

THE RELATIONSHIP BETWEEN  
HALF- AND FULL-DAY PREKINDERGARTEN  
AND SOCIAL AND PERSONAL SCHOOL READINESS

By

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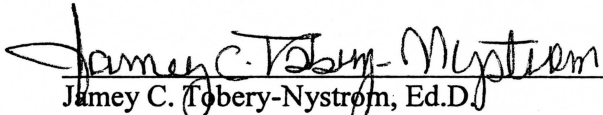
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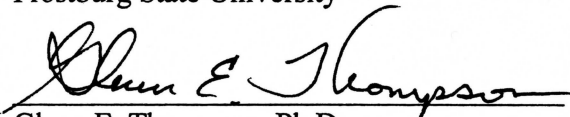
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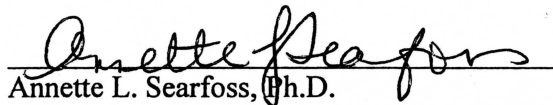
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## **Abstract**

### **THE RELATIONSHIP BETWEEN HALF- AND FULL-DAY PREKINDERGARTEN AND SOCIAL AND PERSONAL SCHOOL READINESS**

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This correlational study examined the relationships among half-day and full-day public prekindergarten participation and the attainment of social and personal skills, evidenced by the Maryland Model for School Readiness assessment. The chi square test for association was used to test the correlation between the variables and the subgroups of ethnicity (Hispanic), race (Caucasian and African American), and socioeconomic status. A statistically significant correlation emerged; therefore the data were further analyzed using Cramer's V to determine the effect size of the correlation.

This study included seven Maryland counties that offered both half-day and full-day public prekindergarten in the 2011–2012 year. Of those prekindergarten students, data were collected from a sample of 3,538 students who participated in either half-day or full-day public prekindergarten. The public extant data were arrayed in the aggregate and then disaggregated by ethnicity, race, and socioeconomic status. Data revealed a statistically significant correlation between half-day and full-day prekindergarten and the attainment of social- and personal-readiness skills. Findings indicated a higher percentage of participants in half-day public prekindergarten programs demonstrated readiness in social and personal skills over those participating in full-day public prekindergarten programs.

*Keywords:* Duration, prekindergarten, readiness, Maryland Model for School Readiness, social and personal development

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## **Chapter 1 – Introduction**

The State of Maryland defines prekindergarten as a state-funded program intended for children who are 4 years old and have families that are economically disadvantaged or homeless (Maryland State Department of Education [MSDE], 2015a). Local Maryland school systems develop their own policies and procedures to implement these programs in accordance with state regulations. Under these regulations, a prekindergarten site typically operates a morning and afternoon session 5 days a week for a minimum of 2.5 hours daily per session, consistent with the local school system calendar (MSDE, 2015a). Additionally, some school systems choose to offer full-day access for 4-year-old children through local or grant-funded resources (MSDE, 2014b). Full-day programs operate prekindergarten 5 days a week for a 6-hour school day. Local education agencies differ in the number of prekindergarten programs and in duration of time. With the implementation of state and federal prekindergarten expansion grants, school systems are beginning to scrutinize which type of programming produces the best results.

The United States prekindergarten movement trails a number of other countries in enrollment, investment, and quality (Herman, Post, & O'Halloran, 2013). According to the Organisation for Economic Co-operation and Development (OECD), the United States ranks in the bottom third of developed countries in early childhood education (Herman et al., 2013; OECD, 2012). Prekindergarten programs in the United States are dissimilar and differ in a multitude of program attributes (Clifford, Bryant, & Early, 2005).

At the age of 4, the cognitive palate of children relative to social and personal attainment revolves significantly around family and self. In a very short time, those

children will be thrust into a world where they will be expected to learn from directed play, and to do so with a group of others their same age. Few studies examined the correlation between half-day and full-day prekindergarten programs and kindergarten on social and personal school readiness. According to the MSDE, “A child expresses healthy social and personal functioning through respectful interpersonal relationships, responsible actions, accountability for those actions, and motivated learning” (2009, p. 14). The purpose of this research was to ascertain if a correlation exists between participation in half-day and full-day public prekindergarten and participants’ social and personal school-readiness scores, evidenced by the Maryland Model for School Readiness (MMSR).

Researchers indicated that 60% of kindergarten students demonstrate cognitive readiness for school, yet only 40% demonstrate the necessary social-foundation skills to be successful in kindergarten (Committee on Integrating the Science of Early Childhood Development, 2000; Jones, Greenberg, & Crowley, 2015; Pistulka, 2004). Social-foundation skills include social and emotional approaches toward learning and executive-functioning skills. Most recently defined, executive-functioning skills are the mental processes that enable children to plan, focus attention, remember instructions, and handle multiple tasks successfully (Center on the Developing Child, 2015). According to the Committee on Integrating the Science of Early Childhood Development (2000), these social-foundational skills are predictors of further academic success.

Kindergarten teachers report that many students are not socially prepared for school. Kindergarten teachers rate about 20% of all entering kindergarten students and 30% of low-income students entering kindergarten as having poor social development (Child Trends, 2003; Rimm-Kaufman, Pianta, & Cox, 2000). Despite the research, debates continue about what makes a prekindergarten program effective (Barnett,

Epstein, Friedman, Boyd, & Hustedt, 2008; Burchinal et al., 2008; Gormley & Gayer, 2005; Mashburn & Pianta, 2006; Mashburn et al., 2008).

This study attempts to add to the body of knowledge about the efficacy of full-day versus half-day prekindergarten programs on readiness in the areas of social and personal attainment. Additionally, an investigation occurred across subgroups of race, (African American and Caucasian), ethnicity (Hispanic), and students identified as receiving or not receiving free and reduced-price meals (FARMS). Students with disabilities were not included in this study due to discrepancies in the multitude of differences between service hours and number of days per week participants attended prekindergarten.

### **Statement of the Problem**

Research has supported the benefit of social and personal development for a child may be substantially reduced if the child only experiences a prekindergarten program for a short amount of time during the day. For example, Zigler, Gilliam, and Barnett wrote, “decision makers expect a small dose to produce huge benefits” (2011, p. 137). Children entering school are more prepared academically than they are socially, yet their social skills are stronger indicators for future success than their academic preparedness (Committee on Integrating the Science of Early Childhood Development, 2000). Currently, there is limited research examining the duration of time spent in a prekindergarten program. There is also limited research on the social and personal development readiness for kindergarten. This study adds to the research considering the length of the prekindergarten program day on children’s social and personal readiness for school at the kindergarten level.

When those in the field of early learning begin making decisions regarding the funding of prekindergarten programs, it is imperative those decisions be informed by

research. With limited resources, it is vital to be as efficient as possible with funds. Those invested in early learning are often attentive to the cognitive gains students make. Yet, cognitive development may well rest on social and personal development, because learning is often sporadic and explosive at this young age. At this level, learning is often influenced by how students feel and what is happening to them at a particular moment (Pianta & Howes, 2009).

A need existed for additional research to address the effect of the length of the school day on the attainment of essential social and personal skills for school readiness if decision makers are to feel confident about the choices they must make. Factors that could add greatly to the body of knowledge on the subject are considerations of how the influences of race, ethnicity, and socioeconomic status correlate when examining the length of the school day on the attainment of social and personal skills.

### **Purpose and Rationale of the Study**

The purpose of this study was to examine the correlation between participation in half-day and full-day public prekindergarten and participants' social and personal school-readiness scores, as evidenced by the MMSR. In Maryland, prekindergarten is a state-funded program intended for children who are 4 years old and who are from families that are economically disadvantaged or homeless (MSDE, 2015a). Under state regulations, a prekindergarten half-day site typically operates a morning and an afternoon session 5 days a week for a minimum of 2.5 hours daily per session, consistent with the local school system calendar (MSDE, 2015a). Full-day programs operate prekindergarten 5 days a week for a 6-hour school day.

The researcher arrayed the results of the study in the aggregate and additionally disaggregated them by ethnicity, race, and socioeconomic status to determine if there was

a correlation between school readiness and length of time spent in a public prekindergarten program (MSDE, 2009). Data from the MMSR assessment was the construct used to determine if a correlation existed between half-day and full-day participation and social and personal school readiness. This assessment is a framework designed to define what children should know and be able to do by the time they enter kindergarten (MSDE, 2009). The researcher collected data from the social and personal domains of the assessment. The Committee for Integrating the Science of Early Childhood Development (2000) purported that successful social skills lead to further academic success.

For school systems, politicians, community members, and other interested stakeholders, determining the most appropriate duration of programming for successful social-skills attainment may be a factor in the implementation of additional prekindergarten programs. Providing the necessary resource allocation for school systems to extend half-day programs to full-day programs will be an additional consideration when the length of time students spend in prekindergarten programs is deliberated. Therefore, school systems would do well to collect data that demonstrates the impact the duration of the prekindergarten program has on social and personal school readiness.

### **Significance of Study**

According to the available research, children's emotional and social skills are linked to early academic achievement (Collett, 2013; Ladd, Kochenderfer, & Coleman, 1997; O'Neil, Welsh, Parke, Wang, & Strand, 1997). In addition to academic achievement, "Across hundreds of studies of immediate and short-term outcomes, impacts of early education on factors such as self-esteem, motivation, and social behavior are positive, and range from .25 to .40 of a standard deviation—a meaningful impact"

(Boyd, Barnett, Bodrova, Leong, & Gomby, 2005, p. 6). The studies referenced provided a variety of resources for participants, ranging from infants to school-aged children, and primarily focused on low-income, African American and Hispanic subgroups. Through the examination of various studies across the United States and internationally, researchers concluded that the more time children spent in preschool, the more social benefits they enjoyed (Boyd et al., 2005). The current study adds to the existing body of knowledge about which length of time—half-day or full-day prekindergarten—correlates with higher social and personal skill attainment.

### **Theoretical Framework**

Vygotsky's (1978) theory of human, cultural, and biosocial development speaks to the necessity for students to interact in social and in academic situations in their early educational careers. Vygotsky emphasized social factors as a means of cognitive development and lifelong learning (Moll, 2014). "The development of thinking occurs in every day experiences that children have in their interactions with more experienced members of their cultural community" (Gauvain & Cole, 2004, p. 34).

In 1977, Bandura proposed social-learning theory. Similar to Vygotsky's (1978) theory, Bandura capitalized on the interactions of children with peers, parents, and childcare providers. According to social-learning theory, children learn new behaviors from observing other people. To learn, the observational steps that must take place involve attention, retention, reproduction, and motivation (Bandura, 1977). This theory has had important implications in the field of education and early learning. Parents and teachers acknowledge the importance of exemplifying the behaviors they wish children to replicate. The ability for children to participate in programs designed to adequately allow for these opportunities is crucial (Cherry, 2015).

## **Research Design Overview**

The research design of this study used chi square test for association to discover if a correlation existed between social- and personal-development skills of kindergarten students who participated in half-day or full-day public prekindergarten programs in seven Maryland school systems. Each school system included in this study offered half-day and full-day prekindergarten sessions. This investigation examined overall scores of kindergarten school readiness in the domain of Social and Personal Development using the MMSR, and compared those scores based on the length of day of a child's prekindergarten experience (MSDE, 2009). Subgroups addressed included ethnicity (Hispanic), race (Caucasian and African American), and students identified as receiving or not receiving FARMS.

The researcher collected extant data from MSDE (2014a) to determine if a correlation existed between social- and personal-development skills of kindergarten students who participated in half-day or full-day prekindergarten. The sample consisted of data from seven Maryland counties that were a portion of the total Maryland kindergarten population of 67,519. These counties were included in this study, because they featured the commonalities of offering access to half-day and full-day prekindergarten programs and participants participated 5 days a week. The researcher collected a convenience sample from a data set of 11,606 students, designated as participants in half or full-day public prekindergarten, which encompassed 3,538 participants.

## **Research Question**

The question that guided this study was, Is there a correlation between social and personal kindergarten readiness and the duration of the prekindergarten program? The

researcher addressed this question further by determining if a correlation existed between half-day or full-day prekindergarten participation and social and personal school readiness when examining the subgroups of race (African American, Caucasian), ethnicity (Hispanic), and students identified as receiving or not receiving FARMS.

### **Assumptions**

The following assumptions were made:

1. Schools followed Maryland eligibility requirements for prekindergarten and kindergarten enrollment. Maryland regulations stipulate that prekindergarten enrollment is based initially on age and income eligibility, followed by a preference for students demonstrating lack of readiness skills (Md. Code Ann., 2014).
2. Those administering the MMSR were appropriately trained to administer and record the data (MSDE, 2009).
3. Data inputted regarding prior participation in half- or full-day public prekindergarten was accurately recorded.

### **Limitations**

The full acquisition of social- and personal-development skills is often not observable until later in life. A longitudinal study would result in the collection of more data to support the research question. However, the collection of extant data for this study involved 1 school year across seven Maryland counties. As public prekindergarten continues to expand and develop, collecting data for 1 year enhanced consistency in sample size and in employing the instrument used to determine readiness.

Groups participating in half-day public prekindergarten and full-day public prekindergarten were intact groups. This aspect could lead to a threat to the internal

validity of the study. It was not possible to control for experiences each group may have had prior to their participation in school.

The State of Maryland does not require that all prekindergarten programs to use the same curriculum. Due to data collection across counties, the ability to control for the implementation of a similar prekindergarten curriculum was not possible. This uncontrolled variable could have impacted the study. Similarly, the quality of teaching was not the subject of this study. However, teacher effectiveness is often used to measure effectiveness of prekindergarten programs, demonstrated by the use of state-certified teachers in the High/Scope Perry Preschool Program and Chicago Child-Parent Centers (U.S. Department of Health, Education, and Welfare, 1969; Zigler et al., 2011).

### **Delimitations**

Of the 24 counties in the State of Maryland, during the 2012–2013 school year, eight of those counties offered half-day and full-day prekindergarten programs. The researcher chose a sample from this population, however, the researcher eliminated one county because it was configured with a 4-day school week rather than a 5-day school week. In an effort to control for that variable, the researcher chose to eliminate that county, and only included counties in which prekindergarten students attended 5 days a week.

The researcher chose MMSR data from 2013–2014 for data collection (MSDE, 2009), as that was the final and most recent administration of the MMSR. Previous longitudinal MMSR data were available, but the researcher chose 1 year in an effort to control for programs that were in operation 5 days a week and included half-day and full-day programming. Some of these counties demonstrated differences in duration and access in previous years (MSDE, 2011, 2013, 2014b).

A final delimitation to this study related to the overwhelming amount of current research in the area of early learning. This topic is a current educational focus, so additional new information became available during this investigation. Any updated or new findings from research that became available through the course of this study were retrospectively included in the appropriate chapters.

## **Definitions**

*Ethnicity*: A social group that shares a common and distinctive culture, religion, language, or the like (“Ethnicity”, 2015).

*Free and reduced-price meals (FARMS)*: Services funded by meeting income eligibility guidelines of the U.S. Department of Agriculture (Michie’s Annotated Code of Maryland, 2014).

*Full-day prekindergarten*: A school day consisting of a minimum of 6 hours of instruction and aligning with the local school system calendar (MSDE, 2015b).

*Half-day prekindergarten*: A school day consisting of a minimum of 2.5 hours of instruction and aligning with the local school system calendar (MSDE, 2015b).

*Maryland Model for School Readiness*: The MMSR is an assessment and instructional system designed to provide parents, teachers, and early childhood providers with a common understanding of what children know and are able to do upon entering school (MSDE, 2009).

*Prekindergarten*: The MSDE defines prekindergarten as a program designed to educate students who turn 4 years old on or before September 1. Eligibility for enrollment accrues to students who come from economically disadvantaged backgrounds or who are homeless (MSDE, 2015a).

*Race*: An arbitrary classification of modern humans, sometimes, especially

formerly, based on any or a combination of various physical characteristics, as skin color, facial form, or eye shape, and now frequently based on such genetic markers as blood groups (“Race”, 2015). In this dissertation study, race is determined through parent identification on enrollment documents.

*School readiness:* The MSDE (2009) defined school readiness as the stage of human development that enables a child to engage in and benefit from early learning experiences. As a result of family support and relationships with friends and members of the community, a young child reaches certain levels of physical well-being and motor development, acquired social and personal capabilities, and attained language and comprehension skills, coupled with general knowledge. School readiness acknowledges individual approaches toward learning as well as the unique experiences and backgrounds of each child that help children enter school ready to learn (MSDE, 2009).

*Social and personal development:* Personal development is a complex process involving range and intensity of emotional reactions, perception of emotions in self and others, and behavioral expressions of emotions. Social development is an ongoing process of skill acquisition and mastery involving cognition, language, emotions, and perception. (MSDE, 2009)

### **Organization of the Study**

Following this introductory chapter, the remaining study was organized into four additional chapters. Chapter 2 presents a review of the related literature pertaining to the research on social and personal development of prekindergarten students. A review of the literature includes an overview of the essential research that supports the study. Chapter 3 addresses the research design and methodologies of the study. Chapter 4 contains an analysis of the data and a discussion of the findings related to that analysis. The

concluding Chapter 5 contains a summary, conclusion, and recommendation for future studies. References and appendices follow the five chapters.

## **Summary**

This study compared half-day and full-day public prekindergarten and MMSR scores in the Social and Personal domain disaggregated by ethnicity, race, and socioeconomic status. The purpose of the comparison was to examine the correlation between participation in half-day and full-day public prekindergarten and participants' social and personal school-readiness scores, as evidenced by the MMSR (MSDE, 2009). Few studies compared progress in the dimensions of social and emotional development of students in full-day and half-day programs. However, with parent work schedules and increased demands in K–12 standards, policymakers prompted greater interest in full-day prekindergarten programming, leading to the significance of the present research (Center for Public Education, 2007; Pianta & Howes, 2009). This study further informs policymakers and those in the field of early childhood education and adds to the body of research encompassing early childhood education.

## **Chapter 2 – Review of Literature**

### **Introduction**

Although many politicians and school systems work to create successful strategic plans for the implementation of exemplar prekindergarten programs, the debates surrounding prekindergarten structure may cause school systems to question how to best ensure successful execution (Zigler et al., 2011). This topic has “transformed from a soft social policy topic to a key economic development strategy and has moved from relative obscurity to a leading election issue” (Zigler et al., 2011, p. 18). The surge in popularity of prekindergarten has also punctuated the increased inconsistency in programming across countries, states, and local education agencies. Rolnick and Grunewald (2003) purported, “A targeted approach achieves a higher rate of return than a universal approach because low-income children begin at a lower baseline than children from higher-income families” (p. 23). Yet Barnett (2008) argued that providing preschool to all students would allow school systems to reach a significantly greater percentage of poor children, produce larger educational gains for disadvantaged populations, increase school readiness for all students, and yield larger net economic benefits

Guided by research that shows most brain connectivity happens in the first 5 years of life, education experts have been exploring how to help children off to a better start (Hirsh-Pasek, Golinkoff, & Eyer, 2003; Falk, 2012). France, as well as other countries where almost all 3- and 4-year-old children participate in high-quality preschool, is beginning to show gains over the United States in efforts to educate their youngest learners (Lerner, 2012). France has a national curriculum that begins at the age of 2 and continues through a child’s educational experience. Programs comprise half-day and full-day prekindergarten, and children often attend 4 days per week. Additionally early

childhood teachers in France must possess a bachelor's degree in another field, prior to studying education (Hurless, 2004).

In 1992, France took a sample of 1,900 students and analyzed the achievement and equity effects of starting preschool at the age of 2. Results indicated that preschoolers who entered school at the age of 2 gained .29 standard deviation in language competence over those who entered at the age of 5, and similar results emerged for mathematics (Burger, 2013). In the United States, the discussion of student dropout rates and adequate student preparation for college or for careers rings loudly enough to force dialogue about how and when educators begin to teach young children.

One key inconsistency of early childhood education involves the duration of the prekindergarten program. Inconsistencies include the number of days a week students attend, how many hours of daily attendance constitute the school day, and the length of the school year. The duration of the prekindergarten day makes a difference in the number of students who have access to this noncompulsory program, and may be a consideration for cost-effectiveness when determining program implementation. Varying opinions oscillate on the duration of the school day and school year as they influence school funding. "Although public schools could extend their hours, many cash-strapped districts would likely balk at any unfunded public policy mandates, and as such it will be critical to identify new revenue sources for public preschool" (McCartney, Burchinal, & Grindal, 2011, p. 119).

When a school system extends two half-day sessions to a full-day session, unless an additional classroom teacher and classroom space are added, the numbers drop to serving 20 students rather than the original 40 students. The majority of state prekindergarten programs are only in operation on a half-day schedule (Barnett, Carolan,

Squires, & Brown, 2013). In 2013, only 11 states required prekindergarten to operate more than 2.5 hours per day; 23 states set duration requirements at 2.5 hours per day, one state offered extended day, and the remaining 18 allowed for local determination in the length of the instructional day (National Institute for Early Education Research [NIEER], 2013). Under the theoretical framework of Vygotsky and Bandura, the history, benefits, and attributes of prekindergarten amalgamate to create an enhanced picture of how these ideas relate to the necessary social and personal gains of a student. In those same frameworks, the researcher examined the duration of the school day. Following is a more comprehensive discussion of the theoretical framework of this study.

### **Theoretical Framework and Brain Research**

Vygotsky emphasized social factors as a means of cognitive development and lifelong learning (Moll, 2014), hypothesizing that “the development of thinking occurs in every day experiences that children have particularly in their interactions with more experienced members of their cultural community” (Gauvain & Cole, 2004, p. 34). The one type of social interaction most likely to promote cognitive development occurs in the zone of proximal development (Moll, 2014). It is in this zone that a learner, with the assistance of peers and adults, uses their own knowledge to solve problems. This theory speaks to the necessity for students to interact in social and academic situations in their early educational careers. Vygotsky’s theory of understanding the world through problem solving and interactions with adults and other children allows children to cognitively advance in their understanding of the world (Agbenyega, 2009).

Bandura’s (1977) social-learning theory is similar to that of Vygotsky, capitalizing on the interactions of children with peers, parents, and childcare providers. According to social-learning theory, children learn new behaviors from observing other

people. Unlike other theorists, Bandura believed that reinforcement of behaviors was both intrinsic and extrinsic, resulting from observing others in multiple circumstances. Most human behavior is observationally learned through modeling. From observing others, one forms an idea of how to perform new behaviors, and on later occasions, this coded information guides action. To learn, the observational steps that must take place involve attention, retention, reproduction, and motivation (Bandura, 1977). This theory has had important implications in the field of education and early learning, providing a rationale for modeling behaviors and values for children.

Other researchers gained considerable attention for their work by proposing a lineage from children's physical and social environments to their developing brains and behaviors (Knudsen, Heckman, Cameron, & Shonkoff, 2006; McEwen, 2012). Some researchers indicated that the quality of early social interactions and the childhood environment influences brain circuits (Knudsen et al., 2006). Two important ways environmental influences become manifest in thinking and behavior are through language and executive function. According to The Center on the Developing Child (2015), executive-function skills are the mental processes that enable one to plan, focus attention, remember instructions, and handle multiple tasks successfully. "Executive functions have been shown to correspond more strongly with school readiness than intelligence quotient or entry-level reading or math skills" (Sripada, 2012, p. 122). The research on brain development and the evolution of early education in social and personal outcomes should work in concert when creating policy recommendations.

According to Knudsen et al., the quality of early social interactions and environment influence the shaping of high-level brain circuits (2006). "Learning takes place throughout life; yet the brain is most sensitive to experiences early on, both positive

and negative” (Sripada, 2012, p. 121). The brain is built from billions of specialized nerve cells called neurons and glial cells. “As young children interact with the world around them, their experiences shape connections among neurons following a well-described pattern of proliferation followed by selective pruning (‘use it or lose it’)” (Falk, 2012, p. 11). The brain is particularly responsive to experiences in early childhood (Falk, 2012). Emotional development intertwines with cognitive abilities and physical well-being (Damasio, 1984; Hinton, Miyamoto, & Della-Chiesa, 2008). The ability to regulate this emotion is a predictor of further academic outcomes (OECD, 2007). As young children continue to grow and interact with their surroundings, the numbers of connections or synapses gradually diminish as experiences sculpt a young child’s brain to fit the needs of the child’s environment, allowing for the creation of the necessary foundation for later learning and health (Falk, 2012).

Vygotsky (1978) and Bandura (1977) recognized the need for an appropriate environment. Bandura advanced concepts demonstrating connections between human behavior, environmental factors, and personal factors (as cited in Falk, 2012). Vygotsky documented a range or zone of tasks the child cannot handle alone but can accomplish with the help of more skilled partners or teachers: “Children do not passively wait for us to fill their brains” (Hirsh-Pasek et al., 2003, p. 249). Prekindergarten then, is an opportunistic time for children to learn executive-function skills through interactions with same-age peers and adults in a structured setting; determining the best duration to acquire these skills is essential.

### **The History of Early Childhood Education**

As far back as the 4th Century B.C.E., Plato suggested that the state care for and educate children from birth through adulthood. Plato recommended that the state offer

children, aged 3 to 6, these opportunities as a healthful means for young minds and bodies to grow (Palmer, 1966). Scholars such as Comenius, Locke, and Pestalozzi further proclaimed the importance of the first years of life (Spring, 2011). Pestalozzi, similar to Vygotsky and Bandura, was a pioneer in the beginning of the early childhood movement and believed that learning should result from experiences (Bandura, 1977; Gauvain & Cole, 2004; Spring, 2011).

Attention to early learning migrated from Europe to the United States as early colonists began to configure their communities and economic systems. As inaugural colonists began to populate the United States, families accessed available schools for even their very young children (Spring, 2011). The focus was on building an educational community that promoted social, political, and spiritual attainment. “Interestingly, in 1826, five percent of all children enrolled in public school were below four years of age” (Sparagana, 2007, p. 18). Schurz opened the first structured kindergarten as a private, full-day class in Schurz’s home in 1857 (Lee, Burkam, Ready, Honigman, & Meisels, 2006).

In the 20th Century, additional educational theorists and teachers shared the idea of equal access to learning for the very young.

The nursery-school, if it became universal, could in one generation remove the profound differences in education which at present divide the classes, could produce a population all enjoying the mental and physical development which is now confined to the most fortunate, and could remove the terrible dead-weight of disease and stupidity and malevolence which now makes progress so difficult. (Russell, 1926, p. 150)

Until the middle of the 1960s, the education of prekindergarten students in the

United States existed mainly as a private enterprise, characterized by programs varying greatly in quality (Palmer, 1966). A poll in 1954 showed that 67% of school administrators rejected the idea of prekindergarten classes maintained by the local public school systems (Palmer, 1966). Shortly thereafter, U.S. policymakers became acutely aware of the devastating social effects and economic drain of poverty in the country. During that time, stakeholders believed that “education could reduce social class divisions and eliminate poverty” (Spring, 2011, p. 371). Hence, the education of those in poverty was at the heart of President Johnson’s Great Society Movement, and the federal government soon became involved with the expansion of prekindergarten and Project Head Start (Blank, 2010). Although this expansion was mainly based on an effort to serve children of poverty, additional circumstances added to the greater need for prekindergarten programs. The emergence of women in the workplace continued to increase the need for prekindergarten programs for not just those who were income-eligible, but for all children who were under compulsory school age (Zigler et al., 2011). “With the rise in maternal employment, absenteeism and job turnover quickly became significant problems in the workplace” (Cahan, 1989, p. 28). Approximately 20% of all female absenteeism was due to the need to supervise infant and school-age youngsters. The progression toward appropriate accessible preschool was foreseeable (Chafe, 1972).

Although only 10 states had prekindergarten programs prior to 1980, many other states recognized that Head Start lacked sufficient funding to enroll a majority of low-income preschool children (Gilliam & Zigler, 2004). Therefore, states began to envision methods to better serve their prekindergarten students. By 1991, 28 states had prekindergarten programs, and by 2005, this number had increased to 38 (Barnett, Hustedt, Robin, & Schulman, 2005). During this time, data emerged, indicating a

necessity for prekindergarten expansion.

Large-scale longitudinal studies began to show positive effects from early childhood educational programs for children from low-income families. A sample of 1,539 Kindergartners in the longitudinal Age 21 Cost-Benefit Analysis of the Title I Chicago Child–Parent Centers study demonstrated that even providing limited treatment, children displayed cognitive gains that persisted into their teenage years (Reynolds, Temple, Robertson, & Mann, 2002a). The study, lasting 11 years, reported effect sizes from 0.21 standard deviation in kindergarten to 0.16 standard deviation in ninth grade (Reynolds, Temple, Robertson, & Mann, 2002b). A regression discontinuity analysis of Oklahoma’s universal preschool also demonstrated gains in children’s letter-word recognition and solving applied problems (Gormley & Gayer, 2005). Finally, the Early Childhood Longitudinal Study, which included 14,162 children, found that children from low-income homes who attended a public preschool center prior to kindergarten gained 0.20 standard deviation in language and prereading skills and 0.22 standard deviation in mathematics concepts, compared with similarly low-income children in another form of care (Loeb, Bridges, Bassok, Fuller, & Rumberger, 2007).

### **Benefits of Prekindergarten**

Studies referenced that contributed to the body of research surrounding prekindergarten are often those from the 1960s and 1970s. The High/Scope Perry Preschool Project, the Abecedarian Project, and the Chicago Child–Parent Centers all provided evidence to support the value of the education of those younger than 5 years. These three studies remain relevant as researchers continue to track progress of the participants (Barnett & Masse, 2007; Campbell & Ramey, 1995; Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002; Center for Public Education, 2007; Clarke

& Campbell, 1998; Ramey & Campbell, 1984; Schweinhart et al., 2005; Schweinhart, Barnes, & Weikart, 1993;).

The High/Scope Perry Preschool Project, situated in Ypsilanti, Michigan, treated five different groups of low-income, low-IQ, African American children between the age of 3 and 5 (Schweinhart et al., 2005). Researchers randomly assigned 58 students to a program group that received a high-quality preschool program at ages 3 and 4, and assigned 65 students to another group that received no preschool program (Schweinhart et al., 2005). Weikart, lead researcher in Perry Preschool, attempted to demonstrate that 3-year-old children from poverty backgrounds could succeed academically (Anderson, 2008). Leading developmental psychologists cautioned that putting impoverished children in an educational setting could harm such children by asking too much of them (Kirp, 2009). Weikart developed a program in which children participated in a treatment program five mornings per week from October to May, and their instructors participated in one home visit per week (Anderson, 2008). Services included 2.5 hours of programming during this testing period. Weikart designed the curriculum to meet the developmental needs of the children and encouraged play to promote problem-solving skills and intellectual development (Duncan & Magnuson, 2013). The child to teacher ratio was low, allowing for about one teacher for every five students. “This staffing made the Perry Program considerably more expensive than the typical public education prekindergarten program. However initial effects on language and general cognitive abilities after two years were impressive” (Barnett, 2008). By the end of the first preschool year, children in the High/Scope Perry Preschool Project outscored their control group by about 13 IQ points. Yet these gains began to fade over time. By the age of 14, results of IQ testing were no longer statistically significant for students who had

participated in the program compared to peers (Besharov, Germanis, Higney, & Call, 2011).

Following the study, conducted from 1962 until 1967, researchers longitudinally tracked students into adulthood. The noncognitive gains of the High/Scope Perry Preschool Program did demonstrate the effectiveness of the program. Results showed that children participating in the study, according to Duncan and Magnuson (2013), demonstrated lasting improvements through the age of 40 in employment rates, criminal records, and welfare participation. Overall, the program group also had a higher “on-time” graduation rate-65% versus 45%. However, no statistically significant findings emerged on a range of behavioral outcomes during childhood and adolescence (Besharov et al., 2011).

A second, often cited, study was the Abecedarian Project. The Abecedarian Project, located in Chapel Hill, North Carolina, was conducted from 1972–1977 and served 58 low-income, mostly African American families with an even more intensive program than that of the Perry School Project (Anderson, 2008; Ramey et al., 1974). The 4-year old children included in this study attended a preschool center for 8 hours per day, 5 days per week, and 50 weeks per year. This concentrated effort included transportation, individualized educational activities, and a low child-to-teacher ratio of 3:1 (Duncan & Magnuson, 2013). In addition to the Carolina Infant Curriculum used as a resource for the experimental group, each child received supplementary services (Ramey et al., 1974). Supplementary services were those to be considered beneficial for a child outside of their academic enrichment. These services included high-quality health care, social services like transportation, and nutritional supplements. Activities focused on social, emotional, and cognitive areas of development (Ramey et al., 1974).

The results of this longitudinal study revealed that 35% of those who attended the Abecedarian Preschools attended a 4-year college, compared to only 14% of those in the comparison group (Wilgoren, 1999). The comparison group, in an effort to control for external variables, received all supplementary services, but did not receive the preschool education (Ramey et al., 1974). Unlike the Perry School Project, this study did not find significant differences in criminal activity between the two groups. Table 1, a result of a comparative analysis of the Abecedarian Project and the High/Scope Perry Preschool Project, demonstrates the extent to which these programs had significance.

In addition to the Abecedarian Project and the High/Scope Perry Preschool Project, The Chicago Child–Parent Center Program began in 1967 with the same goal of offering a comprehensive program to families and children. This program, funded by Title I of the Elementary and Secondary Education Act, was the second oldest publicly funded preschool, holding the distinction of being the most rigorous, long-term study of prekindergarten (Reynolds & Ou, 2011). The program provided low-income children with half-day preschool, kindergarten, and follow-up elementary components. Unlike former studies, the teacher-to-student ratio was much larger with only a teacher and assistant for every 18 children. The Chicago Child–Parent Center contained a strong parent outreach that included parents receiving an education, volunteering in the classroom, attending school events, attending field trips, and receiving additional well-being services (Niles & Peck, 2008). Those serviced through this project were predominantly African American (93%) from the most economically, underprivileged neighborhoods in Chicago (Reynolds & Ou, 2011). Originally, four school sites offered the program serving 120 students at each site. Similar to the Perry study, this half-day program demonstrated positive effects on many outcomes. Notable long-term positive

effects of the program included middle school test scores, reduced arrests for delinquency, reduced special-education labeling, and higher high school graduation rates (Barnett, 2008).

Table 1

*Comparison of Abecedarian and Perry Program Effects*

Outcome	Abecedarian Full-Day		Perry Half-Day	
	Treatment	Control	Treatment	Control
IQ Age 3	101	84	96	83
IQ Age 4.5	101	91	95	84
IQ Age 14/15	95	90	81	81
Reading achievement Age 14/15	94	88		
Mathematics achievement Age 14/15	93	82		
Ever repeated a grade (%)	34	65	15	20
Ever in special education (%)	31	49	37	50
Years in special education (%)	12	18	16	28
High school graduation by Age 19 (%)	67	51	66	45
College attendance (%)	36	13	9	5
Smoking (%)	39	55	42	55

*Note.* Adapted from “Comparative benefit-cost analysis of the Abecedarian program and its policy implications,” by W. S. Barnett and L.N. Masse, 2007, *Economics of Education Review*, 26, p.121. Copyright 2006 by Elsevier Ltd.

Although researchers most often reference studies of the High/Scope Perry Preschool Project, the Abecedarian Preschool Project, and the Chicago Child–Parent Center Programs, additional studies have led to research that supports preschool programs. A mixed-method study conducted in the United Kingdom involving over 3,000 students provided the first evidence of the positive effects of preschool education in that country. Results demonstrated that preschool education would help alleviate the effects of social disadvantage (Siraj-Blatchford, Taggart, Sylva, Sammons, & Melhuish, 2008). Researchers measured the duration of the program in months rather than length of day.

The authors reported that the number of months a child attended preschool had a stronger effect on academic skills than on social and behavioral development (Siraj-Blatchford et al., 2008).

The Abbott Preschool Program, a state-funded program targeting 3- and 4-year-old children in 31 high-poverty districts grew in response to a landmark New Jersey Supreme Court school funding case, *Abbott v. Burke*. This program demonstrated the long-term positive effects of early learning programs on academic skills (Frede, Jung, Barnett, & Figueras, 2009). In this case, covering low-wealth, urban school districts, the court ruled for the direct implementation of a comprehensive set of improvements that included adequate K–12 funding, universal prekindergarten for 3- and 4-year old children, and school-by-school reform of curriculum and instruction (Education Law Center, 2015).

Abbott Preschool Program consisted of a 6-hour, 180-day school year with before- and afterschool care and summer programs. Unlike most former studies, this program served all students in the assigned districts; not merely those who qualified as income eligible. Initial gains were found in language, literacy, and mathematics at kindergarten entry. Significant gains accrued specifically in children who had attended multiple years of preschool. Studying participants at the end of second grade, the effects for 1 year of preschool for language and vocabulary were 0.22 standard deviation, but for 2 years were 0.40 standard deviation (Frede et al., 2009). In addition to the academic achievement gains found from this program, grade retention and special-education-placement rates fell (Barnett & Masse, 2007; Campbell & Ramey, 1995; Campbell et al., 2002; Clarke & Campbell, 1998; Ramey & Campbell, 1984; Schweinhart, Barnes et al., 1993; Schweinhart, Montie et al., 2005). Although educators implemented the Abbott

Preschool program in communities with high percentages of low-income families, researchers espoused that the evidence collected contributed to the benefits of full-day, universal prekindergarten (Frede et al., 2009).

In a more recent study, researchers evaluated the effects of preschool on kindergarten readiness (Reynolds et al., 2014). In this correlational study of full and half-day programs, participants included 982 predominantly low-income, Black and Latino children between the ages of 3 and 4. Children enrolled in full-day programs performed better on tests of kindergarten readiness in six categories, compared to their counterparts. Almost 81% of children in full-day programs performed at or above the national average in four or more categories. However, only 58.7% of children in half-day programs performed at or above average in those same categories. The category assessed by socioeconomic development did not show the same level of significance as other categories. The difference between children in full-day and half-day programs for social-emotional development was a mere 58.6% to 54.5%, respectively (Reynolds et al., 2014).

Additional studies including the Infant Health Development Program, The Michigan Full-Day Preschool Program, and the Tennessee Evaluation of Pre-K have continued to prompt debates on the results of these long-term studies and effects of prekindergarten (Gormley, Gayer, Phillips, & Dawson, 2005; Jurkiewicz & Schweinhart, 2004). Whitehurst, Director of the Brown Center on Education Policy, suggested that “not one of the studies that has suggested long-term positive impacts of center-based early childhood programs has been based on a well-implemented and appropriately analyzed randomized trial” (Barnett, 2014, p. 2). Whitehurst continued, the sample size of the studies, the ethnic selection, and the focus on only low-income children affected the validity of the research. Taking issue with Whitehurst’s comments, Barnett (2014)

stated that Whitehurst failed to accurately compare the studies. “When such studies find lasting differences due to the type of preschool program, from the end of kindergarten to the end of high school, they add to the evidence that high-quality preschool education *per se* has long term effects” (Barnett, 2014, para 5).

A study of a voluntary statewide prekindergarten program in Tennessee, published in 2015, did use a randomized control trial when comparing full-day participants and nonparticipants across the state (Lipsey, Farran, & Hofer, 2015). Results of the study demonstrated that students who participated in the full-day prekindergarten program had significantly higher achievement scores on all six subtests at kindergarten entry (Lipsey et al., 2015). Researchers concluded, “States need guidance beyond what is presently available in order to establish pre-k classrooms that indeed have ‘high-quality’ and positive outcomes” (Lipsey et al., p. 41).

In an analysis of the Perry Preschool Project, the Abecedarian Project, and Head Start, Olsen (1999) also concluded that the results of these studies were flawed. These highly published studies were severely limited by methodological problems, small sample sizes, attrition rates, and infrequent use of random selection and comparison groups (Olsen, 1999). Analysis of those former programs, which exclusively addressed poor children, should not be the only rationale for government-supported preschools (Olsen, 1999).

As researchers continued to question the reliability of the aforementioned studies, these studies reported cognitive and social gains for students accessing prekindergarten programs overall. After more than a decade of research relating to the Tulsa Oklahoma prekindergarten project, Gormley, Phillips, and Gayer (2008) and Lerner (2012) also saw some imperfections in former longitudinal studies, and recognized that those benefits

only appeared to be gained for economically disadvantaged children. Prekindergarten holds consistent benefits for children from low-income families, but students from middle-class and affluent homes did not share the same benefits.

The Early Childhood Longitudinal Study of 14,162 children found that children from low-income homes showed double the standard deviation gains as did their peers from middle-class or affluent homes (Loeb et al., 2007). Garces, Thomas, and Currie (2002) also discovered higher levels of school achievement from Latino and Caucasian students from low-income families with highly educated mothers. In a study in 2002, Gormley began to measure the benefits of prekindergarten for all students. Although the longitudinal results have not been determined, the recent study revealed the gains were among the largest ever documented for universal prekindergarten (Gormley et al., 2008). Students who participated in prekindergarten were up to 9 months ahead of their peers in reading, writing, and mathematics concepts (Gormley et al., 2008).

### **A Focus on Subgroups**

Beyond the early studies, that primarily involved low-income African American students, few studies examined the length of the prekindergarten experience on specific subgroups of students. Studies that exposed the effects of half-day and full-day programming for Caucasian, African American, and Hispanic students, as well as students from low-income families will undoubtedly inform school systems nationwide when initiating or expanding prekindergarten programs. By the time children enter kindergarten, racial and socioeconomic disparities have begun to emerge (Mulligan, Hastedt, & McCarroll, 2012; U.S. Department of Education [USDE], 2015a). A longitudinal study conducted in 2012 found that upon children's first entry into kindergarten, Caucasian students scored higher in reading and mathematics than African

American and Hispanic students (Mulligan et al., 2012; USDE, 2015a). Additionally, the lowest scoring students were from households with incomes below the federal poverty level (Mulligan et al., 2012).

Latinos are the fastest growing and largest minority group in the United States and make up a quarter of 3- and 4-year-old children (U.S. Census Bureau, 2012; USDE, 2015a). According to the USDE, Latino children represent the lowest participation rate in prekindergarten (USDE, 2015a). African Americans participate in prekindergarten at a 50% rate and Caucasian students at a 53% participation rate, compared to 40% for Latinos (USDE, 2015b). Many Latino mothers continue to stay at home to raise their children or report not sending their children because of rather uninviting preschools in their neighborhoods (Fuller & Coll, 2010; Liang, Fuller, & Singer 2002; Zigler et al., 2011).

The rate of participation in preschool for low-income families is also lower (41%) than that of more affluent peers (61%; U.S. Census Bureau, 2012; USDE, 2015a). An Early Childhood Longitudinal Study of 14,162 children found that children from low-income homes who had the opportunity to participate in prekindergarten 1 year prior to kindergarten gained .20 standard deviation in language and prereading skills and .22 standard deviation in math concepts over their nonattending peers (Loeb et al., 2007; Zigler et al., 2011). Proponents of targeted preschool point to many studies that promote the advancement of students from low-income families because of prekindergarten. Annual rates of return, adjusted for inflation, range from 7% to over 20% for many studies that targeted at-risk children (Heckman, Grunewald, & Reynolds, 2006; Karoly et al., 1998; Masse & Barnett, 2002; Reynolds et al., 2002a).

In 2013, a study of more than 900 low-income, minority families concluded that

children who attended full-day prekindergarten scored higher on tests of socioemotional development than those attending for half-day sessions (Reynolds et al., 2014). Scores on literacy and cognitive development were also higher, but researchers did not find them significant (Reynolds et al., 2014). Researchers averred that school success requires socio-emotional and cognitive skills (Conti & Heckman, 2013; Duncan & Magnuson, 2011), “because social interactions, attention, and self-control affect readiness for learning” (Jones et al., 2015, p. 1). Furthering the connection between the importance of early attainment of social skills and learning, Jones et al. (2015) examined African American and Caucasian students from low-socioeconomic neighborhoods in four cities and found significant associations between measured socioemotional skills in kindergarten and adult outcomes across multiple domains of education, employment, criminal activity, substance abuse, and mental health. Results showed that early childhood education consistently significantly predicted prosocial skills across all outcome domains, including cognitive skills (Jones et al., 2015).

### **Attributes of a High-Quality Prekindergarten**

African American children and children from low-income homes are more likely to attend low-quality preschool programs (Zalaznick, 2014). “Programs vary so widely in content organization, and, quality, that children and families often do not experience the benefits that high-quality care can offer. This non-system is compromising children’s school readiness” (Falk, 2012, p. 3). Mirroring the theories of Vygotsky (1978) and Bandura (1977), studies revealed that if a child’s educational environment is caring and the child has opportunities for active, exploratory, child-initiated experiences, children can develop greater language skills, better social skills, more self-control, and higher levels of thinking compared to children that have not had those opportunities (Shonkoff

& Phillips, 2000).

One factor relating to high-quality programming is teacher quality and certification. The teaching of young children is uniquely challenging and often difficult. Because this field of study has been deemed the “major with the lowest lifetime pay,” teacher candidates may not pursue this field (Paquette, 2014, p. 2). Quality does matter, but the evidence that determines highly qualified teachers is mixed (Darling-Hammond, 2000; Nye, Konstantopoulos, & Hedges, 2004). A study by Okpala, Rotich-Tanui, and Ardley (2009) captured the voices of preservice teachers regarding teacher quality. The authors found that preservice teachers perceived teacher qualifications and teacher preparation to be paramount to teacher quality.

As states increased services to students between the ages of 3 and 4, researchers have not closely scrutinized teacher quality for those services (Hussar & Bailey, 2014). In 2012, the State of Florida had the highest percentage of 4-year-old children enrolled in prekindergarten programs. “Florida doesn’t require its teachers to have college degrees in early education—and because the state spends so little on each child—just \$2,422 per child per year ... the quality of the program is low” (Lerner, 2012, para 7).

A second factor in prekindergarten quality is the triangulation of families with comprehensive services and schools. Studies revealed that a baby’s social environment, particularly created by the mother, and other childcare providers, directly affects future development (Schoore, 2005; Suomi, 2004). Positive child development and behaviors align with home visitation, health and childcare programs for the very young (Reynolds, Mathieson, & Topitzes, 2009; Sweet & Applebaum, 2004). The Perry Preschool program, previously mentioned for its successful implementation, involved parents as partners with teachers through weekly home visits (Pianta & Howes, 2009). The Chicago Child–Parent

Centers and the Abecedarian Project also required parent participation (Pianta & Howes, 2009). The Chicago Child–Parent Center required parent participation involving volunteering in the program a half-day each week (Zigler et al., 2011).

As greater fractions of American children are born into disadvantaged families, prekindergarten programs must continually address the high needs associated with those who are eligible to participate in such programs (Falk, 2012; Zigler et al., 2011).

According to the National Center for Children in Poverty, 44% of children are from low-income families, and one in every five live in poor families (2015). A meta-analysis in 2010 reinforced the necessity of family involvement for the promotion of social and emotional skills (Powell & Dunlap, 2010). Parent responsiveness and sensitivity related positively to later secure attachment in infants and toddlers. Additionally, positive parental attitude stimulation and support demonstrated appropriate social and emotional attachment (Powell & Dunlap, 2010).

A third factor related to program quality is curriculum. Curricula for prekindergarten often address academic success, but “preschool curricula that do not effectively address social and emotional development are likely to forego substantial benefits” (Barnett & Masse, 2007, p. 122). Landmark studies previously mentioned implemented a curriculum that was considered part of the success of early learning and included social development. These programs used a systematic curriculum that was validated by the evidence found in the studies themselves (Zigler et al., 2011).

The Abecedarian and Perry programs both targeted high-risk preschool children and produced impressive cognitive and academic gains.

But since most of these programs had broad curricula designed to enhance both academic and social skills, it is impossible to determine which of the academic,

self-regulation, and behavioral components of the program were responsible for the long-run impacts that were observed. (Zigler et al., 2011, p. 89)

In 2002, the Institute of Education Sciences began the Preschool Curriculum Evaluation Research project in an effort to conduct evaluations of preschool curricula. Their research revealed that only two of the 14 curricula evaluated had statistically significant positive impacts on student outcomes for the prekindergarten year, and only three had positive impacts on students in the kindergarten year (USDE, 2015a). This study included curricular measures that aligned with social competence and behavior (National Center for Education Research, 2008).

### **Kindergarten Readiness**

The impetus for a focused awareness of kindergarten readiness began during the Bush administration when one of six National Education Goals averred that “All children in America will start school ready to learn” (National Education Goals Panel, 1992, p. 3). President Bush’s drive for this concentrated effort was spurred by the former *Nation at Risk* report of 1983, which prompted administrators and educators to better analyze the Kindergarten Readiness Assessment (National Commission on Excellence in Education, 1983). This political attraction mainly occurred because the United States was deficient when compared to other more economically developed countries in the areas of curriculum and standards (Aud et al., 2013; National Center for Educational Statistics, 2015). Further attention stimulated the academic demands placed on children entering kindergarten (Mehaffie & McCall, 2002). Doggett and Watt suggested the United States cannot “race to the top” when so many children are not even at the starting line (2010, p. 9).

Some argued that assessing children at this age is not a pragmatic practice.

Teachers in settings for younger children increasingly use more assessments that emphasize mastery of specific skills and symbols, although many children of this age have not yet developed the capacity to comprehend such abstractions (Elkind, 2001; National Association for the Education of Young Children, 2003). The manner in which educators define kindergarten readiness varies, as does those defining it. In 2003, along with Hawaii, Maryland was one of the first states to publicly define school readiness (Aiona, 2005). In 2009, this definition stated:

Maryland Model for School Readiness (MMSR) defines school readiness as the state of early development that enables an individual child to engage in and benefit from early learning experiences. Because of family nurturing and interactions with others, a young child in this stage has reached certain levels of social and emotional development, cognition and general knowledge, language development, and physical well-being and motor development. School readiness acknowledges individual approaches toward learning as well as the unique experiences and backgrounds of each child. (MSDE, 2009, p. 5)

A component of the MMSR was the assessment. This assessment was a framework designed to define what children should know and be able to do by kindergarten entry (MSDE, 2009). The assessment encompassed learning standards, indicators, and objectives, measured using the Work Sampling System (WSS) or compatible assessment systems (MSDE, 2009). The Personal and Social Development Domain of the MMSR assessed three standards: Personal Self-Regulations, Social Self-Regulation, and Approaches Toward Learning. Through the assessment of these three standards, the instrument measured the following four indicators through either the WSS or a compatible assessment system:

- Shows self-direction in familiar settings.
- Follows simple classroom rules and routines with guidance.
- Uses classroom materials appropriately.
- Initiates and maintains relationships with peers and adults (MSDE, 2009).

The WSS is a valid, research-based assessment used with the MMSR to document children's skills, knowledge, behavior, and academic accomplishments systematically (Pearson, 2014). The State of Maryland, when implementing the MMSR, allowed individual local educational agencies to choose to use the WSS or a compatible assessment system (MSDE, 2009). The WSS is a curriculum-embedded, criterion-referenced performance assessment that intends to document and evaluate what children are learning and have begun to master across multiple domains (Meisels, 2011). Meisels (2011) found the WSS showed high internal and moderately high interrater reliability and accurately predicted performance on subsequent assessments, even when controlling for gender, age, and ability. A study by Gallant (2009) demonstrated further evidence of validity and utility of the WSS, and revealed the WSS functioned well across ethnic groups.

Although readiness is a complex idea linked to multiple meanings, the definition continues to include academic and social goals. A multidimensional view of readiness remains the basis for many state early childhood programs (Maine Department of Education, 2004; Texas Education Agency, 2008). In addition to the incongruity of defining readiness by state and local education programs, parents and teachers often have dissimilar views. Of kindergarten teachers, 10% or less believed that the academic skill of counting to 20 or more and knowing letters was needed for readiness, whereas 58% of preschoolers' parents thought these were essential skills (Ackerman, Barnett, & Robin,

2005). Additionally, teachers believed that nonacademic skill attributes were key to kindergarten readiness (Ackerman et al., 2005).

### **Social and Personal Component of School Readiness**

Evidence indicated that emotional development intertwines with cognitive abilities and physical well-being (Hinton et al., 2008). In responding to this substantiation, developmental researchers argued that intervention efforts must include a focus on the development of self-regulation and the regulation of behavior, attention, and emotion to set the stage for learning (Blair, 2002; Committee on Integrating the Science of Early Childhood Development, 2000; Sasser & Bierman, 2011). In response to this theory, the MSDE (2009) found it essential to include the assessment of social and personal development in the kindergarten readiness assessment.

The MMSR Assessment portends a direct relationship between a child's social and personal well-being and overall success in school and life (MSDE, 2009). Encompassed in the MMSR are three social and personal-development standards and 12 indicators. The following statements by the MSDE (2009) address social and personal development and align with Maryland's Early Learning Standards:

- Personal development is a complex process involving range and intensity of emotional reactions, perception of emotions in self and others, and behavioral expression of emotions. Personal development occurs through the interaction of a child's temperament with his or her experiences.
- Social development is an ongoing process of skill acquisition and mastery involving cognition, language, emotions, and perception. Social functioning is demonstrated by how a child interacts with others both verbally and non-verbally in difficult situations, through gestures, body language, and graphic or written

expression.

- A child's personal and social well-being is manifested in school by effective personal and social functioning. These characteristics are shaped and reflected in a child's background of culture and experience. A child expresses healthy personal and social functioning through respectful interpersonal relationships, responsible actions, accountability for those actions, and motivated learning (Maryland State Department of Education, 2009, p. 11).

In early childhood education, prior correlational research has provided evidence supporting the theory that a child's behavioral, emotional, and social competencies can be identified as key components for school readiness (Blair, 2002; Hyson, 2003; Raver, 2003; Zaslow et al., 2003). Raver's (2003) content analysis of longitudinal research presented an overview linking children's social and emotional development to school readiness. In two studies, academic achievement in the early years of learning appeared to build on a firm foundation of children's social skills. In the first study, researchers found a correlation by studying 5- and 6-year-old students between academic success in school and participants' abilities to form social relationships (Ladd et al., 1997). The latter longitudinal study consisted of a study of 345 students in California. This study suggested that social peer rejection assessed as early as kindergarten was associated with deficits in future work habits and academic achievement (O'Neil, Welsh, Parke, Wang, & Strand, 1997).

In relation to social gains, one major study evaluated prekindergarten duration and the development of social skills of participants. In a national study, 14,164 kindergarten students who attended preschool for 15 to 30 hours per week demonstrated stronger cognitive gains than those attending shorter for durations. However, the more hours in a

center-based program, the slower the social development (Center for Public Education, 2007). Also, slower social development was most pronounced among higher income children; thus researchers concluded that the benefits of longer hours of care are clearly greater for children from lower income families (Center for Public Education, 2007).

### **Duration of Prekindergarten**

Much research that compares half-day and full-day associations occurred in the kindergarten setting.

Although the relative efficacy of full-day and half-day kindergarten on academic outcomes has been the topic of considerable research, most studies comparing full-day and half-day kindergarten have been conducted in local settings, have modest research designs, are quite dated, and use analysis methods that are inconsistent with the nature of the intervention. (Lee et al., 2006, p. 165)

For prekindergarten, few were established as full-day programs, simply to meet the diverse needs of the working families and limit the barriers for accessibility to a prekindergarten education. Although prekindergarten may appear to be a natural solution to kindergarten readiness, the cost of implementing full-day prekindergarten has triggered politicians and school officials to revisit current programs. Many states' regulations allow local authorities the discretion to choose the number of hours prekindergarten will meet (National Center for Education Statistics, 2015). Some states provide fewer than 10 hours per week by operating only 3 or 4 days per week (Pianta & Howes, 2009).

A study by Lee et al. (2006) revealed that students who attended full-day kindergarten demonstrated higher academic success than those in half-day programs, yet teachers of full-day classes reported they only spent about one-third more time on instruction than those who taught in half-day programs. Although the Lee et al. study

addressed kindergarten and not prekindergarten students, the evidence contrasting the effects of full-day kindergarten and half-day kindergarten consistently showed short-term benefits but no long-term impacts (Assessment and Research, Education Research and Design, 2014). Much academic success diminished as early as third grade (Ackerman et al., 2005, Cannon, Jacknowitz, & Painter, 2006; Lee et al., 2006; Votruba-Drzal, Li-Grining, & Maldonado-Carreno, 2008; Wolgemuth et al., 2009).

The majority of studies that examined the correlation between half-day and full-day prekindergarten programs occurred in the early part of the 21st century. In a 2004 mixed-method study, kindergarten students formerly instructed in New York prekindergarten programs demonstrated greater academic gains than those who had no former prekindergarten experiences. When further disaggregating the data of over 300 randomly sampled kindergarten students, the researcher concluded that students with full-day experiences outscored those with only half-day experiences on all measures assessed through a program entitled Fox in a Box (DeSiato, 2004).

Obtaining data from the Early Childhood Longitudinal Study, Loeb et al. (2007), concluded that middle-class children appear to benefit cognitively from a half-day program. “While half-day programs may be beneficial for children from higher income families, full-day programs better serve children from lower income families, allowing them to gain pre-reading and math skills without detriment to social behavior” (Loeb et al. 2007, p. 16). Another study revealed, 3 years later, that full-day preschool programs had a positive effect on children’s language and academic learning as well as on parental satisfaction (Harry, Maltais, & Thompson, 2007). With over 800 children assessed, the study, conducted in Canada, continued to add to the body of literature that supported full-day prekindergarten programming.

In Louisiana, the implementation of the LA4 program demonstrated that although the pilot year of the program only provided half-year, half-dose instruction, the large gains nearly doubled when implemented full day, full-year (Pianta & Howes, 2009). Both programs were considered “solid, well-staffed, and environmentally enriched” which additionally added strong support to the principle that program intensity made the difference (Pianta & Howes, 2009, p. 101). This program used a Developing Skills Checklist as the measure, and only assessed the areas of language, print, and mathematics. Social, personal, and emotional components were not a part of the initial assessment.

Barnett was a part of several studies conducted in the middle of the 20th century (Barnett, 2008; Barnett & Masse, 2007; Barnett & Robin, 2006). Robin, Frede, and Barnett (2006) conducted a quasiexperimental study in which a randomized trial of 4-year-old children in a low-income urban district were selected to participate in programs of different durations. In this study, Robin et al. (2006) reviewed the effects of an extended day and an extended year. Researchers discovered that students who attended an extended-day, extended-year preschool program experienced much better gains than peers who attended only half-day programs (Robin et al., 2006). Thus, duration of the program was important in considering program effectiveness.

A recent study, released in 2014, compared a nonrandomized, matched-group of predominantly low-income, ethnic-minority children enrolled in the Child–Parent Centers of Chicago and evaluated the association between a full- versus half-day early childhood program on school readiness, attendance, and parent involvement. Results demonstrated that participants of the full-day preschool had higher scores than half-day peers on socioemotional development (58.6 vs. 54.5;  $p = .03$ ) and a significant difference on

physical health (Reynolds et al., 2014). Results did not indicate a significant difference between literacy and cognitive development. The authors suggested, based on the data that full-day preschool intervention aligned with four of the six domains assessed, that programs should be expanded to full-day programs in Chicago (Reynolds et al., 2014).

### **Current State of Prekindergarten**

As prekindergarten continues to expand, the ever-increasing need for research-based practices are necessary for decision-making purposes. From 2002 to 2010, state funding for early childhood education more than doubled from \$2.4 billion to \$5.3 billion (Barnett, 2002; Barnett, Epstein, Friedman, Sansanelli, & Hustedt, 2009). Researchers demonstrated the benefits of prekindergarten (Boyd et al., 2005). Yet, as policymakers examine the implementation of additional prekindergarten programs, return on investment becomes a priority. Stakeholders must consider the necessity to implement programs that elicit cognitive and social gains alongside the need to implement programs that are cost effective. As prekindergarten remains a predominant issue, school systems experience financial constraints that sometimes hinder the expansion of appropriate programming for prekindergarten students.

In 2014, President Obama presented highlights of an early childhood education plan at the White House Summit on Early Education. The President proposed a \$1 billion investment in America's youngest learners (The White House, 2014). Of this \$1 billion, \$250 million was allocated to preschool-development grants that allowed states to apply for the expansion of existing half-day programs to full-day prekindergarten programs. According to the White House, Office of the Press Secretary (2014), benefits from early childhood education to society would be roughly \$8.60 for every \$1 spent. Other notable state and local investments followed. Michigan reported doubling its preschool spending

with an additional \$65 million in fiscal 2014 and 2015 (Will, 2015).

- Mississippi set aside \$3 million in state grants to school districts specifically for prekindergarten.
- Montana's governor requested \$37 million to fund a voluntary, half-day universal preschool program.
- New York City more than doubled the number of students attending prekindergarten as part of a \$300 million city effort.
- Indianapolis has a \$40 million, 5-year plan to offer prekindergarten to low-income children.
- Seattle will raise taxes that amount to \$58 million over 4 years to support early childhood education.
- San Antonio, comparable to Seattle, will use increased taxes to promote full-day prekindergarten programs (Will, 2015).

In 2014, the Maryland General Assembly approved the Prekindergarten Expansion Act of 2014. This grant set aside \$4.3 million to expand prekindergarten classes to at least 1,500 more children (Johnson, 2014). As part of school-finance reform legislation in 2002, the state required local boards of education in Maryland to increase prekindergarten enrollment in public schools to all economically underprivileged 5-year-old children by the year 2007 (NIEER, 2013). In 2007, prekindergarten programs were funded with local education dollars and state aid under the terms of the Bridge to Excellence in Public Schools Act (NIEER, 2013). Until the 2011–2012 school year, Maryland state funding steadily increased to assist with this requirement; however, in 2011–2012, state funding diminished by 9%, and budgetary constraints continued to hinder the expansion of additional programs.

A regression analysis conducted by NIEER (Barnett & Robin, 2006) demonstrated certain aspects and variables related to cost when designing prekindergarten programs. Program duration was one significant contributor to increased program cost. The exact monetary figures between full-day and half-day programs are unclear; however, a full-day program does not necessarily cost twice as much as a half-day program (Barnett & Robin, 2006). Funding differs from state to state with some funding half-day sessions and allowing local funding to support the additional cost for full-day sessions. In 2004, all seven states that mandated full-day preschool ranked in the top 20 for per pupil spending (Barnett & Robin, 2006). Unlike some countries that maintain national policies for a free high-quality preschool education for 4-year-old children, the United States has created a blended responsibility among federal, state, and local agencies. In the United States, prekindergarten students are not guaranteed access to a public education. “The cost of quality preschool may be difficult to specify, but the cost of failing to provide these services seems clear” (Barnett & Robin, 2006, p. 14).

Although the vast majority of states use general revenue to provide prekindergarten services, recently some states and cities resorted to raising taxes as a means of funding early childhood education (Witte, 2004). Some states charge fees for a portion of their programs whereas others use lottery dollars and riverboat gambling fees (Witte, 2004). States such as Oklahoma have created partnerships with local entrepreneurs to assist with the funding of prekindergarten programs. As a selling point for various stakeholders to commit, the issues of equity of access prevail. “Stated simply, access to early education in America has been unfairly predicated on parental access to resources, with far more children from high-income families attending preschool than their middle- and low-income counterparts” (Zigler et al., 2011, p. 43). Targeted services,

as they currently exist, often fail to reach large portions of their intended low-income populations (Gilliam & Ripple, 2004).

Evidence supports the concept that prekindergarten and the investment in prekindergarten are rising. According to a report from the Education Commission of the States (2014), a 12% increase in state investments in school year 2013–2014 amounted to \$6.3 million (Williams, 2015). Some states made first-time investments in prekindergarten. “Investments in state-funded Pre-K are beneficial, but policymakers must continue to keep in mind that access along with the quality are integral components of a successful Pre-K program” (Williams, 2015, p. 1).

Federal investments in Head Start also prompt examination of student-success data. In 2013, Head Start reported key findings based on half-day programming. Children assessed in the research scored below norms across language, literacy, and mathematics measures at entry and exit from a Head Start program (Aikens, Klein, Tarullo, & West, 2013). Yet Head Start teachers reported that children showed growth in social skills from program entry to exit, further emphasizing the need to examine the goals of such programs (Aikens et al., 2013).

### **Methodology in Relation to Research**

Through a synthesis of studies, the researcher found that a correlational study is the most appropriate design to address the research question and purpose of the study. The purpose of this study was to examine the correlation between participation in half-day and full-day public prekindergarten and participants’ social and personal school-readiness scores, evidenced by the MMSR. when examining the subgroups of race (African American and Caucasian), ethnicity (Hispanic), and students identified as receiving or not receiving FARMS.

A study in 2012 used the same methodology that will be used for this study when comparing the relationship between maternal education and first-grade failure on the Criterion-Referenced Competency Test (Williams et al., 2013). The researcher chose a logistic regression and chi square test as data analysis tools to demonstrate relationships (Williams et al., 2013). Another study using chi square to show relationships involved teachers in Istanbul. This correlational study demonstrated that the use of the teaching methods in storytelling do not change according to the age, education level, and work experiences of teachers (Zembat & Zulfikar, 2006). The aforementioned researchers, like the current study, chose a correlational method, due to the data sets and questions posed.

A final study in 2012 was unrelated by topic, but related by the use of association and of chi square to determine relationships. The study, conducted in Turkey, evaluated the relationship between obesity and family and environmental factors. A correlational method was appropriate as the researchers were trying to discover if a relationship existed between the variables (Inanc, 2012).

### **Summary**

Decision makers at all levels of the educational spectrum seek information on the most cost-effective and long-lasting academically and socially successful programs. According to Zigler et al. (2011), “The most valuable lesson advocates for preschool education can take from the early intervention field is not to oversell the potential benefits” (p. 196). A deeper and more thorough investigation of the duration of prekindergarten program is needed. This research seeks to educate and inform stakeholders as they continue to expand prekindergarten programs.

### **Chapter 3 – Research Design and Methodology**

Previous research revealed a correlation between emotional and social development and future cognitive and physical development (Damasio, 1984; Hinton et al., 2008). Reynolds et al. (2014) found that children who attended full-day prekindergarten scored higher on tests of socioemotional development than those who only attended a half-day of classes. Significant associations also emerged between social-emotional skills in kindergarten and key young-adult outcomes across multiple domains of education, employment, criminal activity, substance use, and mental health (Jones et al., 2015). In this dissertation research, the researcher studied the duration of the prekindergarten day as it related to social and personal-skill readiness outcomes.

#### **Purpose**

The purpose of this study was to examine the correlation between participation in half-day and full-day public prekindergarten and participants' social and personal school readiness scores, as evidenced by the MMSR. The researcher arrayed the results in the aggregate and then additionally disaggregated by ethnicity, race, and socioeconomic status to determine if a correlation existed between school readiness and length of time spent in a public prekindergarten program (MSDE, 2009).

#### **Research Question**

The question that guided this study was, Is there a correlation between social and personal kindergarten readiness and the duration of the prekindergarten program?

The researcher further addressed this question by determining if a correlation existed between half-day or full-day prekindergarten participation and social and personal school readiness when examining the subgroups of race (African American and Caucasian), ethnicity (Hispanic), and students identified as receiving or not receiving

FARMS.

### **Hypothesis Statements**

**Null hypothesis.** ( $H_0$ ): No statistically significant correlation exists between social and personal kindergarten-readiness skills and students participating in half-day or full-day prekindergarten when examining the subgroups of race, ethnicity, and socioeconomic status.

**Alternative hypothesis.** ( $H_1$ ): A statistically significant correlation exists between social and personal kindergarten-readiness skills and students participating in half-day or full-day prekindergarten when examining the subgroups of race, ethnicity, and socioeconomic status.

### **Participants and Setting**

The researcher used extant data from the MMSR assessment in the domains of social and personal development from the school year 2013–2014 (MSDE, 2009). To accurately examine half-day and full-day public, prekindergarten programming, the researcher considered programs running in 2012–2013. In 2012–2013, there were 29,671 students enrolled in public prekindergarten (MSDE, 2013). Of the 24 counties of Maryland, The researcher chose seven to participate in this study. According to the MSDE *Fact Book* (2013), in the seven counties selected for the study, educators assessed 11,606 students in the 2013–2014 school year (MSDE, 2013). Using a convenience sampling method, the researcher selected all participants labeled by the MSDE as having participated in half-day programs or full-day public prekindergarten in 2012–2013 in the seven counties.

In 2012–2013, eight counties in the State of Maryland offered half-day and full-day programs. The researcher included only seven of the eight counties in this study, as

one county only provided access to programming 4 days a week whereas the others provided access to students 5 days a week. The researcher examined data from the seven counties collected and categorized participants as having participated in half-day or full-day public prekindergarten. The researcher analyzed the subgroups shown in Table 2, indicating those who participated in half-day and full-day prekindergarten.

Table 2

*Subgroup Categories*

Half-day prek	Full-day prek
African American	African American
Caucasian	Caucasian
Hispanic/Latino	Hispanic/Latino
Free and reduced-price meals	Free and reduced-price meals
Not free and reduced-price meals	Not free and reduced-price meals

### **Sample Selection**

Of the 11,606 students enrolled in the seven counties in Maryland public prekindergarten in 2012–2013, the researcher identified the number enrolled in full-day public prekindergarten programs and the number enrolled in half-day public prekindergarten programs. The researcher gained permission to use the dataset, which the researcher acquired from the MSDE. The researcher used the previous convenience sampling and the state-identified groupings for the study sample of 3,538 participants.

A convenience sample is a nonprobability sample in which a researcher uses readily available participants for the study (Rovai, Baker, & Ponton, 2014). When using convenience sampling, researchers are more challenged to generalize results, but a larger sample allowed me to determine correlations between participation in half-day or full-day prekindergarten and social and personal school readiness (McMillan & Schumacher,

2010).

### **Research Design**

The researcher employed a correlational study designed to investigate half-day or full-day prekindergarten programs and kindergarten readiness in the areas of social and personal attainment when examining the subgroups of race (African American and Caucasian), ethnicity (Hispanic), and students identified as receiving or not receiving FARMS. The main purpose of a correlational study, according to Simon (2011), is to determine relationships between variables. In this correlational study, the researcher measured the relationship between two variables and multiple subgroups. The researcher analyzed data to determine if a correlation existed between half-day and full-day prekindergarten and social and personal skills, as measured on the MMSR in the identified subgroups (MSDE, 2009).

The MMSR is a “framework to assist early educators in instructing and assessing young children in the knowledge, skills and behaviors they need to be prepared for the learning demands of formal schooling” (MSDE, 2009, p. 10). The MMSR, a norm-referenced achievement assessment system, uses the Pearson’s WSS to identify what a child knows and should be able to do by the end of kindergarten (MSDE, 2009). According to the MSDE (2014a), all seven counties used a customized WSS kindergarten checklist to assess entering kindergarten students’ readiness levels. Teachers in all seven counties observed students, documented students’ learning, and rated student competencies using specific WSS Kindergarten Assessment Guidelines developed by MSDE (2014b).

### **Data-Collection Procedures**

The data included in this study were public extant data. Following are the

procedures conducted to obtain the necessary data:

- The researcher wrote a letter to the MSDE requesting permission to use 2013–2014 MMSR data from the counties included in the study, disaggregated by race, ethnicity, and participation in FARMS.
- MSDE disaggregated data by participation in half-day or full-day participation in a 2012–2013 public prekindergarten program.
- The data the researcher received from MSDE identified participants solely by state identifier.
- MSDE sent data by e-mail in the form of an Excel document.

### **Data Analysis**

Through a chi square test for association, an analysis of data compared half-day and full-day public prekindergarten and the MMSR scores in the area of personal and social domain, disaggregated by ethnicity, race, and socioeconomic status, to determine if a correlation existed between school readiness and length of time spent in a public prekindergarten program (MSDE, 2009). The chi square test for association determines if a significant relationship exists between variables (Pallant, 2013). When using the chi square test of association, participants may be a part of multiple subgroups (Laerd Statistics, 2015).

In this research study, the researcher sorted data by half-day or full day participation and by MMSR data, thereby creating a two-by-three table. The researcher inputted data collected into the SPSS analysis system (Version 22) and completed a chi square test for association for each subgroup. Although the chi square test for association was an appropriate analysis for this study, it only demonstrated significance but did not determine the strength of significance (Pallant, 2013). Upon completion of the chi square

test for association, Cramer's V, a complementary analysis, was the strength test of chi square. Cramer's V measures the magnitude of the treatment effect and offers practical significance when a two-by-three contingency table demonstrates statistical significance (McHugh, 2013; McMillan & Schumacher, 2010; Rovai, Baker, & Ponton, 2014).

A similar study, conducted in Dade County Public Schools, used the chi square test for association when determining the correlation between delayed school entry and kindergarten retention among linguistically and ethnically diverse children (Winsler et al., 2012). The Winsler et al. (2012) study also reported data based on ethnicity, race, and FARMS status. Chi-square tests determined no significance between children who delayed their entry into kindergarten and ethnicity, but chi square tests did result in significance between delayed entry into kindergarten and families who did not qualify for FARMS (Winsler et al., 2012).

Researchers also used a chi square analysis and Cramer's V for a quantitative study in a southeast Texas high school to determine if a relationship existed between ninth-grade retention and on-time graduation (Bornsheuer, Polonyi, Andrews, Fore, & Onwuegbuzie, 2011). The relationships in the Bornsheuer et al. (2011) study were addressed using the chi square analysis and researchers obtained significance at the .05 level. Researchers further analyzed the effect sizes through Cramer's V using Cohen's 1988 criteria.

### **Instrument**

The instrument used to collect the data to assess the social and personal skills of kindergarten students who the researcher randomly selected was the MMSR (MSDE, 2009). The researcher assessed the Personal and Social Development Standard through three indicators: Personal Self-Regulation, Social Self-Regulation, and Approaches

toward Learning. Part of those indicators were several objectives and work sampling prompts. These indicators focused on students' relationships with peers and adults. They also assessed a child's eagerness to learn, attention to task, approaches to new tasks, and responsible behavior. This domain also assessed a child's ability to demonstrate a healthy self-confidence, coping skills, self-direction, and the ability to follow rules and understand classroom procedures (MSDE, 2009).

According to the MSDE (2009), kindergarten teachers observed and documented strengths and needs of each child from August through November. Teachers then completed ratings on 30 WSS performance indicators. The WSS is a curriculum-embedded, criterion-referenced performance assessment that intends to document and evaluate what children are learning and have begun to master across multiple domains (Meisels, 2011). The WSS showed high internal and moderately high interrater reliability and accurately predicted performance on subsequent assessments even when the researcher controlled gender, age, and ability (Meisels, 2011). A study by Gallant (2009) demonstrated further evidence of validity and utility of the WSS, and the study revealed the WSS functioned well across ethnic groups.

Of the 30 WSS performance indicators collected, four were in the domain of Social and Personal Development. They included shows self-direction in familiar settings, follows simple classroom rules and routines with guidance, uses classroom materials appropriately, and interacts easily with one or more children (MSDE, 2009). The remainder of the 30 data points were collected through Language and Literacy domains, Mathematical Thinking, Scientific Thinking, Social Studies, The Arts, and Physical Development and Health. This research did not include those remaining data points.

## **Limitations**

It is important to address the limitations of this study. A longitudinal study would result in the collection of more data to support the research question. However, the collection of extant data for this study involved 1 school year across seven Maryland counties. As public prekindergarten continues to expand and develop, collecting data for 1 year allowed consistency in sample size and in the use of the instrument used to determine readiness. Furthermore, groups participating in half-day public prekindergarten and full-day public prekindergarten were intact groups, which could lead to a threat to the internal validity of the study, as it may be difficult to control for experiences each group may have had prior to their participation in school.

Additionally, due to the data collected across counties, it was impossible to control for the implementation of a similar prekindergarten curriculum. This uncontrolled variable could impact the study. Similarly, the quality of teaching was not the subject of this study, creating a limitation, because teacher effectiveness is often used to measure effectiveness of prekindergarten programs. The High/Scope Perry Preschool Program and the Chicago Child–Parent Centers each used state-certified teachers (U.S. Department of Health, Education, and Welfare, 1969; Zigler et al., 2011).

## **Delimitations**

Of the 24 counties in the State of Maryland, during the 2012–2013 school year, eight counties offered half-day and full-day prekindergarten programs. The researcher chose a sample of seven counties from this population because those counties provided a 5-day per week program. Additionally, those programs included half-day and full-day public prekindergarten.

The researcher chose MMSR data from 2013–2014 for data collection, as it was

the final and most recent administration of the MMSR (MSDE, 2009). Previous longitudinal MMSR data were available, but the researcher chose 1 year in an effort to control for programs that were in operation 5 days a week and included half-day and full-day programming. Some counties demonstrated differences in duration and access for previous years (MSDE, 2012, 2013, 2014b).

A final delimitation to this study related to the amount of current research in the area of early learning. Because this topic was a current educational focus, additional new information became available during this investigation. Updated or new findings from research that became available through the course of this study were retrospectively included in the appropriate chapters.

### **Validity and Reliability**

When considering the validity and reliability of this correlational study, the researcher considered threats to internal and to external validity. According to McMillan and Schumacher, “internal validity focuses on the viability of causal links between the independent and dependent variables,” and “external validity refers to the generalizability of the results and conclusions to other people and locations” (2010, p. 105). To maximize the strength of internal validity, the researcher conducted nonexperimental research. The use of multiple counties addressed the selection threat and provided a large sample size. Additionally, the use of extant data permitted me to keep the independent variable separated into two intact groups. These intact groups may have posed a minimal threat to the internal validity of the research. This study was an ex post facto study, so participants in half-day and full-day public prekindergarten had previously been formed. This created a selection-history interaction threat because participants had different life experiences, making it difficult to control for similarity in participants. In interpreting the data, the

researcher considered this information when suggesting additional studies.

External validity refers to the generalizability of the results (McMillan & Schumacher, 2010). In this study, the researcher was cautious of generalizing the results, as the study only included seven counties in the State of Maryland. Based on the intact groups, counties limited some participants to socioeconomic and demographic factors. In an effort to address external validity, the researcher further disaggregated the data by examining race, ethnicity, and socioeconomic status.

### **Role of Researcher**

The researcher's role was to add to the body of research surrounding the social and personal attainment of kindergarten students in relation to their previous school experiences in either half or full-day prekindergarten programs. Additionally, the researcher's role was to share the findings from the research.

### **Measures of Ethical Protection**

Conducting this research will not pose a threat to any student or group of students. The use of state identifiers protected specific student identity, and the state did not provide specific student names and schools in the data. The researcher eliminated one school system from the study, as it only covered a 4-day school week. Additionally, the researcher did not name specific counties included in the study. The researcher retrieved extant data from the MSDE. The data never specifically identified a student or a county. All data collected for this study preexisted in public records.

### **Summary**

The study examined the correlation between participation in half-day and full-day public prekindergarten and participants' social and personal school-readiness scores, as evidenced by the MMSR. Few studies compared progress in the dimensions of social and

emotional development of students in full-day and half-day prekindergarten programs. This research added to the body of literature in the area of early childhood education, specifically, the value of length of day in a prekindergarten program.

## **Chapter 4 – Findings**

The significance of prekindergarten continues to be a topic of discussion and debate among proponents and adversaries of early childhood education (Gormley et al., 2008; Karoly et al., 1998; Zigler et al., 2011). As some school systems begin to expand programming for the very young, research to determine the appropriate duration of the school day needed to acquire the necessary social and personal school readiness skills is essential. The purpose of this study was to examine the correlation between participation in half-day and full-day public prekindergarten and participants' social and personal school-readiness scores, as evidenced by the MMSR (MSDE, 2009).

This chapter presents the data analysis and resulting findings of the correlational study designed to identify if a relationship existed between the dependent variable—students' social and personal-readiness scores—and the independent variable: duration of the public prekindergarten program. The researcher collected public extant data from the MSDE, which included a dataset from seven counties in the State of Maryland (MSDE, 2014a). The researcher first examined the data in the aggregate and then further disaggregated the data by ethnicity, race, and socioeconomic status.

Data analyses provided answers to the research question of this study. The question was designed to determine if participation in a half-day versus a full-day of prekindergarten impacted the acquisition of social and personal kindergarten-readiness skills. The question that guided this research was, Is there a correlation between social and personal kindergarten readiness and the duration of the prekindergarten program? Chapter 4 offers findings and presents statistical summaries of the data analyzed. Information reported consolidated the seven Maryland counties that were included in the study. The results of the study may be used to inform interested stakeholders in

appropriate programming for prekindergarten students.

## Demographics

In 2012–2013, in the seven counties researched, 29,671 students participated in the MMSR assessment (MSDE, 2009). The researcher used a convenience sample of 3,538 participants from those seven counties for this research. Figure 1 displays the percentage of participants included in this dissertation study by county and subgroup.

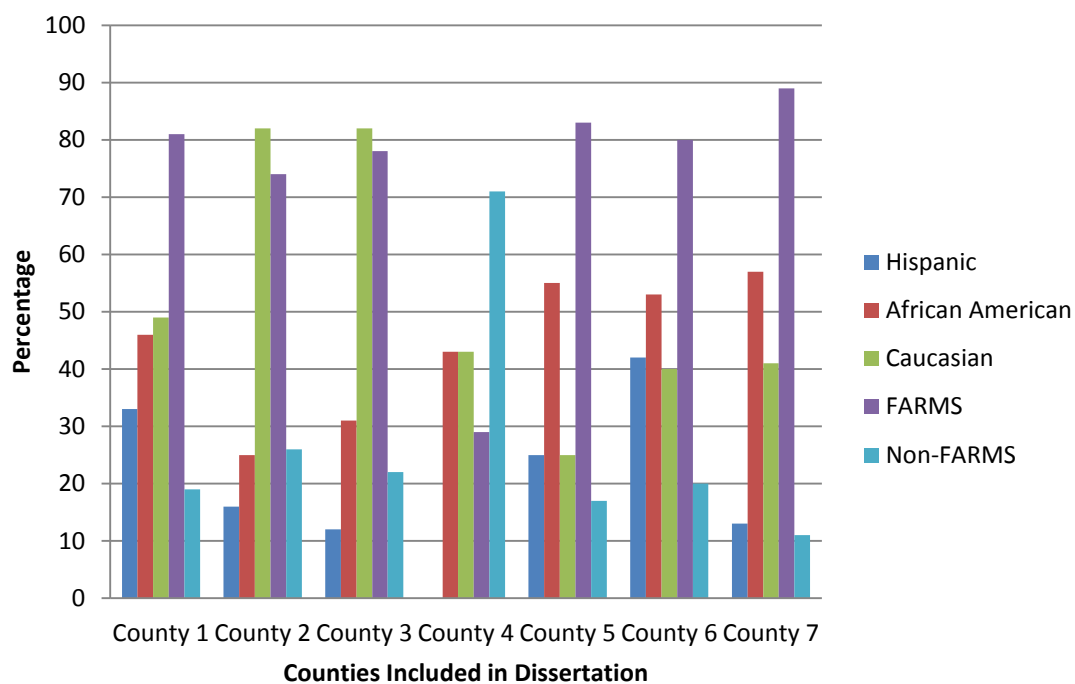


Figure 1. Demographics by county of study participants. FARMS = free and reduced-price meals.

Table 3 depicts the demographics of study participants by ethnicity (Hispanic), race (African American and Caucasian), and socioeconomic status (FARMS and Non-FARMS). The table exhibits all participants by number and percentage included in the convenience sample.

The criteria for selection required the county to offer half-day and full-day programs 5 days per week. All seven counties that met the criteria for this study were

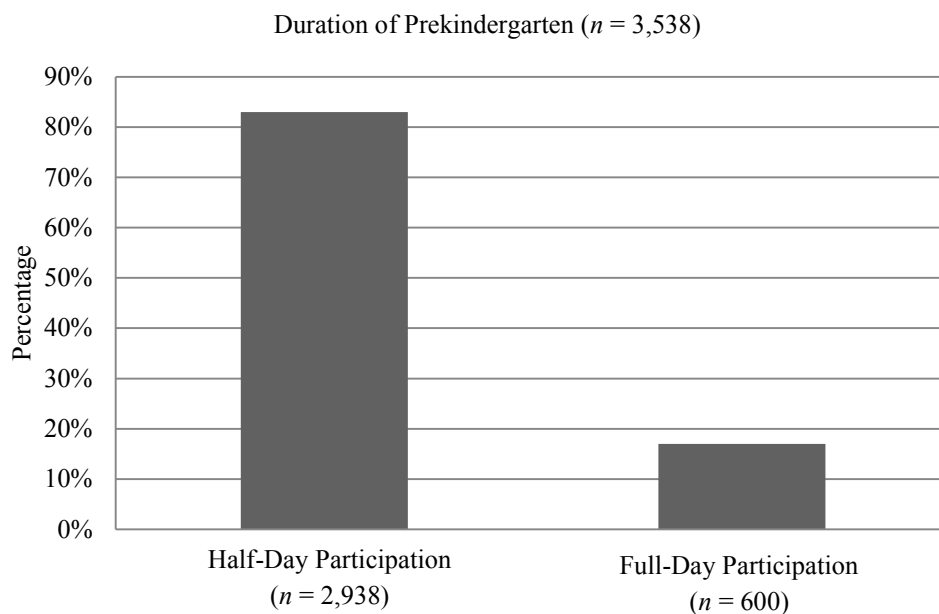
included. In the seven counties selected, Figure 2 displays the percentage of participation in half-day and full-day public prekindergarten.

Table 3

*Demographic Description of Participants*

	Subgroup	<i>n</i>	Percent
Ethnicity	Hispanic	1226.0	34.7
Race	African American	1765.0	49.9
	Caucasian	1598.0	45.2
Economic status determined by FARMS	FARMS	2846.0	80.4
	Non-FARMS	692.0	19.6

*Note.* FARMS = free and reduced-price meals.



*Figure 2.* Participation in half-day and full-day prekindergarten.

Table 4 displays disaggregated data by ethnicity, race, and socioeconomic status. Table 3 reveals the demographic characteristics of this research and further separates the data by participation in half-day or full-day prekindergarten programming. In this dissertation study, the largest percentages of participation by subgroups were the Caucasian and FARMS subgroups.

Table 4

*Demographic Description of Participants by Duration*

	Variable	<i>n</i>	Percent
Ethnicity	Hispanic half-day	1064.0	30.1
	Hispanic full-day	162.0	4.6
Race	African American half-day	1394.0	39.4
	African American full-day	371.0	10.5
	Caucasian half-day	1406.0	39.7
	Caucasian full-day	192.0	5.4
Economic Status determined by FARMS	FARMS half-day	2361.0	66.7
	FARMS full-day	485.0	13.7
	Non-FARMS half-day	577.0	16.3
	Non-FARMS full-day	115.0	3.3

*Note.* FARMS = free and reduced-price meals.

## Findings

The researcher used the chi square test for association to determine if the analysis revealed a statistically significant correlation between social and personal attainment, as evidenced by scores on the MMSR and participation in half-day or full-day public prekindergarten (MSDE, 2009). The researcher used IBM SPSS (Version 22) statistics software to analyze data. The rationale for the selection of these analyses aligned with the attributes of the dataset, which were categorical in nature. The data consisted of frequencies in discrete categories, allowing me to employ the chi square test for association to determine if a significant correlation existed between the independent and dependent variables. This analysis determined if two categorical variables were independent of one another and yielded a contingency table that reported the observed and expected frequencies for the various categories of the dependent and independent variables (Rovai et al., 2014). For analysis purposes, the researcher considered variables to be significant at the  $p < .05$  level. A two-by-three contingency table, created through

the chi square analysis, revealed statistics regarding the acceptance or rejection of the null hypothesis that social and personal kindergarten-readiness skills are independent of prekindergarten duration.

Using the chi square test for association, the researcher found statistical correlations; however, the researcher could not find the strength of the associations. Therefore, the researcher used the Cramer's V test (Rovai et al., 2014). Cramer's V, the strength test of the chi square test for association, is a nonparametric procedure researchers use to determine the strength of an association between columns and rows in a two-by-three contingency table (Rovai et al., 2014). This strength test is the suggested method of analysis to measure the strength of a relationship when the contingency table is larger than a two-by-three table.

### **Hypothesis Statements**

**Null hypothesis.** ( $H_0$ ): No statistically significant correlation exists between social and personal kindergarten-readiness skills and students participating in half-day or full-day prekindergarten when examining the subgroups of race, ethnicity, and socioeconomic status.

**Alternative hypothesis.** ( $H_1$ ): A statistically significant correlation exists between social and personal kindergarten-readiness skills and students participating in half-day or full-day prekindergarten when examining the subgroups of race, ethnicity, and socioeconomic status.

### **Finding 1**

When analyzing the aggregate data, the chi square test for association revealed a statistically significant correlation between social and personal school readiness and duration of the prekindergarten program,  $\chi^2(n = 3538) = 20.470, p < .001$ . Consequently,

sufficient evidence emerged to reject the null hypothesis. This suggested that duration of the prekindergarten program had an effect on social and personal school readiness. Measuring nominal-by-nominal associations, Cramer's V, ( $\phi = .076$ ) indicated a small relationship between the variables (Cohen, 1988).

The two-by-three contingency table demonstrated observed frequencies versus expected frequencies. As shown in Table 5, 84.6% of participants in half-day prekindergarten demonstrated readiness in social and personal skills, whereas 77.5% of those who participated in full-day prekindergarten demonstrated social and personal readiness.

Table 5

*Chi-Square Analysis Summary in the Aggregate*

Demonstrating social/personal readiness	<i>n</i> = 3538	Half-day	Full-day
3 (Full)	Observed	2,487.0	465.0
	Expected	2,451.4	500.6
	% Within	84.6	77.5
2 (Approaching)	Observed	366.0	116.0
	Expected	400.3	81.7
	% Within	12.5	19.3
1 (Developing)	Observed	85.0	19.0
	Expected	86.4	17.6
	% Within	2.9	3.2

## **Finding 2**

Following an analysis in the aggregate, the researcher disaggregated the data by subgroups. When analyzing the African American subgroup, the chi square test for association revealed a statistically significant correlation between social and personal school readiness and duration of the prekindergarten program,  $\chi^2(n = 1765) = 9.135$ ,

$p < .010$ . This result suggested that duration of the prekindergarten program for African American students had an effect on social and personal school readiness. Cramer's  $V$  indicated a small relationship between the variables ( $\phi = .072$ ).

As revealed in Table 6, 83.7% of the African American subgroup who participated in half-day prekindergarten demonstrated readiness in social and personal skills, whereas 77.9% of those who participated in full-day prekindergarten demonstrated social and personal readiness.

Table 6

*Chi-Square Analysis Summary in the Disaggregate by Race: African American*

Demonstrating social/personal readiness	$n = 1765$	Half-day	Full-day
3 (Full)	Observed	1,167.0	289.0
	Expected	1,150.0	306.0
	% Within	83.7	77.9
2 (Approaching)	Observed	184.0	72.0
	Expected	202.2	53.8
	% Within	13.2	19.4
1 (Developing)	Observed	43.0	10.0
	Expected	41.9	11.1
	% Within	3.1	2.7

### Finding 3

When the researcher disaggregated the data by the Caucasian subgroup, the Pearson chi square statistic revealed a statistically significant correlation between social and personal school readiness and duration of the prekindergarten program,  $\chi^2(n = 1598) = 10.743, p < .005$ . This suggested that duration of the prekindergarten program for Caucasian participants had an effect on social and personal school readiness. Cramer's  $V$ , again, indicated a small relationship between the variables ( $\phi = .082$ ).

Table 7 conveys that 84.8% of the Caucasian subgroup who participated in half-day prekindergarten demonstrated readiness in social and personal skills, whereas 75.5% of those who participated in full-day prekindergarten demonstrated social and personal readiness.

Table 7

*Chi-Square Analysis Summary in the Disaggregate by Race: Caucasian*

Demonstrating social/personal readiness	<i>n</i> = 1598	Half-day	Full-day
3 (Full)	Observed	1,192.0	145.0
	Expected	1,176.4	160.6
	% Within	84.8	75.5
2 (Approaching)	Observed	178.0	40.0
	Expected	191.8	26.2
	% Within	20.8	12.7
1 (Developing)	Observed	36.0	7.0
	Expected	37.8	5.2
	% Within	2.6	3.6

#### **Finding 4**

The Hispanic subgroup, too, revealed a statistically significant correlation between social and personal school readiness and duration of the prekindergarten program,  $\chi^2(n = 1226) = 16.264, p < .001$ . This outcome suggested that duration of the prekindergarten program for Hispanic students had an effect on social and personal school readiness. The strength test of chi square, Cramer's V, indicated a small relationship between the variables ( $\phi = .115$ ). This relationship was largest for all subgroups analyzed.

Table 8 displays data that reported 84.1% of the Hispanic subgroup who participated in half-day prekindergarten demonstrated readiness in social and personal

skills, whereas 71.6% of those who participated in full-day prekindergarten demonstrated social and personal readiness.

Table 8

*Chi-Square Analysis Summary in the Disaggregate by Ethnicity: Hispanic*

Demonstrating social/personal readiness	<i>n</i> = 1226	Half-day	Full-day
3 (Full)	Observed	895.0	116.0
	Expected	877.4	133.6
	% Within	84.1	71.6
2 (Approaching)	Observed	138.0	40.0
	Expected	154.5	23.5
	% Within	13.0	24.7
1 (Developing)	Observed	31.0	6.0
	Expected	32.1	4.9
	% Within	2.9	3.7

## Finding 5

When analyzed further by socioeconomic status, the researcher included participants with FARMS status, and those without FARMS status in the analysis. Analysis of the FARMS subgroup revealed a statistically significant correlation between social and personal school readiness and duration of the prekindergarten program,  $\chi^2(n = 2846) = 17.850, p < .001$ . This outcome suggested that duration of the prekindergarten program for FARMS students had an effect on social and personal school readiness. Cramer's V indicated a small relationship between the variables ( $\phi = .079$ ).

Of those included in the FARMS subgroup, 85.3% of those who participated in half-day prekindergarten demonstrated readiness in social and personal skills, whereas 77.9% of those who participated in full-day prekindergarten demonstrated social and

personal readiness. Table 9 displays the FARMS analysis.

Table 9

*Chi-Square Analysis Summary in the Disaggregate by Socioeconomic Status: FARMS*

Demonstrating social/personal readiness	<i>n</i> = 2846	Half-day	Full-day
3 (Full)	Observed	2,015.0	378.0
	Expected	1,985.2	407.8
	% Within	85.3	77.9
2 (Approaching)	Observed	279.0	91.0
	Expected	306.9	63.1
	% Within	11.8	18.8
1 (Developing)	Observed	67.0	16.0
	Expected	68.9	14.1
	% Within	2.8	3.3

*Note.* FARMS = free and reduced-price meals.

## Finding 6

When analyzing the Non-FARMS subgroup, the smallest subgroup of the study, the Pearson chi square statistic did not reveal a statistically significant correlation between social and personal school readiness and duration of the prekindergarten program,  $\chi^2(n = 692) = 3.160, p = .206$ . This outcome suggested that duration of the prekindergarten program for Non-FARMS students did not have an effect on social and personal school readiness. As a statistical correlation did not exist, the strength test was unnecessary.

The data illustrated on Table 10 revealed 81.8% of participants included in the Non-FARMS subgroup that participated in half-day prekindergarten demonstrated readiness in social and personal skills, whereas 75.7% of those who participated in full-day prekindergarten demonstrated social and personal readiness. The chi square test for

association did not demonstrate sufficient discrepancy between observed and expected frequencies to reveal a statistically significant correlation between the variables for Non-FARMS participants and social and personal attainment, as evidenced by the MMSR.

Table 10

*Chi-Square Analysis Summary in the Disaggregate by Socioeconomic Status: Non-FARMS*

Demonstrating social/personal readiness	<i>n</i> = 692	Half-day	Full-day
3 (Full)	Observed	472.0	87.0
	Expected	466.1	92.9
	% Within	81.8	75.7
2 (Approaching)	Observed	87.0	25.0
	Expected	93.4	18.6
	% Within	77.7	22.3
1 (Developing)	Observed	18.0	3.0
	Expected	17.5	3.5
	% Within	3.1	2.6

*Note.* FARMS = free and reduced-price meals.

### Summary of Data Analysis

Upon completion of the chi square test for association and complementary Cramer's V, the researcher rejected the null hypothesis. A statistically significant correlation exists between the social and personal kindergarten-readiness skills and students participating in half- or full-day prekindergarten when examining the subgroups of race, ethnicity, and socioeconomic status. When further disaggregating the data, the Non-FARMS subgroup was the only group that did not show a statistically significant correlation. However, although not significant, half-day participants coded as Non-FARMS had a higher percentage of social and personal attainment than did Non-FARMS participants in full-day programs (see Table 11).

In addition to the chi square test for association and the complementary Cramer's

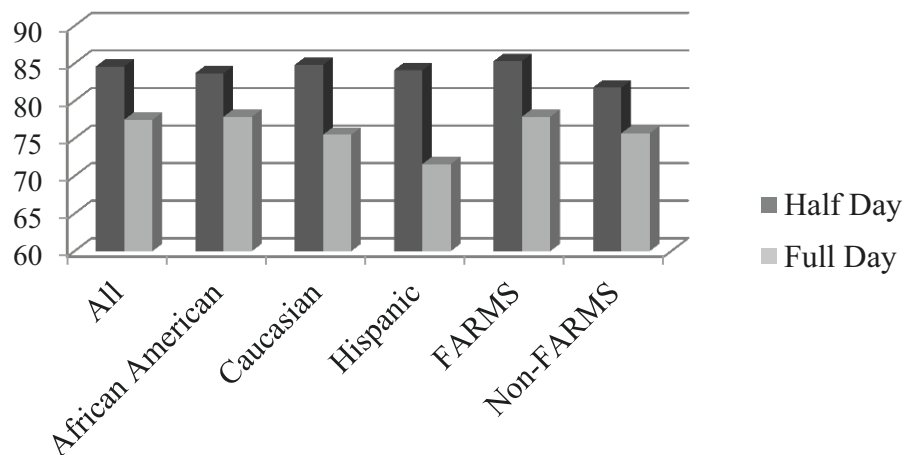
V, the researcher used the chi square test for association to examine the percentages in each group to compare social and personal attainment between half-day and full-day programs. Figure 3 displays the percentage of social and personal skill attainment by aggregated and disaggregated data. All subgroups had a higher percentage of half-day participants demonstrating social and personal school readiness than did their full-day counterparts.

Table 11

*Chi-Square Test for Association in the Aggregate and Disaggregate*

	<i>n</i>	$\chi^2$	<i>p</i>	Cramer's V
Aggregate	3,538	20.470	< .001	.076
Hispanic	1,226	16.264	< .001	.115
African American	1,765	9.135	< .010	.072
Caucasian	1,598	10.743	< .005	.082
FARMS	2,846	17.850	< .001	.079
Non-FARMS	692	3.160	.206	N/A

*Note.* Farms = free and reduced-price lunch.



*Figure 3.* Percentage of social and personal attainment. FARMS = free and reduced-price meals.

## **Chapter 5 – Conclusions and Implications**

The purpose of this dissertation research was to examine the correlation between participation in half-day and full-day, public prekindergarten participants' social and personal school-readiness scores, as evidenced by the MMSR (MSDE, 2009). Chapter 5 presents the outcomes of the study in relation to the social theories espoused and information gleaned from the review of the literature. Developed under the suppositions of Bandura (1977) and Vygotsky (1978), this study provided data that demonstrated a statistically significant correlation between the duration of the prekindergarten day and the social and personal skill achievement necessary for successful school readiness. When reviewing the data in the aggregate and disaggregate, a higher percentage of half-day participants indicated social and personal readiness compared to those participating in full-day programs. These findings reveal the importance of thoughtful consideration of the duration of the prekindergarten day. As federal- and state-funded prekindergarten programs continue to expand, the need to evaluate how duration impacts prekindergarten students socially and personally is essential (Barnett, Carolan, Squires, Brown, & Horowitz, 2015).

Furthermore, the limited studies that do exist that examined the effectiveness of half-day and full-day prekindergarten often focused on the cognitive gains achieved. "Too many measure only half the child, focusing on IQ and cognitive gains at the expense of social and emotional skills that are often stronger determinants of adult success" (Heckman, 2015, p. 2). The assumption that academic learning has little to do with the emotional or social environment must be addressed in these newly developed early childhood classrooms. Attention to the correlation between emotional growth and cognitive growth is significant, as neuroscience reveals that the emotional centers of the

brain intricately interweave with the areas involved in cognitive learning (Zins, Weissberg, Wang, & Walberg, 2004). This evidence further validates the significance of this study and the need to use research to inform decisions of those initiating early learning reforms.

## Conclusions

A synthesis of the findings from this study guided me in developing additional research implications and recommendations. Upon disaggregating the data, the researcher found a statistically significant correlation between duration and social and personal school readiness among all subgroups, with the exception of Non-FARMS. Although the effect size of the statistically significant correlation between duration and social and personal attainment was small, data revealed that in the aggregate and in the disaggregated subgroups, those participating in half-day prekindergarten programs had a higher percentage of social and personal-skills attainment than their full-day peers. (See Table 12).

Table 12

*Social and Personal Attainment by Duration in the Aggregate and Disaggregate*

	Half-day	Full-day	Gap
All	84.6%	77.5%	7.1
African American	83.7%	77.9%	5.8
Caucasian	84.8%	75.5%	9.3
Hispanic	84.1%	71.6%	12.5
FARMS	85.3%	77.9%	7.4
Non-FARMS	81.8%	75.7%	6.1

*Note.* Farms = free and reduced-price lunch.

The aggregate data consisted of 3,538 participants from seven counties in the State of Maryland. When analyzing the data in the aggregate, a statistically significant correlation emerged between duration of the prekindergarten day and attainment of

social- and personal-readiness skills. The findings also suggested that the Hispanic subgroup demonstrated the widest gap between participation in half-day versus full-day public prekindergarten. Last, the Non-FARMS subgroup did not show a statistically significant correlation between duration and social- and personal-skills attainment; however, data from this subgroup did reveal a higher percentage of participants formally instructed in half-day prekindergarten programs as more socially and personally prepared for school compared to full-day participants.

The research question that enveloped this dissertation was, Is there a correlation between social and personal kindergarten readiness and the duration of the prekindergarten program? Results from this research may provide insight into the appropriate prekindergarten duration necessary to acquire social- and personal-readiness skills for kindergarten. The implications to practice and programming may also be key to advancing the social- and personal-readiness skills of students.

### **Implications**

Stevens (2015) reports that we are at a time when early learning reforms and expansions are the focus of political and social arenas. Due to the attention on early learning, this dissertation may present implications for school systems, students, and families. Results from the research question presented here suggest that a student who participated in half-day public prekindergarten was more likely to be socially and personally prepared for school than their counterparts who participated in full-day public prekindergarten. These results challenge the rationale for full-day prekindergarten and the influence full-day prekindergarten may have on a child's social and personal readiness for school.

The findings from this research support the notion that students participating in

half-day public prekindergarten programs are developing the necessary social and personal skills needed for kindergarten readiness at higher rates than students attending full-day programs. This study makes a case for the importance of considering the impact half-day and full-day instruction have on the attainment of social- and personal-readiness skills. The USDE reported that 88% of children from two-parent working homes participate in at least one nonparental care arrangement, and 83% of children from single-parent working homes participate in at least one nonparental care arrangement (2015b). Although providing full-day programming may produce lasting effects on children's learning across a series of skills and may eliminate the hardships on working families and single parents, many studies referenced did not consider the social and personal impacts of programming (Robin et al., 2006). Three insightful themes emerged through the research that support implications and suggested practices for school systems debating the implementation of half-day or full-day programs. These themes included cultural norms and socialization, poverty and prekindergarten, and developmentally appropriate programming as it connects to both non-cognitive and cognitive gains.

**Cultural norms and socialization.** Vygotsky (1978) posited that children first make learning connections on a social level in a culturally appropriate environment. A formal school setting may not be the most culturally appropriate environment to expand these learning connections for every child, so when children spend a full-day in this structured environment, it may hinder an opportunity to interact on a social and personal level. "Preschoolers cannot become socially competent without many extended times to interact with one another" (Copple, Bredekamp Koralek, & Charner, 2013, p. 42). With the highest percentage gap between the attainment of social and personal skills and duration of the prekindergarten day, the researcher continued to seek an explanation

regarding the data pertaining to the Hispanic subgroup.

In this dissertation study, 84.1% of the Hispanic subgroup who participated in half-day prekindergarten demonstrated social and personal readiness, whereas only 71.6% of those attending full-day prekindergarten demonstrated the same readiness skills. In this case, understanding cultural norms may assist in comprehending the large percentage gap that exists in the data between Hispanic students who participated in half-day versus full-day prekindergarten.

When considering readiness for school, Hispanic children are least likely to be academically ready for kindergarten (MSDE, 2015b; O'Donnell, 2008). However, research reveals that young Hispanic children enter kindergarten with better socioemotional skills than their peers (Murphey, Guzman, & Torres, 2014). Half-day Hispanic participants in half-day programs demonstrated those skills at a higher percentage. Therefore, the researcher focused on questioning what was occurring outside of the school day that led to this finding. A survey conducted in 2013 revealed most preschool-aged Hispanic children do key learning activities at home with their parents (Mamedova, Redford, & Zukerberg, 2013). Such activities include working on arts and crafts, singing songs, telling stories, and reading together. These activities may foster social and personal connections and allow children opportunities to engage in a family setting.

Traditional virtues in this community also emphasize efforts Hispanic parents make in proper social behavior and showing respect (Murphey et al., 2014). A higher percentage of Hispanic children eat home-cooked meals with their families compared with Non-Hispanic Caucasian and Non-Hispanic African American children (Murphy et al., 2014). This cultural norm fosters opportunities for communication between children

and adults, and students attending only half-day prekindergarten sessions may have more time for this communication to occur. Common to the theme regarding cultural norms, many Hispanic mothers continue to stay at home to raise their children or report rather uninviting preschools in their neighborhoods, so they elect to keep their children home (Fuller & Huang, 2003; Liang et al., 2002). This information implies the necessity for school systems to address the diverse needs of their communities and support those needs by developing learning opportunities for families. These family-engagement opportunities would allow families to participate with their children in a multitude of tasks intended to promote social and personal-readiness skills.

**Poverty and prekindergarten.** Although only 19.6% of participants included in this study had a Non-FARMS designation, it is important to discuss the key findings of this subgroup. Non-FARMS participants were coded as such because they did not receive services funded by meeting income-eligibility guidelines. This study revealed no statistical significance between duration and scores of social and personal attainment for the Non-FARMS subgroup. However, a 6.1% gap emerged between those demonstrating social and personal readiness in half-day programs compared to those participating in full-day public prekindergarten. Non-FARMS participants in half-day programs outperformed those attending full-day sessions.

One possible explanation for the nonsignificant findings of this subgroup could be based on findings from Oklahoma's universal prekindergarten program. A regression discontinuity-designed study found children in this program who were less advantaged benefitted more from participation in prekindergarten, because their academic baseline was lower (Gormley, Kitchens, & Adelstein, 2013). Although those less advantaged benefitted more, all subgroups demonstrated strengths after participating in

prekindergarten, resulting in a conclusion that high-quality programs would make the biggest impact when providing prekindergarten for all socioeconomic clusters (Gormley et al., 2013).

The data from this dissertation study would indicate that school systems may want to continue to focus on FARMS students while also paying attention to the length of the day needed for successful attainment of social and personal skills. Although full-day programs may produce academic gains for FARMS students, half-day programs may warrant enough time to teach social- and personal-readiness skills while allowing systems the opportunity to serve more students. Meta-analytic work on aggression found that modest improvements in children's aggressive behavior occurred among programs that made the improvement of children's behavior an explicit goal (Yoshikawa et al., 2013). Implementing half-day programs that focus on specific instruction surrounding social and personal skills may be sufficient to produce the results systems seek.

**Developmentally appropriate programming.** Studies purport the advantage of full-day over half-day prekindergarten programming, but much of what is reported are gains based solely on academic attainment (Loeb et al., 2007; Robin et al., 2006). However, in a study executed by Loeb et al., evidence did not support a longer day for the development of social skills. Children who attended a program for less than 15 hours per week exhibited the best behavior characteristics, and those attending for more than 30 hours per week exhibited the most problematic behaviors (Loeb et al., 2007). In a related longitudinal study regarding duration of the kindergarten day, Macleod (2012) found that teachers viewed children who attended full-day kindergarten as displaying more problematic behaviors when compared with children who had previously attended half-day kindergarten. Understanding the developmental appropriateness of the length of the

school day is a factor school systems should consider when implementing programming.

Bodrova and Leong (2003) stated, one factor that may contribute to the insufficiency of social skills is that children in full-day programs spend more time in the company of same-age peers who may not be as effective “play mentors” as older siblings, friends, or families (p. 2). When children participate in a half-day program, they may be afforded additional time to develop the necessary social and personal skills in a less formal setting. Parents and families who support positive emotional development increase the likelihood that their children will develop early emotional competence, will be better prepared to enter school, and will be less likely to display behavior problems at home and at school (Sammons et al., 2003). Formal structured settings only support cognitive gains and do not answer the half-day–full-day argument.

We find that although going to preschool may increase the average child’s opportunities, it has been found again and again that children have fewer exchanges with adults than they do at home. Children talk to each other.

However, it seems from research that what is important for a good, natural learning situation is for the child to have a conversation with a person who uses simple language in correct forms and who is flexible enough to change his or her language to suit the language of the child being spoken to. Playmates do that, but adults do that better and for more of the time. (Clay, 2014, pp. 5–6)

Formal curriculum, typically academically driven, allows less time for socialization and play-like activities. Many times, these unstructured “play” opportunities are rewards for completing seatwork, and although they are considered essential development investments, those valuable opportunities are often unplanned or unsupported (Bodrova & Leong, 2007; Edwards, Gandini, & Forman, 2012). Play is so

important that it has been recognized as a right for every child (American Academy of Pediatrics, as cited in Ginsburg, 2007). Play allows children time to develop social skills with other children and adults, but when play is not child-driven, children tend to acquiesce to adult rules and lose some of the benefits play offers them in developing creativity, leadership, and group skills (Flaxman, 2000; Hurwitz, 2003; MacDonald, 1993). The consequence of school leadership and teachers not having a firm understanding of Vygotsky's (1978) zone of proximal development and Bandura's (1977) social-learning theory may be a full-day of programming that is not developmentally appropriate for the exchange of social learning from a collaborative effort to an independent skill.

The trend to focus on academics and disregard the importance of play was originally spearheaded by the Elementary and Secondary Education Act Reauthorization, 2001, commonly known as the No Child Left Behind Act of 2001. It was originally endorsed because of the unacceptable educational performance of U.S. children (Ginsburg, 2007; No Child Left Behind, 2001). One effect of this trend in the formal school setting was the decreased time for recess and unstructured play (Dillon, 2006; National Parent Teacher Association, 2006). In a full-day prekindergarten classroom, teachers may feel pressured to maintain this academic momentum and decrease or exclude the necessary time for play, which may ultimately be the impetus for the social and personal development of their students. A study published in 2015 concluded that children with greater executive function skills at the onset of school were more likely to participate in behaviors that were consistent with successful adaptation to the classroom environment and to engage in behaviors that ultimately facilitated academic achievement (Nesbitt, Farran, & Fuhs, 2015).

Developmentally, another facet that may impact the attainment of social and personal skills of those attending full-day prekindergarten relates to the physical well-being of a child. Recommendations by researchers suggested children at 48 months of age should get 1 to 2 hours of napping per day in their own bed (Barnard, 1999; Carno, Hoffman, Carcillo, & Sanders, 2003; Scheers, Rutherford, & Kemp, 2003). The Code of Maryland Regulations does not mandate specific regulations on napping requirements for prekindergarten students, so local school systems control any established regulations or policies regarding rest time for prekindergarten students (Md. Code Ann., 2014). Therefore, some full-day school settings may not be providing the recommended amount of time needed for a child to sleep.

In 2004, Anne Arundel County Schools Chief Eric Smith declared a nap-discouraging prekindergarten program. Smith's mission for discouraging this rest time was to make low-income students competitive with their wealthier classmates. "Instructors of 4-year-olds have a golden opportunity to prepare them to enter kindergarten competitive with their peers, so teachers in this program focus primarily on language development and reading readiness" (Smith, as cited in Britt, 2004, p. 1). Yet, participation in a full-day of instruction with minimal time to physically relax may begin to impede a young child's social and personal development. The role of napping in cognitive development has not been studied in preschoolers, but based on the trends in napping for toddlers, it may be speculated that preschool children have an increased diurnal sleep drive and often have difficulty maintaining wakefulness for a full school day (Lam, Mahone, Mason, & Scharf, 2011). Similarly, an increased incidence of sleep problems accrues in preschool-aged children with ADHD-like symptoms (Lam et al., 2011). This issue is potentially important because if premature nap restrictions lead to

decreased alertness, adverse impacts may arise in a child's ability to learn or use appropriate social and personal skills in the classroom.

Another consideration regarding the findings of this study suggests a full-day of instruction may not be the most developmentally appropriate practice for a student of this age. Finnish schools are one example. The Finnish educational system continues to receive substantial media attention for their consistency in academic performance, evidenced by the Programme for International Student Assessment (OECD, 2015). Yet what they consider prekindergarten begins at the age of 6, compared to the starting age of Maryland prekindergarten students at the age of 4 (Walker, 2015).

A 2015 study found that a 1-year delay in the start of school dramatically reduced inattention and hyperactivity at the age of 7. This study suggested “children who start school at a later age benefit from an extended period of informal, play-based preschool that complements language development and the capacity for ‘self-regulation’ of cognitive and emotional states” (Dee & Sievertsen, 2015, p. 2). An emphasis on the quality of interactions and social engagements between children and the adults in their lives must be considered as well as the extent to which those opportunities are age and developmentally appropriate for a full-day setting.

In addition to age concerns and the structured settings of full-day programs, other barriers may exist that restrict prekindergarten children from receiving the necessary socialization in a full-day formal setting. A study in 2012 of nine focus groups found that teachers felt pressure to prioritize academic classroom learning over outdoor and active playtime (Copeland, Sherman, Kendeigh, Kalwarf, & Saelens, 2012). When given additional time, teachers felt the need to incorporate cognitive concepts, even incorporating those skills into structured play opportunities rather than allowing students

free socialization time. The authors of this study also found that because many children were in school for such long hours, they had little time for socialization outside of the school setting (Copeland et al, 2012). With children limited to safe outdoor places to interact, the time in nonparental care is even more critical for obtaining socialization opportunities.

Research conducted by Bodrova and Leong (2001) revealed that in classrooms where children spent 50 to 60 minutes of a half-day program in play, supported by teachers' use of the Vygotskian theories to enhance socialization, children scored higher in many skills than those in control classrooms. As teachers continue to feel the academic pressures associated with prekindergarten programming and alignment with current Maryland College and Career Readiness Standards for prekindergarten, the focus on cognitive assessment may take precedence, and the focus on social and personal skills may weaken. The inferred expectation of teachers is the responsibility for developing these skills in students, yet the majority of professional development encompasses instructional practice related to the Maryland College and Career Readiness Standards and not on social and personal skill-based instruction (MSDE, 2015c). When students attend full-day public prekindergarten, typically there is an additional 3.5 hours of time to embed these skills. Yet, without adequate professional development on the developmentally appropriate social and emotional practices of young children for teachers and administrators, a building administrator cannot assume teachers know how to develop these skills in children. A continued understanding of developmentally appropriate instruction and length of day for prekindergarten is essential when implementing programs that augment social and personal readiness of students.

## **Recommendations for Further Research**

The literature review informed recommendations for further research along with the theories of Vygotsky (1978) and Bandura (1977), and the analysis of data collected from this dissertation. Future studies would be advantageous in further developing and informing investors and school systems in the most appropriate programming for social and personal school readiness of prekindergarten students. Recommendations include:

1. Longitudinal research would be beneficial in capturing additional data regarding social and personal school readiness in that it could capture both pretest and posttest data and would further address the findings of this research in regard to how half-day and full-day prekindergarten affects those designated as FARMS. Researchers demonstrated that all students benefit from various prekindergarten experiences, but a study by Hair, Hanson, Wolfe, and Pollack (2015) confirmed the necessity to focus on those first who are designated as low-income. The longitudinal study of magnetic resonance imaging scans of 389 typically developing students resulted in evidence that suggested poverty influences structural brain development. Researchers supported the notion that “households below 150% of the federal poverty level should be targeted for additional resources aimed at remediating early childhood environments” (Hair et al., 2015, p. 2).
2. A study involving parent surveys, interviews, or focus groups pertaining to their social activities and personal involvement in which parents engage with their children, correlating those participating in half-day or full-day prekindergarten, may shed some light on missed opportunities for socialization in a formal full-day setting. Children attending half-day programs may have additional opportunities

to interact and communicate one on one with an adult when they are not competing with other students for individualized attention. Conceivably, these individualized conversations with adults may lead to topics supporting social and personal decision-making skills. Between mealtime, extracurricular activities, and bedtime, children who spend a full-day in prekindergarten may not have as much time to simply converse with an adult as those who only spend a half-day in school.

3. Further research is needed to determine if there is a correlation between hours in prekindergarten programming and the impact on the attainment of social- and personal-readiness skills of FARMS versus Non-FARMS students. More studies are needed to support the appropriate duration of a universal design for social- and personal-attainment skills for all students, regardless of economic background. Research is available that reveals students from all socioeconomic levels benefit from prekindergarten, but those from low-income and minority families continue to show the most academic gains (Gormley, 2005; Magnuson, Ruhm, & Waldfogel, 2005). When considering cost-effectiveness of prekindergarten programming, school systems would want to know how duration and social attainment between participants of middle- and high-income families correlate.
4. A replication of this study would add to the strength of the findings of this dissertation research. In addition to a quantitative study, a qualitative portion could examine program quality and perspectives of stakeholders in differing programs across counties, states, and countries.
5. In addition to the subgroups included in this study, a closer look at gender and

students-with-disabilities subgroups may give those invested in the implementation of prekindergarten programming additional information. A recently published study in Maryland purported that when examining gender, boys were more likely to exhibit social and behavioral skills that were inadequate for school readiness (Bettencourt, Gross, & Ho, 2016).

6. A final recommendation for further research is the implementation of a similar study design with an added component that studied the differences in curriculums across the programs involved in the study. Although all Maryland school systems implement the Maryland College and Career Readiness Standards, programs may use a multitude of curriculum resources to meet those standards (Maryland State Department of Education, 2015b). Curriculums may vary in the approach and depth of instruction surrounding social and personal skills. An examination regarding those differences may demonstrate the impact those resources have on social and personal skill attainment.

### **Limitations**

It is imperative to note that this study has several limitations, most of which have been formerly addressed. This quantitative study is not intended to be generalizable to a larger population when determining effective programming. The study merely addressed the social and personal acquisition of participants over the course of 1 academic year and one test administration.

### **Summary**

When evaluating any program's effectiveness, it is important to recognize the mixed nature of the research findings and supported literature presented, rather than prematurely basing any high-stakes decisions on a single study. The research presented in

this study acknowledges the necessity for investments in prekindergarten, and recognizes that those investing must continually examine specific aspects, such as the duration of the school day, to maximize the effectiveness of programs. As school systems continue to expand access to prekindergarten programming, evaluating the impact duration has on student success is vital.

A comprehensively designed plan that promotes academic and nonacademic student successes is necessary in all educational programming. The significance of this study and similar studies promotes the importance of early recognition of deficits that could present a lifetime of inequality and challenges for a child. It is important to continue to study the appropriate duration of the prekindergarten day when it may influence children in their most malleable early years of life.

Social skills have proven to be a strong indicator of future academic success. This study has demonstrated the importance of paying close attention to the duration of prekindergarten day to best attain those social- and personal-readiness skills (Committee on Integrating the Science of Early Childhood Development, 2000). As families and school systems choose the optimal early educational programs for children, the American Academy of Pediatrics suggests settings that “offer more than academic preparedness” and to be “attentive to settings which attend to the social and emotional needs of children” (Ginsburg, 2007, p. 188). Little empirical work has focused on the effects of exposure to prekindergarten programs by duration. Researchers suggest that further exploration of exposure to different types of preschool settings and different durations in those settings would be valuable information when determining effects on cognitive and social outcomes (Loeb, et al., 2007). The focus of previous research surrounding prekindergarten appears to be mostly academic in nature. This dissertation research

recommends putting an additional focus on the duration of the prekindergarten day as duration may be the most indicative programming component in determining the social and personal readiness needed for future achievement.

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## Appendix A – Institutional Review Board Approval



*One University. A World of Experiences.*

INSTITUTIONAL REVIEW BOARD (IRB)  
PORT LIBRARY  
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F 301.687.7098  
E-MAIL: [irb@frostburg.edu](mailto:irb@frostburg.edu)

To: Stacy Henson  
From: Beth Scarloss, IRB Chair  
Date: Wednesday, December 02, 2015  
Subject: Notice of Protocol Review

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We have received your human research protocol application and reviewed it.  
Thank you for submitting this proposal in compliance with FSU and USM policy.

**Title:** The Relationship Between Half-Day and Full-Day Pre-Kindergarten and Social and Personal School Readiness

**Number Assigned:** H2016-020

**Received on:** 11/30/2015

The Institutional Review Board has determined that the research you describe in your application qualifies as research that is exempt from the Code of Federal Regulations (45 CFR 46) under §46.101(b). As long as you follow the protocol described in your submission, no further action on your part is necessary at this time. You will be reminded annually to submit a statement confirming that this research a) is ongoing or b) has been terminated.

If you make substantial changes to this project or begin another research project involving human participants, the IRB will be required to review that project, as well.

We greatly appreciate your cooperation with the IRB. If you have any questions or concerns, please feel free to contact us at [IRB@Frostburg.edu](mailto:IRB@Frostburg.edu).

Reviewer Comments:  
(None)

## Appendix B – Letter Requesting Permission to Use Data



10435 Downsville Pike  
Hagerstown MD 21740  
301-766-2800

Dr. Rolf Grafwallner,

March 30, 2015

Per our phone conversation a few weeks ago, I am requesting permission, from the Maryland State Department of Education, to receive data regarding MMSR data from the 2013-2014 school year. Currently, I am a doctoral student at Frostburg State University and the Coordinator for Early Learning for Washington County Public Schools. My study is a quantitative, correlational study comparing the Social and Personal Outcomes of Kindergarten students that participated in full versus half-day, public Pre-Kindergarten programs.

The data that I am requesting is the 2013-2014 MMSR data from the following counties as they provided both full and half-day programs. I will only be studying school systems that offer both half and full-day programs five days per week.

My study will include an analysis of race (Caucasian and African American), race (Hispanic), and students participating in the Free and Reduced Meal Program (FARMS). The important piece will be the data field of prior full or half-day participation in public Pre-Kindergarten as that is what I'm ultimately comparing and studying.

The data analysis will not occur until completion of the proposal defense and approval by the IRB to continue my study. However, in an effort to complete the proposal and remain on a tight timeline, I am requesting the utilization of this data at this time.

Thank you so much for the consideration of this request and for conversing with me regarding this study. The data will assist my study, which will add to the body of literature regarding effective Pre-Kindergarten programming. I will be happy to share my study with you upon completion. Additionally, in an effort to protect the confidentiality of this data, I respect your suggestions for the retrieval of this data.

Sincerely,

Stacy Henson

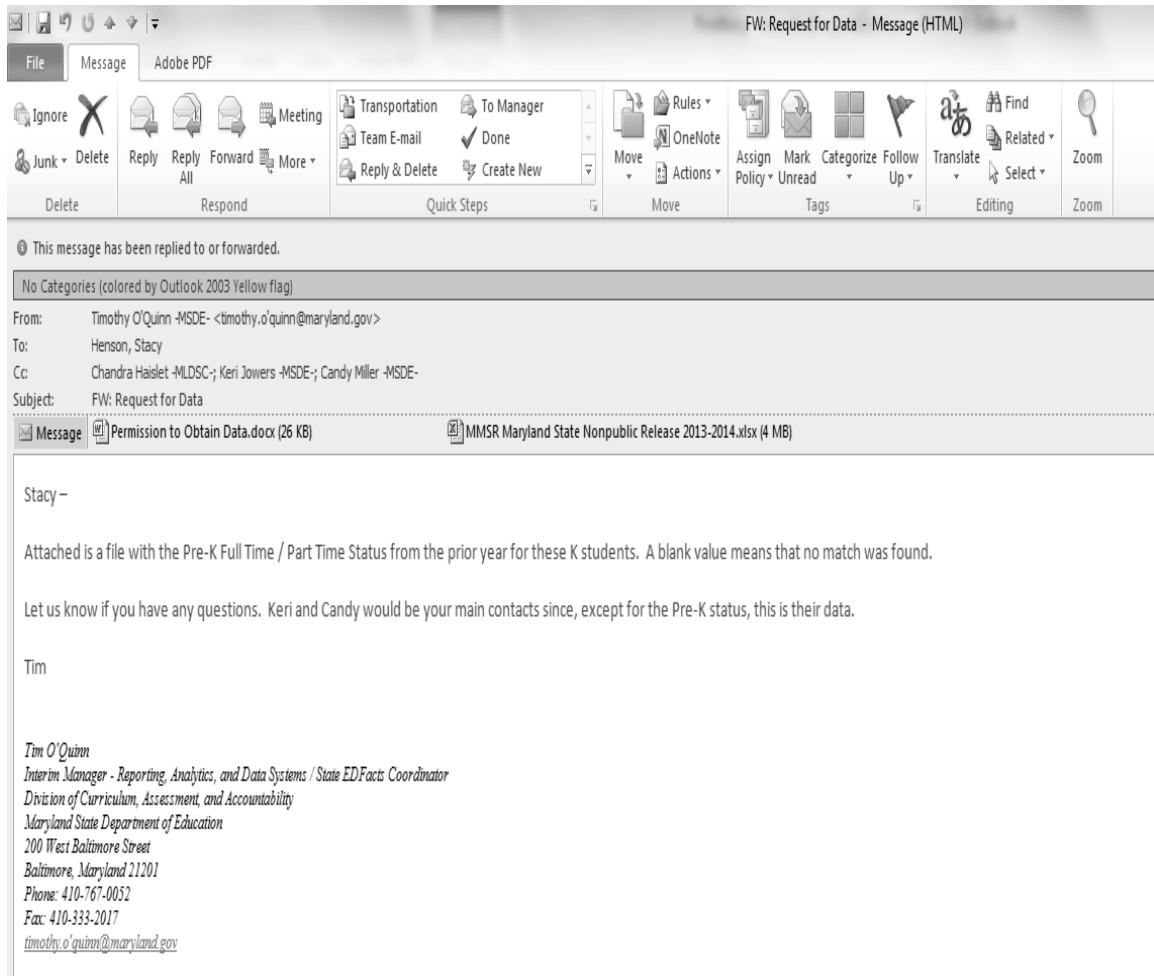
Coordinator for Early Learning

Washington County Public Schools

301-766-8722

[hensosta@wcps.k12.md.us](mailto:hensosta@wcps.k12.md.us)

## Appendix C – Permission to Use Data



## Appendix D – National Institute of Health Certificate

