20%, and Marshallese for 3%. One participant did not

disclose the primary language spoken in their home. The 135 children consisted of 46% male and 44% female. The number of participants that identified in each group is displayed in table 1.

Two groups were established based on the participant's compliance with completing the spring 2019 literacy logs; those who completed at least 2 weeks of literacy logs were included in the complier group and those who did not turn in any literacy logs made up the non-complier group. Due to the homework logs being a requirement made by Head Start, a high number of participants returned completed logs allowing 73 of the participants to be placed in the complier group and 61 in the non-complier group. The complier group's race and ethnicity consisted of 44% White, 37% Hispanic, 17% African American, 1% Pacific Islander, 2% Native American, 1% Asian, and 4% Biracial/Multiracial. The primary languages spoken by compliers breaks down into 75% English, 22% Spanish, and 1% Marshallese and the sex was divided into 56% male and 44% female. Non-complier's race and ethnicity consisted of 40% White, 17% Hispanic, 9% African American, 10% Biracial/Multiracial, 6% Pacific Islander and 8% Native American. The primary language spoken by the non-complier group was 77% English, 4% Marshallese, 14% Spanish and the sex breakdown consisted of 51% male and 49% female. Complier and non-complier totals for each reported demographic group are included in Table 1.

Parents/guardians of participants who were enrolled in the 2018-2019 school year and 2019-2020 school year and between the ages of 3-5 were given a survey that asked questions regarding the literacy experiences that took place over the summer of 2019. Out of the 28 participants who met the requirements, 25 agreed to complete the survey. Race and ethnicity of the 25 who completed the survey consisted of 44% White, 32% Hispanic, 12% Black, 4% Pacific Islander, 4% Biracial/Multiracial, and 4% Native American. The primary language spoken by the 25 who completed the survey consisted of 80% English, 16% Spanish, and 4% Marshallese and

the group consisted of 48% male and 52% female. Reported demographic information for the number of participants in each group is included in Table 2.

Table 1

Demographic Breakdown of Participants

	<i>Total Participants</i>	<i>Compliers</i>	<i>Non- Compliers</i>	<i>Survey</i>
<i>Sex</i>				
<i>Female</i>	62	32	30	13
<i>Male</i>	72	41	31	12
<i>Race</i>				
<i>Non-Hispanic White</i>	59	32	26	11
<i>Hispanic</i>	34	22	12	7
<i>African American</i>	19	12	7	3
<i>Multiracial</i>	9	2	7	1
<i>Asian</i>	1	1	0	1
<i>Pacific Islander</i>	5	1	4	1
<i>Native American</i>	7	2	5	1
<i>Language</i>				
<i>English</i>	103	55	48	19
<i>Spanish</i>	27	17	10	4
<i>Marshallese</i>	4	1	3	1
<i>Total Participants</i>	134	73	61	25

Table 2*Demographic Breakdown of Survey Participants*

		<i>Survey Participants</i>
Sex		
	<i>Female</i>	13
	<i>Male</i>	12
Race		
	<i>Non-Hispanic White</i>	11
	<i>Hispanic</i>	7
	<i>African American</i>	3
	<i>Multiracial</i>	1
	<i>Asian</i>	1
	<i>Pacific Islander</i>	1
	<i>Native American</i>	1
Language		
	<i>English</i>	19
	<i>Spanish</i>	4
	<i>Marshallese</i>	1
Total Participants		25

Note. This table provides the number of participants in each demographic group. One participant in the total participants group and in the non-complier group listed their race as other and elected to not provide demographic data.

Measures

The Peabody Picture Vocabulary Test - Fourth Edition Form A (PPVT-4; Dunn & Dunn, 2007) was administered to assess receptive vocabulary skills of children. The PPVT-4 is a norm referenced, standardized assessment that can also be used as a criterion reference in regard to how many vocabulary words an individual knows. A sample that represented the U.S. population was used for standardization of this test. Head Start administered this test at the beginning and end of every academic year to measure the children's vocabulary growth. In this assessment, examinees are shown 4 pictures on one page of the stimulus booklet and asked "show me" or

“point to” a vocabulary word shown on the page. The examinee then must correctly identify the target word out of the 4 pictures shown. Tests were administered to children enrolled in Head Start centers by center directors and graduate speech-language pathologist student clinicians from a local university during the following: fall 2018 (September - October 2018), spring 2019 (April - May 2019), and fall 2019 (September - October 2018). Previous studies have shown the internal consistency reliability of the PPVT-4 is .97 (Dunn & Dunn, 2007).

Literacy Logs

In January of 2019, the Head Start centers began sending home weekly homework logs with the children for their guardian to fill out each week. Parents were instructed to complete a homework activity provided by Head Start and to read to the child every night. Parents would record the activity completed and the number of minutes it took for them to complete it for the homework section and the title of book(s) read and the number of minutes it took to read the book(s). The homework logs were a requirement and parents were encouraged to turn them in weekly, however, despite the homework logs being a requirement, not all families participated consistently or at all. For the purpose of this study, reading log minutes were only used to measure whether reading going on in the home would increase vocabulary scores.

Perception of Summer Literacy Survey

To determine whether guardians were reading to their children over the duration of summer 2019 within the homes of Head Start families, a survey was constructed to send home. The survey was constructed using content information gathered from the Stony Brook Family Reading Survey (Whitehurst, 1992) and information from a study conducted on the language and literacy environments of Head Start families by Waisk and Hindman (2010). To help overcome

the limitation of remembering information correctly, questions were written in simple language, ecologically valid, and the survey was able to be completed quickly (Wasik & Hindman, 2010).

The Perception of Summer Literacy Survey contained 13 questions regarding the number of children in the home, frequency and average duration of time spent reading, how many books were in the home, library events attended, whether families checked out books from the public library, primary language used when reading, parental education, and a rating of how much the parent's perceived the child's interest in reading. Surveys were sent out electronically to parents with physical copies handed out to parents by Head Start classroom teachers. Most parents completed the 10-15-minute survey during child drop-off or pick-up times. Informed consent was obtained from the guardian for his or her participation and that of their child.

Survey Data

Responses from the Perception of Summer Literacy Survey consisted of information pertained to literary events that happened inside and outside the home. Parents were asked how often they read to their children over the summer of 2019 with answers consisting of never/rarely, occasionally, once per week, several times per week, daily, and several times per day. To follow up the frequency of reading, item five asked families how many minutes they spent reading to their children with multiple choice answers in 15-minute increments ranging from 1-60 or more minutes. To determine the literary resources children had access to, items six and seven asked about the number of adult and children's books in the home with multiple choice answers ranging from 0-100 or more. Due to the diverse population of children attending Head Start, item 10 asked parents' which language(s) they read to their children in (English, Spanish, Marshallese, or Other) and could select more than one option. Whether or not families attended library events were answered with a yes or no and the frequency of checking out library books

consisted of never, rarely, once a month, or twice a month. To determine if the child's interest in reading had any effect on the frequency of reading or changes vocabulary scores, guardians were asked to rank how interested their child was in reading compared to other activities using a Likert scale with 1 being their least favorite activity and 6 being their favorite activity. Parental education levels often affect the development of literacy skills in children, therefore, items twelve and thirteen of the survey regarded paternal and maternal education. Answers about educational level ranged from some high school, high school diploma/GED, trade school, some college, and a college degree.

Data Analysis

A paired *t*-test was utilized to determine if there was a change in PPVT-4 scores between fall 2018 and spring 2019 for children enrolled in Head Start pre-k programs. To determine if there was a difference in PPVT-4 standard scores between children who completed literacy logs and those who did not, an independent *t*-test was used. An independent *t*-test was also run to determine differences in raw PPVT-4 in fall 2018 and spring 2019 in compliers and non-compliers and to determine differences in PPVT-4 standard scores over the academic year between the two groups. A chi-square test of independence was utilized to determine if there were any associations between demographic groups (sex, race/ethnicity, and language) and whether they were in the non-complier or complier group.

Results

PPVT Results

All Participants

The average raw score from the PPVT assessments administered in the fall of 2018 for the 135 participants was 53.98 (SD=23) and the average raw score for spring 2019 results was 76.74 (SD=27). This resulted in a significant change ($p < .001$), with mean difference of 22.763 (SD=13). The average standard score of all 135 participants in the fall of 2018 was 91.87 (SD=17) and the average standard score for spring 2019 was 100.73 (SD=19). This resulted in a significant change ($p < .001$), with a mean difference of 8.852 (SD=11). Raw and standard PPVT-4 scores for all participants can be found in Table 3.

Non-compliers vs. Compliers

Non-compliers began the school year in fall 2018 with an average standard score of 92.34 (SD=17) and an average raw score of 57.23 (SD=25). Compliers began the school year with an average standard score 91.48 (SD=16) and a raw score of 51.22 (SD=21). Non-compliers ended the school year in spring 2019 with an average standard score of 101.45 (SD=19) and a raw score of 80.81 (SD=28). Compliers ended the school year in spring 2019 with an average standard score of 100.11 (SD=19) and a raw score of 73.29 (SD=26). While not statistically significant, it should be noted that non-compliers had higher PPVT-4 scores in fall of 2018 and spring of 2019 than compliers. An ANOVA revealed that there were no group by time interactions ($p = .503$) between compliers and non-compliers. Raw and standard PPVT-4 scores for compliers and non-compliers can be found in Table 3.

Table 3*PPVT-4 Scores for Total Participants, Compliers, and Non-Compliers*

	Fall 2018 Raw	Spring 2019 Raw	Fall 2018 SS	Spring 2019 SS
Total Participants	53.98	76.74	91.87	100.7
Compliers	51.22	73.29	91.48	100.11
Non-Compliers	57.23	80.81	92.34	100.73

Differences in Demographic Groups for Compliers and Non-Compliers*Race*

Despite having 7 categorical groups for race, due to low counts in Non-White groups, categories were divided into White and Non-White. Those categorized in the White group are those who reported to be White and of Hispanic or Non-Hispanic origin. As illustrated in Table 4, compliers consisted of 72.6% White and 27.4% Non-White. In the non-complier group, 59% were White and 41% were Non-White. There was no association between race and whether or not a child completed reading logs ($p=.097$).

Language

Language was condensed into two categorical groups of English and Spanish and Marshallese combined. In the complier group, 75.3% of participants complied and spoke English and 27.4% complied but spoke Spanish or Marshallese. For non-compliers, 78.7% spoke English and 21.3% spoke Spanish or Marshallese. There was no association between whether a child spoke English or another language and whether or not a child completed reading logs ($p=.647$). These results can be viewed in Table 4.

Ethnicity

Ethnicity was divided into two categorical groups of Hispanic and Non-Hispanic. In the complier group, 31.5% identified as Hispanic and 68.5% identified as Non-Hispanic. For non-compliers, 21.3% identified Hispanic and 78.7% identified as Non-Hispanic. This revealed there was no association between whether a child identified as Hispanic whether or not a child completed reading logs ($p=.185$), as shown in Table 4.

Sex

Sex was divided into male and female groups. As shown in Table 4, compliers consisted of 43.8% females and 56.2% males while the non-complier group consisted of 49.2% female and 50.8% male. There was association between the sex of the participant and whether or not a child completed reading logs ($p=.537$).

Age

The average age in months was calculated for the complier group and the non-complier group. For compliers, the average age was 46.97 months and for non-compliers the average was 50.08 months. At the 5% significance level, there was a significant difference in participants' average age in months based upon whether or not they complied with completing reading logs ($p=.015$). This information can be viewed in Table 4.

Table 4*Sample Characteristics by Compliance*

Demographic	Complier (N=73)*	Non-Complier (N=61)*	p-value**
Race			0.0972
White	53 (72.6)	36 (59.0)	
Non-White	20 (27.4)	25 (41.0)	
Language			0.6474
English	55 (75.3)	48 (78.7)	
Spanish or Marshallese	18 (24.7)	13 (21.3)	
Hispanic			0.1849
Yes	23 (31.5)	13 (21.3)	
No	50 (68.5)	48 (78.7)	
Sex			0.5366
Female	32 (43.8)	30 (49.2)	
Male	41 (56.2)	31 (50.8)	
Age (months)	46.97 (7.72)	50.08 (6.92)	0.0153**

Note. Values for Categorical Variables are Count (%) and Values for Continuous Variables are Mean (SD)

*Statistically Significant Differences between each comparison group Assessed at $p < .05$ Significance Level Utilizing χ^2 -Tests for Categorical Variables and T-Tests for Continuous Variables

Perception of Summer Literacy Survey Data

The following data was taken on a subgroup of the total participants that were given the Perception of Summer Literacy Survey. This subgroup consisted of children that attended Head Start pre-school programs for the 2018-2019 school year and returned for the 2019-2020 school year.

Time Spent Reading

On the survey items pertaining to the frequency and duration of reading time over the summer, 52% of participants reported they read on a weekly basis and 40% reported they read daily, as shown in Figure 1. During the reading sessions, 84% of participants reported they read for 15-30 minutes and 16% reported they read for 30-45 minutes, as shown in Figure 2.

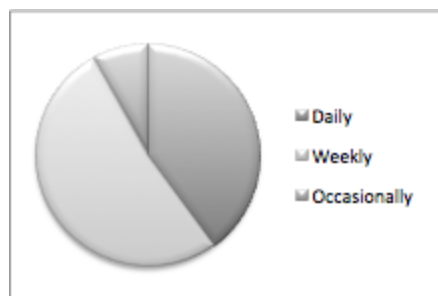


Figure 1 *How Often Parents Read to Their Children Over the Summer*

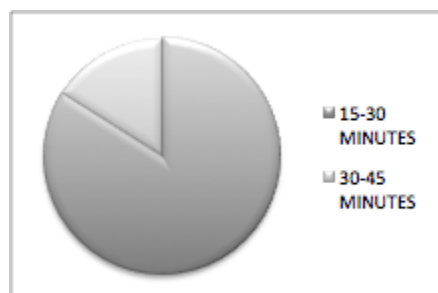


Figure 2 *How Long Parents Read to Their Children During a Reading Session*

Home Environment

No families reported to have zero children's books within the home. As seen in Figure 3, 44% of families reported to have 1-25 books, 28% reported having 25-75 books, and 28% reported having 75+ children's books in the home. As illustrated in Figure 4, 8% of participants reported having no adult books in the home and 52% agreed to having 1-25 adult books in the home. Forty percent of participants reported to having 25+ books in the home. As shown in Figure 5, 76% of the participants reported that the predominant reading language was English only and 4% reported to predominantly read in Spanish, while 20% of participants reported that they read in both languages. The item pertaining maternal education revealed that 16% completed some high school, 40% obtained a diploma or GED and 20% had a college degree or trade, as seen in Figure 6. For paternal education, 20% of participants reported they had some high school, 16% had a diploma or GED and 20% had a college degree or trade, as shown in Figure 7.

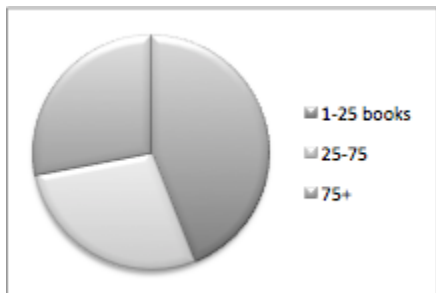


Figure 3 *Total Number of Children's Books in the Home*

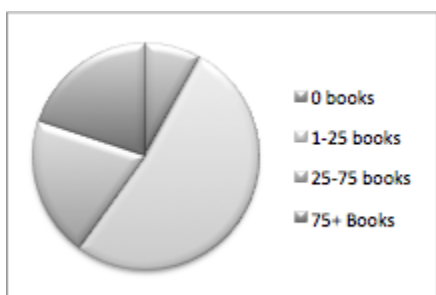


Figure 4 *Total Number of Adult Books in the Home*

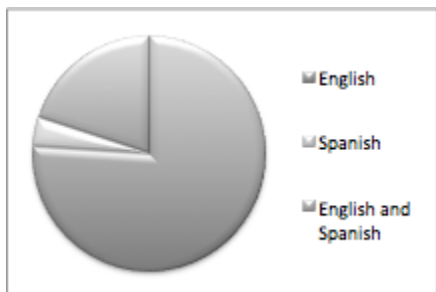


Figure 5 *Primary Language Parents Read to Their Children in*

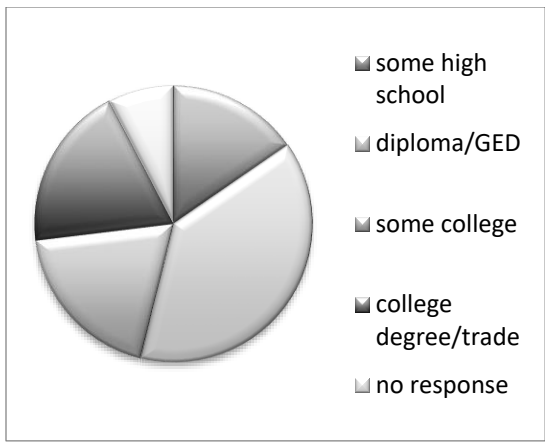


Figure 6 *Highest Level of Maternal Education*

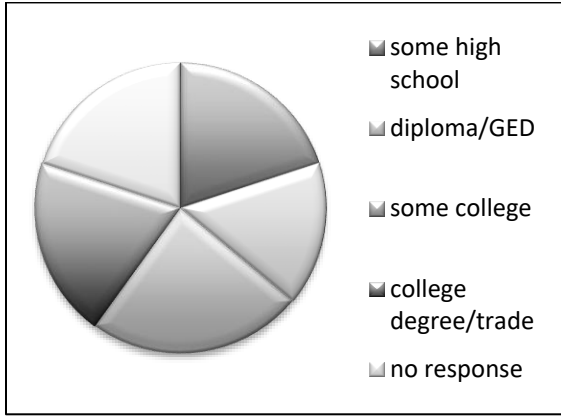


Figure 7 *Highest Level of Paternal Education*

Community Events

The survey revealed that 64% of participants did not utilize the public library to check out books over the summer, as seen in Figure 8. When asked if they attended community events hosted by the library, 68% of participants reported they did not, illustrated in Figure 9.



Figure 8 Families Who Checked Out Books Over the Summer

Note: Families who selected “yes” checked out books over the summer break.

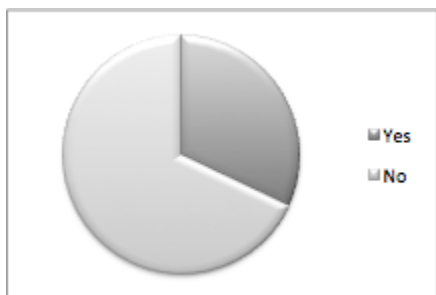


Figure 9 Who Attended Events Hosted By the Public Library

Note: families who selected “yes” did attend events hosted by the public library.

Discussion

The aim of this study was to determine the reading behaviors of children enrolled in Head Start pre-k programs during the school year and over the summer, and whether this impacted vocabulary development. This was accomplished by determining if completing reading logs made mandatory by Head Start during the spring 2019 semester increased PPVT-4 scores compared to children who did not complete reading logs. The second aim of this study was to determine what types of literacy experiences Head Start children took part in over the summer break.

Socioeconomic Status and Poverty

The children enrolled in Head Start programs in this study had an average PPVT-4 score of 100 at the end of the school year. Participants started out the school year with a standard score of 91, so as a group, they moved towards the average after attending a full year of instruction at Head Start. The standard deviation was 16, meaning that some children are on the lower end of the average range, which is consistent with research showing that children might be within the average range, but a full standard deviation below the mean (Hammer, Farkas, Maczuga, 2010).

Free community resources that are available to families from low SES homes, such as the public library, were not utilized over the summer by the majority of families in this study. Only 32% of families reported they attended events hosted by the public library over the summer and 36% of families reported they checked out books. While the majority of families are not taking advantage of community resources available to them, it is important to take into consideration that many of the events hosted by the library occur in the middle of the weekday when parents are working, leaving them unable to take their child to attend.

Child Development and Home Environment

The World Health Organization determined that a safe and stable home environment are essential to child development and Rofani et al. (2015) found that a good home environment can mediate the effects that poverty can have on child development, such as emergent literacy skills. Head Start centers in this study recognize this link and required families to complete homework logs on a weekly basis to expose student's exposure to stimulating material at home. Reading was a component of these logs to increase development of emergent literacy skills such as book handling, print awareness, and increasing vocabulary.

The majority of parents in this study complied with filling out the reading logs, however, 46% of parents did not log that they were reading to their children at home. Information from the 25 participants who completed the summer survey showed that most families reported reading for an average of 30 minutes during a reading session, which matched what was reported on the literacy logs. While this could be what was happening in the home, it is important to note that both the survey and the reading logs were self-reported measures, which means that there was room for parents to report what they deemed was socially acceptable (Bus et. al, 1995; Fiske, 1987; Bracken & Fischel, 2008). Factors that can affect the home environment such as sex of the child, race/ethnicity, or the language spoken in the family home did not appear to impact whether or not families completed literacy logs. Age, however, was a statistically significant contributor to whether or not families completed literacy logs at home. This could prove to be beneficial in that younger children are experiencing more parental interaction, which could form long lasting habits as the children get older.

Emergent Literacy and Low SES

Reading is not a naturally developing skill and is required to be taught through explicit instruction during the early school years; however, a strong foundation in emergent literacy skills must be laid before a child begins kindergarten (Lyon, 1998; McCardle et al., 2001). Shared book reading is an integral component of emergent literacy and teaches children that print serves a purpose within society, develop phonemic awareness, and alphabet knowledge (Terrell & Watson, 2018; Justice & Ezell, 2004). To increase reading taking place in the home, Head Start introduced mandatory reading logs in the spring of 2019 and to carryover reading into the summer break, the researcher implemented summer reading logs and hosted library events at the public library. In this study, 46% of parents did not complete mandatory literacy logs in the spring of 2019, which supports research by Hix-Small (2017) in that children living in poverty are at risk to receive less parent interaction. However, it should also be taken into consideration that children who did not complete reading logs had higher PPVT-4 standard scores in the fall of 2018 and spring of 2019 when compared to children who did not, suggesting that perhaps parents were reading or interacting with their children despite not recording it on the literacy logs.

While the over half of the parents of participants in this study were compliant with completing reading logs given out during the school year, parents did not complete reading logs over the summer, attend summer reading events hosted by the researcher at the public library, or complete a survey that was sent out electronically. When reading events or tasks were suggested but not mandatory, participation was at 0%; however, when reading tasks were made mandatory by Head Start during the school calendar as opposed to the summer, participation rates rose to 54%.

School Readiness and Head Start

Entering kindergarten with an adequate set of school readiness skills ensures children have tools necessary to learn foundational reading and math skills (Scarborough, 2001). Children who enter kindergarten with weak verbal ability and literacy knowledge are at higher risk for having trouble when learning to read (Scarborough, 2001). Children in this study began preschool at Head Start with an average score of 91.8, while still within average, it is 9 points below the mean. After a year of education at Head Start, the average PPVT-4 score of 100.7, a 9 standard score point increase. This information shows that the education Head Start has a statistically significant impact on student's vocabulary scores.

Participants in the non-complier group began the school year with a standard score of 57.2, which while not statistically significant, it was higher than the standard score of those in the complier group, who had a SS of 51.7. This trend continued into the spring 2019 standard scores with the non-compliers maintaining a higher score than those who completed reading logs in the spring 2019 semester. While this data does not support the hypothesis that children who complete reading logs will have a greater increase in PPVT-4 scores, it does emphasize the overall impact that Head Start is making on children's vocabulary scores. Despite what the children are doing at home, what they were getting at Head Start centers seemed to make a significant difference on vocabulary growth.

It is important to also note that vocabulary is not the only skill to test for when identifying the benefit of reading. Phonemic awareness skills, letter recognition, and physical skills such as holding a book, turning the pages, and identifying print are crucial emergent literacy skills that were not assessed in this study. None of these skills were assessed in the current study. Additionally, children who did not complete literacy logs in the non-complier

group might have been receiving parent-child interaction at home as well, just not completing the reading logs.

Summer Set Back and Summer Reading Programs

Summer reading setbacks occur every year when schools go without formal education during the summer months (McDaniel, et al., 2017; Allington, et al., 2010). This setback can be detrimental to children from low SES homes with reading skills that are below average (McDaniel, et al., 2017; Gao, et al. 2016). To decrease factors that exacerbate the summer learning loss in children from low SES, the researcher implemented a summer reading program for children enrolled in Head Start preschools that included completing summer reading logs and turning them in monthly, two library days for families taking place on Saturday afternoons in the summer of 2019, and parent education to emphasize the importance of reading at home. No families participated in the summer reading activities.

Due to no participation in the summer reading program, the Perception of Summer Literacy survey was utilized to determine the reading activities taking place at home over the summer. Parents reported literacy behaviors during the summer, including reading frequency and time spent during each reading session, was consistent with what families reported on the spring reading logs that went home during the school year. It is possible that families involved in Head Start are educated on the importance of a good home environment and this naturally generalizes to the home even when Head Start is not in session. However, since both the report and the literacy logs are self-report measures, it must be taken into consideration that in both instances, the parents are reporting what they believe is socially acceptable or expected of them by Head Start.

Limitations

There were many limitations that should be considered in this study. Due to one of the public school districts in this county opening up a free pre-k program, many children not attending the Head Start program for a second year, which resulted in only 25 children returning for the 2019-2020 school year out of the 135 students who were enrolled the previous year. This resulted in. Only 25 students returning, thus, a repeated measures ANOVA was unable to be obtained to determine if there were significant differences in the loss of vocabulary over the summer in those who self-reported more time spent reading during the summer and those who did not.

Following Head Start's procedures, only form A of the PPVT-4 was administered for all children at both fall and spring testing. This may have resulted in students learning the test and possibly inflating the standard score increases. Choosing the PPVT-4 as the only measure of emergent literacy skills was a limitation in itself in that vocabulary does not encompass a child's full range of emergent literacy skills. The Perception of Summer Literacy survey also posed as a limitation in this study, as it did not ask parents questions that gave information on their child's emergent literacy skills and instead focused more on the home environment. Asking questions specific to their child's ability to name letters, write and draw, and produce rhyming words would give better indication of the emergent literacy skills the Head Start children possessed.

Future Directions

Future studies should consider creating a comprehensive exam or checklist to determine a variety of age appropriate emergent literacy skills students should possess instead of relying on a basic test of vocabulary. Increasing the sample size by including Head Start centers from multiple counties instead of just one county would also be beneficial to determine the effect that

Head Start programs have on the emergent literacy skills of Head Start students. Finally, following a group of Head Start students into kindergarten would be beneficial to see the long-term impacts that Head Start has on student's educational outcomes.

Since non-compliers had higher PPVT-4 standard scores than compliers at pre and post literacy log testing, it would be interesting to see the parent's feelings towards the literacy logs. For instance, did having reading logs to complete make them more likely to complete a reading activity at home, increased the amount of time spent reading, or establish good habits for reading. Or, did the logs make them resentful of the extra work of writing down when and what they read or if reading was an already established routine that took place in their homes.

Having a participant group from high SES homes to compare to the Head Start group would have been beneficial in determining if there were significant differences between standard scores at the start and end of academic year, differences in the gains made throughout a school year, and looking for differences on the information reported on literacy logs and the Perception of Summer Literacy. This could have led to additional information to provide to the literature in determining differences in school readiness skills and home environment in children from low SES homes compared to those from high SES homes.

Due to the limited number of returning students and no participation during the attempted summer reading program, information on reducing the summer reading setback was limited. To better determine the impact a summer reading program could have on Head Start pre-k programs, Head Start could implement a mandatory summer reading program for students. Making participation a requirement was a key component in getting families to participate during this study. A trial summer reading program required by Head Start would be beneficial to determine if the summer learning setback could be reduced.

Conclusions

This study found that completing literacy logs did not lead to statistically significant difference on vocabulary gains made throughout the school year. However, since compliers were statistically significantly younger, it could be that completing literacy logs allows for more parental involvement. It also determined that families reported summer literacy activities remained occurring at about the same rate as they did during the school year. However, despite literacy logs and the home environment not greatly impacting PPVT-4 scores, students who attended Head Start programs demonstrated significant gains in vocabulary as measured by PPVT-4 scores. This shows that providing children with stimulating preschool care can greatly improve their school readiness skills, specifically vocabulary skills, prior to entering kindergarten.

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Appendix A



To: Lisa Bowers
 ECHP 266
From: Douglas James Adams, Chair
 IRB Committee
Date: 09/04/2019
Action: **Expedited Approval**
Action Date: 09/04/2019
Protocol #: 1903182592
Study Title: Summer Reading Experiences of Children who Attend Head Start Programs
Expiration Date: 05/13/2020
Last Approval Date:

The above-referenced protocol has been approved following expedited review by the IRB Committee that oversees research with human subjects.

If the research involves collaboration with another institution then the research cannot commence until the Committee receives written notification of approval from the collaborating institution's IRB.

It is the Principal Investigator's responsibility to obtain review and continued approval before the expiration date.

Protocols are approved for a maximum period of one year. You may not continue any research activity beyond the expiration date without Committee approval. Please submit continuation requests early enough to allow sufficient time for review. Failure to receive approval for continuation before the expiration date will result in the automatic suspension of the approval of this protocol. Information collected following suspension is unapproved research and cannot be reported or published as research data. If you do not wish continued approval, please notify the Committee of the study closure.

Adverse Events: Any serious or unexpected adverse event must be reported to the IRB Committee within 48 hours. All other adverse events should be reported within 10 working days.

Amendments: If you wish to change any aspect of this study, such as the procedures, the consent forms, study personnel, or number of participants, please submit an amendment to the IRB. All changes must be approved by the IRB Committee before they can be initiated.

You must maintain a research file for at least 3 years after completion of the study. This file should include all correspondence with the IRB Committee, original signed consent forms, and study data.

cc: Madilyn E. Littlefield, Investigator