Effectiveness of a Summer Intervention Program on Improving Kindergarten Readiness in At-Risk Students

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by

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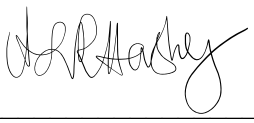

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ABSTRACT

While a wealth of knowledge exists supporting the need for early intervention in improving kindergarten readiness, very few programs have offered an evidence-based solution to providing remediation for at-risk children demonstrating weak academic or social readiness skills during the kindergarten registration process. Often, children who are identifies as having weak readiness skills at kindergarten registration will need to wait until school begins in the fall to receive intervention, putting students further at-risk for school failure. The United Way of Mercer County's Success By 6™ program offers a 6-week intervention for students identified during registration as having poor readiness skills. This study determined the effectiveness of Success By 6™ on improving both academic and social readiness skills deemed necessary for school success. A total of 216 students completed the Kindergarten Readiness Test at the beginning and the end of the program. Teachers also rated students' social emotional learning using the Social Skills Improvement System Social Emotional Learning Progress Monitoring Scales. Results from paired sample *t*-tests indicated a statistically significant improvement in students' academic readiness, $t(215) = 16.58$ $p < .001$, after completing the program. Students also made statistically significant gains in social emotional skills needed for kindergarten readiness, $t(231) = 22.13$, $p < .001$, after participating in the program. Both calculations revealed large effect sizes ($d = 1.13$ and 1.45, respectively). Implications of this research can effect social change at local, state, and federal levels in order to expand evidence-based practices in early childhood education.

Keywords: kindergarten readiness, Success By 6™, summer intervention,

DEDICATION

This paper is dedicated to my son and husband who continue to inspire me to follow my dreams. Thank you for your support through this and always!

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Chapter I: Introduction

A child's readiness for kindergarten may be one of the most important factors contributing to school success or failure. The present study evaluates the effectiveness of a summer intervention program on overall kindergarten readiness. The United Way is a national nonprofit organization that provides assistance to community members through a variety of programs. Each county has their own branch of the United Way and offer local program support. One of these is the Success By 6™ program which includes funding to local school districts within the county to help prepare at-risk children for kindergarten. In 2004, several Mercer County, PA superintendents sat down with the executive director of the United Way of Mercer County and answered one simple question: "If you had the financial backing of the United Way, what one thing could we do to make sure each child succeeds in school" (Billak, 2021, p. 2). Unanimously, the superintendents agreed that investing in programs which promote kindergarten readiness would make the greatest difference in regard to school success. This was the framework for the modern-day Success By 6™ program in Mercer County, PA.

Every spring, school districts prepare to register the next fall's kindergarten class. As part of this registration process, students are generally screened for both academic and social emotional readiness by district teachers. Numerous risk factors contribute to a lack of school readiness. Nationally, 15% of the children under the age of six in the United States live in poverty and less than half of these students are ready for kindergarten at their fifth birthday (Children's Defense Fund, 2021). During the 2021 kindergarten registration process, Mercer County principals reported that 47% of entering kindergarteners were lacking the prerequisite

skills necessary for success within Mercer County School Districts (Billak, 2021). With such a great need, it is essential to determine what evidence-based practices can be implemented to counteract this statistic. This information led to the need for the current study and the research questions listed below.

Research Questions

This study aimed to answer the following research questions:

(1) What is the impact of the United Way of Mercer County's Success By 6™ program with regard to improving academic kindergarten readiness for at-risk students?

(2) What is the impact of the United Way of Mercer County's Success By 6™ program with regard to improving a child's academic skills in each of the areas assessed (i.e., letter recognition, visual discrimination, phonemic awareness, listening comprehension, vocabulary, numbers and operations, measurement, geometric concepts)?

(3) What is the impact of the United Way of Mercer County's Success By 6™ program with regard to improving social emotional skills needed for kindergarten readiness?

This chapter outlines the problem of interest for the current study: the lack of kindergarten readiness for students in at-risk populations. The results of this investigation may have implications for individual school districts and the county as a community and will be discussed in the organizational context section of this chapter. Then, existing research on current preschool practices will be introduced in order to provide context for the effect preschool interventions have on kindergarten readiness. Next, the theoretical framework behind early childhood investments and their contribution towards continued school success will be discussed. Several limitations to this study were identified prior to the implementation of the procedures

and will be listed in the final topic in this chapter. Finally, frequently used terms and abbreviations will be explained.

Background

The United Way of Mercer County's Success By 6™ program provides a 6-week summer camp designed to improve readiness skills. Classes are held in each of the 12 participating school district buildings and are taught by either two district teachers or a combination of a district teacher and a Head Start or Pre-K Counts teacher. Two certified educators provide 135 hours of instruction in the summer prior to students entering kindergarten. Participants are evaluated at the beginning and ending of the program as a means of measuring progress and identifying remaining areas of need to address upon entering kindergarten. The current investigation further examines the results of these assessments to determine how improvements affect overall kindergarten readiness.

The Success By 6™ program is different from any other preschool programs in the area. The biggest differences are in the timing and selection process. The 6-week program is held only in the summer before a student enters kindergarten. Children are selected by local principals to attend the program based on the results of a kindergarten screening. Children may be selected for a variety of reasons. First, priority is given to students who did not attend a preschool program. Students who score academically below average on the kindergarten screening are also invited. Other reasons students may be invited include having a documented or suspected disability, demonstrating some social emotional or behavioral delays, and attending Head Start and Pre-K Counts programs. The program is also co-taught by two highly qualified teachers in one of the district facilities. This allows school districts to have access to an intervention service and provide familiarity to future kindergarteners with the district's curriculum and facilities.

Readiness skills are defined as skills a child needs in order to be successful in a school-age learning environment. For example, a child's vocabulary acquisition in preschool typically predicts later reading abilities into middle school (Friend et al., 2018). A child's visuomotor skills often predict future math achievement (Kurdek & Sinclair, 2001). Therefore, it is critical that students enter kindergarten having these readiness skills in place in order to meet academic standards.

Problem

Unfortunately, after a school has identified a child who is behind in regard to readiness skills, few options exist for intervention prior to entering kindergarten. It is often too late for parents to enroll in a private or public preschool and school districts have not previously provided intervention until school started in the fall. Early childhood is a critical time for development so the six months between identifying a delay and providing intervention wastes valuable time (Twardosz, 2012). Educational administrators are looking for an effective intervention to help students in the time between kindergarten registration in the spring and kindergarten entrance in the fall. In an interview with Dr. Andrew Kemper, Assistant Principal in a participating school district, he reported the following:

> When needs can be identified at the time of kindergarten registration screening, it is crucial that interventions can be planned prior to the start of kindergarten. These needs, most often in the form of academic skill deficits, can be caused by a variety of factors ranging from a lack of pre-K, cognitive deficiencies, birth date, et cetera. Regardless of the reason behind the deficit, the result is a student beginning their educational journey with a steeper mountain to climb than their peers. Often a brief, targeted *pre-intervention* can quickly address the identified need and close the gap between the student and their

> incoming peers. Waiting until the start of kindergarten makes things increasingly difficult because many districts do not offer targeted interventions at a young age, and those that do aren't able to start them until well after the school year begins. Offering programs between kindergarten registration and the start of the school year provides those students identified with skill deficits the best chance at immediate success. (A. Kemper, personal communication, February 10, 2021)

Therefore, the problem being examined in this study is "Does the United Way of Mercer County Success By 6™ program offer an effective program for improving a child's kindergarten readiness?" This research question has political and financial implications as well and will be discussed in the organizational context section.

Organizational Context

The federal government's interest in improving our early childhood education began with the passage of the Elementary and Secondary Education Act (ESEA) in 1965. The purpose of this act was to increase educational opportunities for all children by providing funding to help the most vulnerable students (Brenchley, 2015). The reauthorization of ESEA in 1975, the Individuals with Disabilities Education Act (IDEA) introduced legislation that mandated that preschoolers with disabilities receive a free and appropriate public education. In 2001, another reauthorization of ESEA, known as the No Child Left Behind Act, increased standards and accountability for school districts. In 2014, Pennsylvania adopted early learning standards for preschool, which are still used to this day (Office of Child Development and Early Learning, 2014).

Early childhood education continues to be a point of political debate. On January 14, 2020, the Democratic Presidential Debate revealed that all democratic candidates have specific

plans for expanding access to prekindergarten education. Each candidate referenced the overwhelming evidence that quality education during the first five years of life significantly improves a child's overall health and development (Joughin, 2020). Senator Elizabeth Warren stressed the need for universal prekindergarten education for all students, especially those living in poverty. She also stressed the need for investing in preschool teachers to attract quality educators. Pete Buttigieg argued that many families cannot afford a quality preschool education without the federal government's assistance. While preschool education may appear to be a unilaterally democratic campaign, early preschool intervention programs have bipartisan support. Congressman Timothy Bonner, from the 8th district for the Pennsylvania House of Representatives stated his support for such programs.

> Early childhood intervention for at-risk children is vitally essential to a child's educational achievements, social interaction, and long-term success in life from many different perspectives. As a nation, we must reach our disadvantaged children as early in life as possible. I cannot think of a better investment in our children's future and their needed role in our nation than assisting disadvantaged children at the earliest possible age. Preschool programs are truly an investment in the child, our community, and our nation. (T. Bonner, personal communication, February 8, 2021)

The effects of investing in early childhood education reaches far beyond the immediate impact on kindergarten readiness. In 2014, President Obama's Council of Economic Advisers released their findings on the return of investment of preschool education. Investing in preschool education yields $8.60 for every $1 spent and increases a person's adulthood earnings by 1.3%–3.5% (Juhn, 2014). This means that the cost of the investment would yield results that can pay for the original investment.

These investments would help to close the achievement gap between white children and minority children. Research shows that minority children and children from economically disadvantaged families start kindergarten significantly behind their peers (Ansari & Winsler, 2016; Bailey, 2013; Dinehart et al., 2012; Duncan et al., 2007). Therefore, investing in a quality preschool education program that aims to reduce the achievement gap for students who are at-risk for academic difficulties would make significant contributions to not only the students served, but also to the district, families, and community at large. There is a large body of research that supports the investment in early childhood; this will be discussed in the next section.

Existing Research

The review of research begins with an overview of neurodevelopment in children. The brain is more malleable in early childhood than in any other phase of human development. Brain imaging scans have shown that quality language exposure within a supportive environment helps create a brain that is ready to learn. Brains also appear to go through critical periods for acquiring skills. Early intervention is extremely effective during these critical periods of development for advancing prerequisite skills for kindergarten (Twardosz, 2012).

The definition of kindergarten readiness has grown to become a multidimensional view of academic skills and social emotional development (Hatcher et al., 2012). Children are typically screened for readiness skills during the kindergarten registration process. Skills included in these screenings are vocabulary development, letter naming, visuomotor skills, print knowledge, and phonological awareness. Unfortunately, certain groups of children (e.g., children from rural communities, economically disadvantaged families, minorities) are at greater risk for having poor readiness skills (Bailey, 2013; Kenne et al., 2018; Lipina, 2016; Young et al., 2002).

A quality preschool program can be very effective in preparing at-risk children for beginning kindergarten with skills equivalent to others.

This research was designed as a quantitative study. A paired samples *t*-test was conducted for the Kindergarten Readiness Test (KRT) results completed at the beginning and the end of the Success By 6™ program. Social skills were also evaluated using the Social Skills Improvement System Social Emotional Learning Edition Screening/Progress Monitoring Scales (SSIS SEL). These scales use a pre- and post-Likert rating between one and five (1 = *needing intensive intervention* to 5 = *no intervention needed*). to assess students in the areas of self-awareness, self-management, social awareness, relationship skills, responsible decision-making, motivation to learn, reading skills, and mathematics. *T*-tests were completed to determine if growth was statistically significant. These results have a significant impact on multiple organizational contexts. Results were shared with local school district administrations and local government officials.

Theoretical/Conceptual Framework

This study makes a significant contribution to the local community. The United Way of Mercer County Success By 6™ program provides this intervention free of charge to families and districts. In order to raise enough funds to cover the costs of operation, the United Way of Mercer County accepts contributions through the Educational Improvement Tax Credit Program. Previous assessments given through this program were curriculum-based. While these assessments yielded quantitative results, data was not standardized and could not show that overall readiness improved compared to a national sample. This administration of the KRT yielded the needed data. Results from this study can be shared with supporters of the program to justify contributions. Additionally, with the information that investments in effective early

childhood educational programs yield high rates of return on investments, the community would benefit from supporting such programs.

Delimitation

While every effort was made to reduce limitations of this study, several variables could not be accounted for in its design. For example, these results could not be compared against a control group. Each district in the program chooses their own students using different methods of screening so a control group could not be identified. The KRT provides an overall readiness score but does not have data on its reliability or validity outside of publisher normed data, so it has not been confirmed through outside studies. However, research explained in the literature review was used to justify the use of these subtests for identifying readiness skills.

Definition of Terms

The fields of education and speech-language pathology are rife with jargon. In some cases, different areas of the field use disparate terminology to describe similar concepts. The following terms and acronyms are important in the current study. Terms are listed in alphabetical order.

Achievement gap: Significant difference in academic achievement between white students and minority students.

At-risk: Groups of students who have a greater chance of beginning kindergarten without skills necessary for success.

Critical periods: Sensitive periods when certain behaviors will not develop if not stimulated during these phases.

Economically disadvantaged: An individual whose ability to compete in the free market is impacted by a lack of income.

Effectiveness: Statistically significant improvement in skills.

Inhibitory control: An executive function that prohibits responses to stimuli.

Intervention: Services provided to students and meant to teach a specific deficient skill.

Local Education Agency (LEA): Administrator from a school district who can make educational decisions on behalf of the district.

Nativist: Theory that language is innate and acquisition occurs as a natural part of development. In education, nativists do not believe that intervention can improve a child's kindergarten readiness.

Neuronal pruning: A process that takes place in early childhood and involves the elimination of unneeded or immature synapses in the brain.

Phonological awareness: A metacognitive skill that involves identifying and manipulating sounds in language.

Print knowledge: A child's awareness of text.

Readiness: Skills that students need to be successful upon entering kindergarten.

Sensitive periods: Time periods in which experiences can have a strong impact on development.

Social competency: The ability to understand and act appropriately in social situations.

Synapses: A junction of two neurons in the brain where neurotransmitters are exchanged.

Visuomotor: Coordination of motor skills with visual perception.

Summary

The present research involves the efficacy of a summer intervention program on kindergarten readiness. This social issue has bipartisan support and makes a huge economic impact on society. This research will help support the need for expanded early childhood

education and intervention. In the following chapter, the existing research on kindergarten readiness skills will be evaluated and summarized. Chapter 3 will explain the research design and methodology used to measure readiness. Next, chapter 4 will explain the results of the study. The final chapter will explain the reasoning and discuss implications of the findings.

Chapter II: Literature Review

Purpose

The implementation of common core standards throughout the United States has led to increased academic demands on kindergartners. Early intervention programs such as Head Start, Pre-K Counts, and other preschool programs shoulder the burden of increasing readiness skills in our pre-K population. However, financial restrictions on participation in these programs leads to a large number of children whose families earn too much to qualify for government-funded programs but are unable to afford the rising costs of a quality preschool. This leads to children entering kindergarten with little to no preschool experience.

Even as one group of kindergarteners enter school, districts around the country begin to prepare for the next cohort of rising preschoolers. Often, school districts perform screenings to determine baseline information regarding each child's overall health (e.g., hearing and vision status) and academic baseline. These tests enable the school district to plan which children may need additional support throughout the school year. Unfortunately, districts often do not have many options for helping the student progress in the time between kindergarten registration and the first day of kindergarten. Research has determined that early childhood is the most beneficial time to provide intervention, as discussed below (Blair, 2002; Carey, 2001; Dinehart, 2012; Duncan, 2007; Finocchiaro, 2016; Lally, 2012). The Success By 6™ program, conducted by the United Way of Mercer County, aims to capitalize on the time period between a school district detecting a delay in readiness and the first day of kindergarten. Several local United Way agencies run summer programming similar to the United Way of Mercer County's program. Each agency collects donations under the Early Education Income Tax Credit to run a locally operated program. Participating programs follow this format with minor differences. This study aims to

examine the effectiveness of the United Way of Mercer County's prekindergarten summer intervention program on incoming kindergarteners' school readiness.

Need for the Study

Capitalizing on early learning is paramount to improving the lives of children and families. Investment in childhood education yields a $4–$9 return on investment to society (Why-invest-high-return-on-investment, 2015). Through investing in early childhood education, a child's chances of graduating high school increase significantly, which yields better paying jobs and support for the community. In fact, increasing early childhood education may be the best way to combat poverty (Duncan et al., 2007). The United Way of Mercer County's mission is to "lift families out of poverty" (Mission, n.d., para. 1). To accomplish this goal, the aim of the Success By 6^{TM} program is to provide a quality prekindergarten experience for children identified as being at-risk during kindergarten registration. This study will examine the effectiveness of this program and its impact on kindergarten readiness.

Many factors contribute to children being at-risk upon starting kindergarten. Children who have special needs, come from economically disadvantaged families, or display language delays that affect their academic achievement can be at-risk for learning delays when beginning kindergarten. Other factors such as gender, favoring better kindergarten readiness in males verses females (Conti et al., 2016), and cultural and linguistic diversity (Ansari & Winsler, 2016) also serve as risk factors that inhibit kindergarten success. While many prekindergarten programs exist throughout the county, school districts identify many students through the kindergarten registration process who either did not attend preschool or did attend preschool but continue to qualify as at-risk. In the five to six months between identifying an at-risk child at kindergarten registration and the start of kindergarten in the fall, school districts have limited time and options

to provide intervention. The Success By 6^{TM} program bridges this gap by allowing districts to provide intervention to children in need before school begins. This allows children to begin school in the fall having more of the skills needed for success. The effectiveness of this program will benefit both school districts and families.

Search Strategy

The search strategy for the current investigation began with an outline of literature that referenced early childhood education and kindergarten readiness and was used to guide database searches. Keywords included, but were not limited to kindergarten readiness, brain development in early childhood, early intervention, poverty and prekindergarten experiences, early literacy, early numeracy, language development, and kindergarten transitions. Databases used in the search included ProQuest, ERIC, EBSCOhost, and SAGE. Google Scholar was also used to find relevant information. Sources included peer-reviewed journal articles, executive summaries, books, and dissertations. Over 100 sources of information were collected for inclusion in this study. Dates ranged from early literature in 1999 that was corroborated through other resources to studies as recent as 2019. Approximately 77% of sources of information were from the last 10 years.

Brain Development and Early Childhood Experiences

Recent technological advances have allowed neuroscientists and researchers to better understand how early learning and experiences affect a child’s future school success. Researchers suggest that promoting proper development of a baby's brain begins in utero. Essentially, all of a human's 100 billion neurons are formed prenatally, but not all neurons created prenatally will survive (Twardosz, 2012). In fact, approximately half of the neurons created prenatally will not survive. If neuronal development in the prenatal brain is interrupted

through exposure to toxins, malnutrition, or substance abuse, this could result in psychopathologies such as schizophrenia or intellectual disability (Carey, 2001). This demonstrates how important prenatal care is to a child's later success. In fact, prenatal care is considered to be just as important to a child's development as the experiences a child has after birth (Halfon et al., 2001). Children who develop disabilities related to poor prenatal care will be at-risk for poor kindergarten readiness.

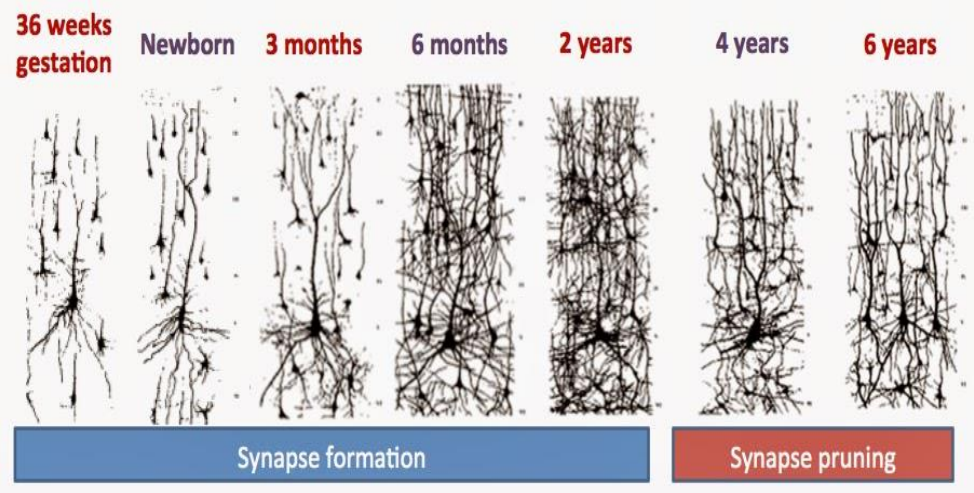
Neurons will migrate to the cerebral cortex to create six layers that will later differentiate into various functions once a child is born (Twardosz, 2012). During the first three years of life, synaptic connections double to 1,000 trillion; humans do not experience this degree of explosive growth at any other time. These synaptic connections are influenced by a child's experiences. Neuronal pruning, which is the elimination of nonreinforced synapses, occurs between the ages of 3–15 years (Halfon et al., 2001). While the human brain appears to be organized and efficient, infant brains do not begin that way. Featherstone described early brain development in the following manner, which reflects the information in Figure 1:

> Imagine a new city. It needs roads connecting all the houses and buildings. If roads were built like the nervous system builds connections between cells, then every new city would start by crazily building roads connecting everything. There would be too many roads, and the arrangement might not be very useful. There might be 15 roads to one house, and 2 roads to another, and maybe no roads to another. There might be a bunch of roads between places that will never need them. How to fix this mess? Over time, the roads that are not used are removed, leaving just the roads that carry traffic, and more roads between places that carry the most traffic. In the end, it looks like everything was

> elegantly planned. Everything is very efficient. But actually, it was a result of crazy ambitious road building followed by 'roadway pruning.' (Arora, 2019, p. 85)

Figure 1

Synaptic Formation and Neural Pruning



Note. Reprinted from *What's Really Happening in My Child's Brain*, by M. Fitzgerald, no date (https://tinkergarten.com/blog/whats-really-happening-in-my-childs-brain).

This selective pruning is essential for emotional and cognitive development. Timing of a child's experiences is also essential to the brain's development. Children experience critical periods of quick neuronal growth and activity. During these critical periods, development of a particular area is often abrupt and is far more sensitive to outside experiences (Finocchiaro, 2016; Halfon et al., 2001; Twardosz, 2012). Additionally, brains are also prone to sensitive periods, which are longer in duration. Sensory information is processed and learned during one of these sensitive periods. Language development is also prone to sensitive and critical periods. Eventually, these periods of increased connectivity will slow, making young brains less susceptible to experiences and interventions. Therefore, interventions that take place during these critical and sensitive periods are more efficient and effective (Halfon et al., 2001).

Experience-dependent experiences are unique to an individual's particular circumstances. Learning is considered to be an experience-dependent experience that occurs throughout a lifetime (Twardosz, 2012). The goal of development is not to develop sensory and motor skills on a specific timeline. Rather it is to "construct experiences and social interactions that build the neural foundation for literacy and learning" (Halfon et al., 2001, p. 12). Given that the prefrontal cortex, which houses higher-functioning processes such as attention and inhibitory control, is susceptible to experiences, it is logical to provide intervention in the preschool years to children who display weaknesses in these areas (Twardosz, 2012).

There appears to be a sensitive period for stress and trauma as well. Children who experience maltreatment and chronic childhood stress will develop brains that have heightened responses to threats (Twardosz, 2012). "Students from low-income households score, on average, 1.3 standard deviations lower in literacy and math than their higher-socioeconomic status peers when they enter kindergarten and even lower in executive functioning skills" (Finocchiaro, 2016, p. 100). Research continually supports the claim that these achievement gaps can be overcome with an evidence-based curriculum plus a nurturing and supportive environment (Allee-Herndona & Killingsworth Roberts, 2018). This means that children will benefit from involvement in high-quality preschools that use rigorous curricula and promote an array of language-rich experiences. High-quality preschools are beneficial to children who are lacking in these experiences in non-academic tasks. Children in high-quality preschools have shown improvements in attention, memory, and inhibitory control (Raver & Blair, 2016).

The research on brain development is clear that an urgency exists with respect to the need for appropriate intervention as early as possible. Critical periods determine times that children's

brains are primed for experiences. Intervention and high-quality preschools can have a direct impact on a child's brain development.

Effects of Early Intervention

Research has consistently supported the impact of early intervention and early childhood education on school readiness. With the United States experiencing an increase in maternal employment, support has grown for a universal, free, and high-quality preschool program. Over 70% of Americans support legislation that would increase access to quality preschools for all children (Yoshikaw et al., 2016). While this form of childcare has become popular due to the increased need for childcare outside of the home, early childhood education continues to be supported for ethnically diverse children, children with special needs, and children from socioeconomically diverse populations.

Weiland (2016) examined the Boston Pre-kindergarten Program's effects on children with special needs. Children in the Boston Pre-kindergarten Program experience a rigorous curriculum of language, literacy, math, executive functioning exercises, and emotional regulation instruction. Results of the study found that children with special needs benefited from enrollment in the program, equal to or greater than improvements made over typically developing peers Weiland, 2016). The same effects were found with children from ethnically diverse or low-income households (Weiland, 2016). Ansari and Winsler (2016) used data from the Miami School Readiness Project to examine preschool effects on Black and Latino children. The study determined that Black and Latino children who participated in a publicly funded public-school based preschool demonstrated greater kindergarten readiness than children in private, center-based preschools or family childcare situations (Ansari & Winsler, 2016). However, center-based

preschools continued to out-perform family childcare on readiness levels (Ansari & Winsler, 2016).

Some evidence exists supporting the enrollment of boys versus girls in preschool programs. In a recent study, males with preschool experience consistently outperformed males without preschool experience. Females, however, outperformed males regardless of preschool experience (Sellers, 2018). Similarly, Taylor et al. (2000) determined that all children with preschool experience outperformed children without, regardless of gender, in the Physical and Personal domains of the Georgia Kindergarten Assessment Program. However, girls outperformed boys in the Social domain (Taylor et al., 2000).

One study reported small effect sizes with respect to the quality of preschools and a child's readiness for kindergarten. A meta-analysis of preschool quality found a small, yet statistically significant difference on the main effects of language and math outcomes for highly educated mothers and increased social skills for children with cognitive delays (Keys et al., 2013).

Attendance in a pre-kindergarten program may influence kindergarten readiness as well. Chronic absences in pre-kindergarten programs are associated with reduced school readiness and increase the likelihood of chronic absences in subsequent grades (Ehrlich et al., 2018). Students who do not attend regularly will not benefit from the intervention.

While the effects of preschool on kindergarten readiness are well-studied, preschool involvement may make other positive impacts on a child's family. A primary goal of Head Start and Early Head Start is not to solely teach the child readiness skills. The aim, rather, is to strengthen community and family partnerships. Research on parental involvement programs associated with Head Start and Early Head Start demonstrated that preschool experiences

positively influence caregivers by promoting less harsh discipline and encouraging the use of positive coping skills (Love, 2008).

Intervening early in a child's life can lead to multiple beneficial improvements. A rigorous curriculum can help children improve readiness skills in multiple areas. In the next section, an historical account of preschool interventions will be explored.

Historical Perspective of Preschool

The long-lasting effects of high-quality preschool intervention have been studied over many decades. Numerous studies have reliably documented the benefits from preschool interventions into kindergarten and longitudinal studies have documented the effects of intervention in preschoolers into adulthood. Below is a brief summary of landmark studies that demonstrate the importance of quality preschool education.

High Scope Perry Preschool Study

In 1962, a psychologist, David Weikart, conducted a randomized-controlled study at Perry Elementary School in Ypsilanti, Michigan. The study consisted of 123 preschool-age children randomly assigned to a preschool intervention program or a control group (Highscope, n.d.). The results of the study overwhelmingly suggested that the children attending the preschool program were more ready for kindergarten entry. Participants in this study have participated in several longitudinal studies to measure long-term effects of intervention. When these participants turned 40, a cost-benefit analysis was conducted. Societal benefits of higher tax revenues from higher earnings, lower criminal justice system expenditures, and lower welfare payments created a $12.90 return for every $1.00 spent on preschool education (Highscope, n.d.). These results have been used to develop preschool curricula and learning centers that are still currently in use.

Chicago Child-Parent Center and Expansion Program

In 1967, the federally and state-funded Chicago Child-Parent Center and Expansion Program was developed to assist children at-risk for educational underachievement in the Chicago area. Participants received comprehensive early childhood services including free breakfasts and lunches; health screenings; coordinated supervision from a head teacher, aide, parent resource teacher, and school-community representative; funding for professional development; and instruction with an emphasis on reading, math, and language (Reynolds & Temple, 1998). Original findings indicated that any involvement with the program yielded significantly higher achievement when matched with the comparison group (Reynolds, 1997). Subsequent findings from longitudinal studies have indicated that interventions that lasted multiple years were directly correlated with significantly higher reading and math achievement in seventh grade.

Carolina Abecedarian Project

Another study of historical importance in preschool education was the Abecedarian Project, which took place in 1972. The researchers in this study aimed to determine if intensive early preschool intervention services could prevent intellectual disabilities and school failure in socioeconomically disadvantaged children. This longitudinal study randomly assigned 111 children from disadvantaged families in either an experimental group, where participants received an intensive preschool intervention, or a control group. A positive correlation was found between intelligence quotients and the number of years of intervention the child received (Ramey et al., 1974). Campbell and Ramey's (1994) longitudinal study with these participants determined that effects on intellectual development and academic achievement gained through preschool intervention were maintained through age 12. Additionally, the academic benefit

gained through participation in the program was again found when the participants reached adulthood (Campbell et al., 2012). While social and economic benefits faded, children in this program achieved higher levels of education compared to a control group by age 30 (Campbell et al., 2012).

These studies help put into perspective the long history and wealth of evidence that preschool and other interventions implemented in early childhood have positive effects on academic achievement for at-risk children. Longitudinal studies continue to support the claim that early childhood interventions not only help at-risk youth become better prepared for kindergarten, but these positive impacts last well throughout the child's schooling and into adulthood. The next section explores the different theories and perspectives of kindergarten readiness.

What Is Kindergarten Readiness?

The definition of kindergarten readiness has been a widely debated topic in America, but can subjectively be defined as the child's academic, cognitive, social/emotional, physical, and behavioral preparedness for skills needed in kindergarten. Parents view preschools as preparatory schools for kindergarten and expect these institutions to provide foundational skills in reading, writing, and math (Hatcher et al., 2012). However, the definition of kindergarten readiness is not clear. This leads to misunderstandings between teachers, parents, and other professionals about what skills are necessary for a successful kindergarten transition.

Several predictors can be identified that lead to success in the areas of literacy, math, and social competence. An early predictor of literacy readiness skills is vocabulary comprehension. One study found that decontextualized vocabulary comprehension in the second year of life predicted kindergarten readiness in the fourth year of life (Friend et al., 2018). The correlation

between language skills and predicted reading skills continues beyond kindergarten as well. In fact, language acquisition continues to predict reading skills into middle school. Kurdek and Sinclair (2001) found that higher verbal skills in kindergarten predicted reading abilities in fourth grade. A child's oral discourse at age five has been shown to predict reading abilities by age eight (Griffin et al., 2004). Studies have also found that print knowledge and phonological awareness skills developed in preschool have a significant impact on decoding in later years (Friend et al., 2018; Griffin et al., 2004; Lonigan et al., 2000). In the area of mathematics readiness, higher visuomotor scores predicted fourth grade math abilities (Kurdek & Sinclair, 2001). The evaluation system used by the Mercer County Success By 6™ program measures both vocabulary and visuomotor skills to help determine readiness for kindergarten.

A preschooler's social competence can also influence kindergarten success. One study found social competence was associated with child self-regulation, social school-readiness, and self-esteem (Joy, 2016). Preschool can help build these skills. Children with challenging behaviors showed statistically increased school readiness in preschool programs than children who participated in family childcare situations (Johnson et al., 2019). These results supported the work of Blair (2002), who suggested that self-regulation skills foster improved school readiness. Early childhood programs that provide intervention for poor self-regulation skills foster improved self-regulation, math, and reading skills in kindergartners (Duncan et al., 2018). These social emotional skills are also a target of the Success By 6™ program. By using specific examples and strategies from pre-kindergarten standards in early learning, students show growth in these areas as measured by rating scales.

Several studies have examined how the teacher’s beliefs and perspective influence actions taken in the classroom. Large-scale studies have consistently correlated a teacher's belief

about a child in kindergarten with the child's achievement in third grade (Goldstein et al., 2016; Hatcher et al., 2012; Kurdek & Sinclair, 2001). Early studies suggest that a “teachable” child possessed the same social characteristics: low activity, high persistence, and low distractibility (Orth & Martin, 1994). However, current research has revealed that teachers do not value low-activity levels and prefer active learning. Miller and Goldsmith (2017) found that the majority of teachers valued a child's ability to attend, follow instructions, be cooperative, and not get easily frustrated. Inhibitory control appears to be another social emotional skill that is needed for kindergarten success. A meta-analysis found a moderate and statistically significant effect size of inhibitory control on academic achievement (Allan et al., 2014). Despite the overwhelming research that kindergarten readiness can be influenced through quality pre-kindergarten experiences, nativist teachers, who believe that readiness cannot be influenced, tended to recommend kindergarten retention (Smith & Shepard, 1988).

The term *readiness* refers to multiple skills a child needs to have to be successful in kindergarten. Despite extensive research demonstrating how intervention can help children prepare for kindergarten success, teachers and administrators are often recommending retention in kindergarten, which can lead to unwanted consequences in the future. In fact, studies have shown that students who were retained were showing less growth than those promoted to first grade (Hong & Raudenbush, 2005). In a recent meta-analysis of 20 studies, no benefit was obtained through grade promotion or retention, but grade retention appeared to suppress academic growth (Jimerson, 2001). This research suggests that neither practice is effective. However, children who come to kindergarten registration without the needed prerequisite skills are not destined for retention or unsuccessful grade promotion. One way to help students prepare for kindergarten is to offer transition activities, which will be discussed in the next section.

Transition Activities

Transition practices are “activities that build and strengthen relationships between families, preschool, and elementary school—are today considered the primary means of supporting a child's entrance into school” (Ahtola et al., 2015, p. 172). Well-planned transition activities have been shown to increase learning and adjustment (Ahtola et al., 2011). This effect is also seen in social emotional competence, and the correlation between participation in transition activities and social emotional competency is strengthened for children with social or economic risk factors (LoCasale-Crouch et al., 2008). Unfortunately, children who live in large, high-poverty school districts are significantly less likely to have a range of transition activities available (Daley et al., 2011; McIntyre et al., 2007).

Research suggests that the most common types of transition activities are holding informational meetings, conducting home visits, visiting kindergarten classrooms, organizing kindergarten registration, and administering summer camps and programs (Purtell et al., 2020). Another qualitative study found that transition activities that required personal contact with the child's family or preschool before the start of school (e.g., visiting preschool classrooms, writing letters to families prior to the start of school) were the least-commonly used transition activities (Rous et al., 2010). However, in Rous et al.'s (2010) study, the most commonly used transition activity was to meet with parents after the school year had started to provide an update on the child's progress. On average, teachers report engaging in six transition-to-kindergarten activities per year (LoCasale-Crouch et al., 2008).

In a study regarding teacher and parent perceptions of the importance of transition activities, the most important aspect of the activities was the familiarization with the school and the least important aspects of transition activities were teacher cooperation and joint writing of

the curriculum (Ahtola et al., 2015). A qualitative interview with teachers, however, yielded surprising results. Despite teachers identifying a clear difference between children who attended preschool and those who did not, teachers knew very little about their students' prekindergarten experiences and differed in their ideas about what a preschool is and what is taught (Ahtola et al., 2011). Parents in this study reported that they wanted more kindergarten transition activities.

Research on transition practices demonstrates how important they are and how they help create gains academically and socially. While teachers and schools report engaging in at least some kindergarten transition activities, many parents feel that more activities would benefit their children. Transition activities appear to happen less often for children living in high-poverty neighborhoods, leading to potential difficulty transitioning to formal schooling. The Success By 6™ program is a preschool-to-school-age transition program for children who have attended preschool and are at high risk for academic or social difficulties. The program is also used by children who live in high-poverty areas who have not had the opportunity to attend preschool. By providing these transition services directly to the children prior to entering kindergarten, these children enter school more confident and less anxious. Schools who participate in the Success By 6™ program are free to offer enrollment in this transition program to any child deemed to be at-risk. The subsequent section will further specify characteristics of at-risk children.

Identifying At-Risk Children

Poverty

Poverty has been considered a prime factor in determining a child's risk for kindergarten readiness. The rate of children living in moderate- to high-poverty neighborhoods has increased during the Great Recession (1998–2010) and children from the highest poverty neighborhoods start school almost a year behind children from moderate poverty neighborhoods (Wolf et al.,

2017). Due to lower levels of language acquisition, children from economically disadvantaged homes score lower on kindergarten entry examinations, but this disparity can be moderated by participating in an early childhood education program (Kenne et al., 2018). In fact, Young (2017) claims that “intervening in the early years is a critical first step toward alleviating poverty, reducing inequality, and ensuring a productive work force for the global economy” (p. 11).

Areas of development most at-risk due to poverty are language, self-control, and learning processes (Lipina, 2016). Children born into poverty have significant delays in vocabulary acquisition and limited language exposure. One study found that each $5,000 per year increase in family income was consistent with a gain of nearly two points in vocabulary scores (Gianaros et al., 2010). Children diagnosed with a language impairment by age five were between 3–10 times more likely to have disabilities in reading, math, and spelling by age 19 (Young et al., 2002). With these areas being previously identified as predictors of academic and social success in grade school, it is imperative that intervention take place early in a child's development to combat this trend.

Community

Additionally, it appears that a child's community affects kindergarten readiness. Children from rural areas score significantly below peers in urban areas (Bailey, 2013). This achievement gap seen between children living in urban areas and children living in rural areas is attributed to many things. The Rural Families Data Center (2010) speculated that this gap was credited to scenarios ascribed to poor school performance such as truancy, economic disadvantages, low employment rates, drug abuse, and low high-school completion rates. A child's risk of entering kindergarten with an academic disadvantage is intensified for African American children who live in rural communities. One study found that 40% of non-rural White children demonstrated

proficiency with beginning sound awareness, whereas 25% of rural White children demonstrated proficiency at kindergarten entrance (Bailey, 2013). Alarmingly, Bailey (2013) also found that only 5% of African American children from rural communities demonstrated beginning sound proficiency.

These disparities demonstrate a definitive need for prekindergarten interventions for children who come from economically disadvantaged families, are African American, and/or come from rural communities. None of the articles or statistics found discredited these achievement gap findings. Mercer County, Pennsylvania, the location of the Mercer County Success By 6™ program, is located in a rural area with 5% of the population from the African American community and approximately 15% of the community living in poverty (U.S. Census Bureau Quickfacts: Mercer County, Pennsylvania, 2019). Therefore, the community demographics demonstrate a need for effective preschool intervention programs. In order to best measure the effectiveness of a program, appropriate assessment procedures must be administered to ensure students are benefiting from the intervention. The next section will discuss the assessment and screening procedures used in the Success By 6™ program and in other similar programs.

Assessments and Screening Procedures

The Good Start Grow Smart and Child Care and Development Grant in 2002 required states to develop early learning targets to create or review rigorous prekindergarten standards that aligned with the K–12 curriculum (Neuman & Roskos, 2005). These standards were intended to steer early childcare centers' focus to guide preschoolers towards kindergarten readiness. The strong connection between verbal language skills and reading, as explained earlier, influenced the developers of standards to ensure each child received instruction in a

language-rich environment. Standards were to focus on developing phonological awareness, knowledge of print, and alphabetic principles; numbers and operations; geometry and spatial relationships; and algebra through data analysis (Neuman & Roskos, 2005).

Despite the implementation of common standards for driving kindergarten readiness, assessments in this area vary greatly in terms of content and use. A recent study examined the use of kindergarten assessments and found that they are most commonly being used to distribute abilities in English-Language Arts among classes (Curran et al., 2018). The authors of "Uses and Misuses of Kindergarten Readiness Assessment Results" recommended that kindergarten readiness assessments should be sensitive to the cultural and ethnic needs of the population being served, create ready schools, help deliver individualized instruction, align teaching practices, support teacher-parent partnerships, and screen for students with special needs (Regenstein et al., 2017). Within Mercer County schools participating in the Success By 6^{TM} program, kindergarten readiness assessments are used to identify children underperforming in academic, cognitive, motor, language, and social domains and to create recommendations for the summer program.

The number of states requiring a standardized assessment prior to kindergarten entry continues to rise (Miller-Bains et al., 2017). Currently, 38 states require a standardized assessment to enter kindergarten (Pierson, 2018). Pennsylvania is one of the 12 states not requiring a formal, unified assessment upon school entry. A commonly used assessment in other states is the Teaching Strategies GOLD. One study found evidence of concurrent validity with the Teaching Strategies GOLD for determining readiness but did not reliably differentiate readiness skills (Miller-Bains et al., 2017). Several other studies evaluated whether the dimensionality and measurement invariance for the Kindergarten Student Entrance Profile produced reliable readiness scores for students and suggested that this assessment was a valid

and reliable measure (Edyburn et al., 2017; Quirk et al., 2016; Quirk et al., 2015). Quirk et al. (2016) found that the measure was invariant across native languages and ethnicities. The authors also suggested that the Social emotional Readiness and Cognitive Readiness factors were reliable methods of evaluating readiness (Quirk et al., 2016).

Another set of researchers studied the Kindergarten Readiness Assessment (KRA) that is given to all children in kindergarten in Ohio schools. Schachter and colleagues (2015) evaluated the effectiveness of the KRA from the teachers' perspectives. The study concluded that many teachers did not have a favorable opinion of the KRA and that it did not provide valuable information. The study was repeated during the second year of implementation. The researchers found that teachers still had a negative perception of the assessment but were using it more to identify students at-risk for future academic difficulty (Schachter et al., 2017).

The assessment used by the Success By 6^{TM} program in Mercer County is the Kindergarten Readiness Test (KRT). The KRT levels of readiness are related to national stanines and percentiles. It may be given individually or in small groups. The test is designed to be given in 25–30 minutes. Six subtests comprise the assessment: Vocabulary, Phonemic Awareness, Identifying Letters, Comprehension and Interpretation, Visual Discrimination, and Mathematical Knowledge (STS Products, 2020). While this assessment has not been incorporated in research in the past, the KRT was chosen because of the particular areas assessed. All subtests for the assessment have been previously reported to affect kindergarten readiness. Scores on standardized tests alone do not determine effectiveness. Many effective preschools demonstrate similar characteristics which will be explained in the next section.

Children benefit socially from early intervention as well. Perhaps the most noticeable change for parents is the child’s social development when involved in an early intervention

program. As referenced previously, social competence can affect a child's likelihood of kindergarten success (Blair, 2002; Duncan et al., 2018; Johnson et al., 2019; Joy, 2016). Therefore, the SSIS SEL criterion- and norm-referenced scales were used to monitor progress in the child's social skill development throughout the program. The SSIS SEL evaluates six domains of social emotional learning (i.e., self-awareness, self-management, social awareness, relationship skills, responsible decision making, motivation to learn) and two academic domains (i.e., reading and mathematics skills). Each domain is rated on a 5-point Likert scale. Teachers provide a rating per domain for each child within the first and final weeks of the program. Each rating level is clearly defined for the teacher with examples of behaviors that should be observed to obtain that particular rating.

As outlined in the CASEL Guide (Collaborative for Academic, Social, and Emotional Learning, 2012), when providing instruction and progress monitoring in each of the five domains, outcomes include positive social behavior, fewer conduct problems, less emotional distress, and academic success. Therefore, incorporating a progress monitoring tool into curriculum delivery aids the Success By 6 ^{TM} program with delivering effective instruction.

Characteristics of an Effective Preschool

An effective preschool is typically defined as a preschool that prepares children for academic and social success in kindergarten (Meloy et al., 2019). In 2014, President Obama called for reform to ensure that all children had access to high quality programming, prompting the implementation of the Pre-K Now initiative and doubling state funding (Gordon et al., 2015). In a 2013 press release from the White House Press Secretary, President Obama stated that "high-quality early learning programs can help level the playing field for children from lower-income families on vocabulary, social and emotional development, while helping students to stay

on track and stay engaged in the early elementary grades" (Fact Sheet President Obama's Plan for Early Education for All Americans, 2013, p. 1). His press briefing went on to describe a high-quality preschool as having well-trained and competitively paid teachers, using state-level standards for curriculum development, using a comprehensive data and assessment system, having small class sizes and low student-to-teacher ratios, implementing a rigorous curriculum, integrating health and related services, and evaluating and reviewing the program effectively.

While considering each of the domains outlined above by President Obama, Pennsylvania does have recognized state-wide early learning standards. These standards are organized into nine key learning areas including:

- Approaches to Learning through Play–Constructing, Organizing, and Applying Knowledge;
- Language and Literacy Development–English Language Arts;
- Mathematical Thinking and Expression–Exploring, Processing, and Problem-Solving;
- Scientific Thinking and Technology–Exploring, Scientific Inquiry, and Discovery;
- Social Studies Thinking–Connecting to Communities;
- Creative Thinking and Expression–Communicating Through the Arts;
- Health, Wellness, and Physical Development–Learning About My Body;
- Social and Emotional Development–Student Interpersonal Skills; and
- Partnerships for Learning–Families, Early Care and Education Programs, and Communities. (Office of Child Development and Early Learning, 2014)

The curriculum from the Success By 6™ program is organized around these state standards and each district participating in the program submits a letter stating that their

curriculum, while flexible to the particular district's needs, will encompass a wide-range of activities for each standard.

Evaluating Preschool Effectiveness

In response to this urgency for quality assurance in preschools, 39 states have developed a Quality Rating and Improvement Systems (QRIS) (Sirinides et al., 2015). The Pennsylvania preschool QRIS is known as Keystone STARS (Standards, Training/Professional Development, Assistance, Resources, and Supports). Keystone STARS provides up to four stars for preschool quality based on standards in the areas of staff education, learning environment, leadership/management, and family/community partnerships (Wolf & Riveria, n.d.). Sirinides et al. (2015) explored the Keystone STARS rating system as part of the Pennsylvania's Race to the Top Early Learning Challenge grant. This inquiry examined the relationship between the number of stars received and child competencies, the use of evidence-based practices and their links to the number of stars received, and examined overall features for improvement (Sirinides et al., 2015). Using the Work Sampling System (WSS), the authors found that children in three- and four-star preschools scored significantly higher than children in one- and two-star preschools. This suggests that the Keystone STARS system was accurately identifying quality preschools in terms of learning outcomes. The Early Childhood Environment Rating Scale, Revised (ECERSR) is another commonly used assessment tool that evaluates how well a preschool is preparing its students for kindergarten (Gordon et al., 2015). Findings on the ECERSR were compared to the those of the WSS and the Keystone STARS and determined to be positively associated with total WSS scores (Sirinides et al., 2015). However, Gordon et al. (2015) found that the ECERSR had very few indicators to capture the moderate- to high-range of quality.

Research has shown that vocabulary development may be associated with preschool quality as well. Skimmons (2012) found that children in preschools that had three- or four-star rankings also had higher scores on the Peabody Picture Vocabulary Test as well. This study also found that children attending preschools with one- and two-star rankings did not engage in shared book readings as often as children in three- and four-star facilities (Skimmons, 2012). This could help explain the difference in vocabulary knowledge.

Concern, however, has been raised by preschools that are either not accredited or rated by the Keystone STARS system. The National Association for the Education of Young Children is a national accrediting organization and its designation as being an accredited program has been thought to be the standard of excellence in early childhood education (Zan, 2005). In a study to determine if accreditation and rating by a QRIS system affects a child's readiness for kindergarten in the state of Florida, researchers determined that there was no difference between accredited and nonaccredited preschools with regards to school readiness (Winterbottom & Piasta, 2014). This study was supported by Zan (2005) who found that National Association for the Education of Young Children accreditation standards to not adequately reflect the quality of curriculum.

While contradictory evidence exists that suggests that preschool accreditation does affect outcomes for at-risk children (Dinehart et al., 2012), the conflicting results suggest that while high-quality, accredited preschools are being identified, preschools do not necessarily need to have an accreditation or a QRIS state rating to prepare kindergarten-ready students. Since states use different accrediting criteria, it is difficult to determine if one accreditation leads to better outcomes over another. Excluding Head Start and Pre-K Counts classrooms, only 13 preschool programs exist within the target area that have a Keystone STARS rating of three or higher

(Compass, n.d.). When comparing preschools with Pennsylvania's Keystone Stars ratings, no statistical difference was found between students' literacy scores upon entering kindergarten from students in a STARS-accredited program and a non-accredited program (Greer, 2018).

Perhaps the use of the nationally recognized accreditation from the National Association for the Education of Young Children (NAEYC) is a better measure of preschool quality. NAEYC accreditation is correlated with a Keystone STARS rating of four or better (Barnard et al., 2006), indicating a much higher standard for accreditation. Additionally, NAEYC accreditation has led to twice as many children being proficient or advanced on indicators of kindergarten readiness (Minnesota Department of Human Services, 2005). It is therefore no wonder that NAEYC accreditation is considered the "gold standard" for preschool quality.

Another set of conflicting ideologies is the emphasis on preschool teacher qualifications and their effect on preschool quality over the full accreditation process. This is immediately noticeable in the Keystone STAR QRIS because the first criteria for star level is director and teacher qualifications (Wolf & Riveria, n.d.). Sanders (2018) found that individuals newly graduated from or currently enrolled in preschool teacher training programs consistently identified the teacher's abilities to self-reflect, listen to the children, and care contributed more to preschool quality than did the teacher's educational qualifications. Another study found similar results by accepting a null hypothesis in the correlation of teacher education levels and preschool quality (Early et al., 2007). From those results, Early et al. (2006) concluded that teacher education alone will not improve student outcomes and only contribute marginally to preschool quality. These two studies, however, appear to be the exception to the rule.

Purtell and Ansari (2018) found contrasting evidence. They determined that teacher qualifications, but not necessarily experience, moderate the effect of quality preschools and child

outcomes (Purtell & Ansari, 2018). A recent meta-analysis was conducted in order to examine these conflicting findings. Results indicated significantly higher correlations between teacher qualifications and preschool quality ratings (Manning et al., 2019). This meta-analysis is significant in that it provides that highest-level of evidence, making the claim that teacher qualifications contribute to preschool quality scientifically valid. The Success By 6™ uses only highly qualified elementary or preschool teachers. Teachers are employed by the district or as a classroom teacher in a Head Start or Pre-K Counts program.

As stated previously, Pennsylvania Early Learning Standards' first key learning standard is Approaches to Learning through Play–Constructing, Organizing, and Applying Knowledge (Office of Child Development and Early Learning, 2014). While teachers and administrators often champion early learning and kindergarten readiness academic skills, developmentally appropriate skills continue to need attention. Some controversy exists surrounding the use of guided play in preschool settings despite the growing evidence supporting its use. Guided play is defined as the midpoint between teacher-directed instruction and free play and consists of a learning goal in a scaffolded environment with the child leading the play (Weisberg et al., 2013). Baron et al. (2016) found that teachers believe academic readiness tasks should take precedence over play-based learning. However, guided play may have a significant effect on a child's readiness as well. Guided play can facilitate a child’s learning by building on existing knowledge and extending the knowledge through social interaction (Ashiabi, 2007). Several studies have shown benefits in the areas of reading and math achievement, language development, and self-regulation in preschool children (Berk & Meyers, 2013; Marcon, 2002; Weisberg et al., 2013).

Perhaps the discord between evidence-based practices and teacher reports lies within the teacher’s knowledge and understanding of the use of play in learning. Pyle and Danniels (2017)

found positive results when the teachers viewed the purpose of play as supporting personal and social development. The researchers also stated that a variety of play strategies including free play, inquiry play, collaborative play, playful learning, and learning through games were used throughout the day (Pyle & Danniels, 2017).

The Success By 6™ program supports the use of these play-based strategies. The co-taught classrooms involving Head-Start or Pre-K Counts teachers have a particular advantage in using these strategies because these teachers receive regular professional development in the use of play-based learning. Success By 6™ teachers receive some professional development in this area through the program director and are encouraged to work with their co-teacher to utilize these strategies throughout their program.

A quality preschool should not only be judged on how well it prepares children academically for kindergarten, but also how well it levels the playing field for children to reduce cultural and ethnic disparities (Bohan-Baker & Little, 2004). Some programs are attempting to reduce disparities by creating strong partnerships with families and communities. The SPARK program in Ohio uses a home visitation model that attempts to prepare preschool-age children for kindergarten academically, physically, and social emotionally (Fischbein et al., 2016). A recent study found that children who participated in the SPARK Ohio program scored statistically significantly higher on kindergarten readiness assessments in the area of literacy skills compared to nonparticipants (Fischbein et al., 2016). This research suggests that a strong family component contributes to a quality program that prepares children for kindergarten readiness.

There is overwhelming evidence that a quality preschool program contributes to the readiness of a child for formal schooling. While quality may be defined in many ways, common themes through the literature indicate that a program should have rigorous learning standards,

opportunity for play based learning, a quality-control evaluation system, and a strong parental connection component. In looking at the Success By 6™ program of Mercer County, all of these components appear to be in place. The curriculum is designed using Pennsylvania's Early Learning Standards, there are highly qualified teachers, there is a low student-to-teacher ratio, community partnerships have been integrated, learning is play based, and there is a component of strong parental encouragement. Programs similar to Success By 6™ have shown success with improving readiness. These programs are discussed below.

Interventions for Children Who are At-Risk

Summer Programs

Bridging the transition between preschool and kindergarten has been an area of importance to kindergarten teachers and administrators. A "successful transition is characterized by ongoing efforts to create linkages and continuity among all of the 'players' in the child's environment—parents, preschool teachers, kindergarten teachers, community agencies—to provide a continuum of care and support" (Emfinger, 2012, p. 259). A recent study found that nationally, teachers engage in at least three transition-related activities on average per year (Cook & Coley, 2017). As part of these transition activities, more school districts are participating in and promoting summer programs similar to the program being evaluated. A 20-day summer program for transitioning kindergartners in an urban, high-poverty community yielded positive results for improvements in word reading and listening comprehension, but no differences in reading fluency of vocabulary (Denton et al., 2010). While this study looked at children transitioning from kindergarten to first grade, it does help support the effectiveness of summer programming. Similar results were found in a study that examined the participation in the Ohio SPARK summer program. Large effect sizes (i.e., Cohen's *d*-type effect sizes of 0.92) showed an

increase in mathematics ability compared to others who did not participate in the SPARK program (Little et al., 2017).

A few studies have been conducted on programs comparable to Success By 6™ that measured academic achievement. A Cheyenne, Wyoming program similar to Success By 6™ documented significant academic gains during a 6-week summer intervention program for at-risk students (Story, 2008). Youth who participated in that program made significant gains in the areas of language skills, literacy skills, and motor skills when compared to a control group (Story, 2008). Likewise, Beach (2004) considered a phonological intervention program for at-risk youth conducted in the summer prior to kindergarten entry and it yielded positive results for letter-naming and initial-sound fluency. It is important to note that summer programs exist through the United States that are similar to the United Way of Mercer County's program but lack research to support academic or social gains.

In a study that examined a summer program targeting children with challenging externalized behaviors, a 4-week intensive summer intervention program for children transitioning out of Head Start classrooms into regular kindergartens demonstrated a significant decrease in externalizing behaviors when compared to a control group (Hart et al., 2016). Additional evidence supports the use of summer programming to prepare children with challenging behaviors for kindergarten. In the summer before kindergarten, a summer treatment prekindergarten program (STP Pre-K) was found to reduce externalizing behaviors for children identified as at-risk socially (Graziano et al., 2015). Graziano et al. (2015) also found that the children identified for behavior reasons made substantial gains academically, improving their overall readiness for kindergarten.

Gains made during these readiness programs not only contribute to entering kindergarten with increased skills, but research has shown that the gains the children make in these intervention programs are statistically significant in later grades. Hover (2015) looked at the end-of-the-year benchmark performances for children participating in the Kindergarten Readiness Program in a large suburban school in Tennessee compared to other control groups of children who were identified as at-risk and had summer birthdays. By the end of the third grade, students who had participated in the Kindergarten Readiness Program scored significantly higher mean reading and math scores than the children with summer birthdays who elected to not participate in the program (Hover, 2015). The author suggests that children who have summer birthdays and are deemed at-risk for entry into kindergarten should consider an intervention program to promote readiness.

Delaying Kindergarten Entry

A popular solution to children who do not perform well on their kindergarten readiness assessment is to delay kindergarten entry by a year. Some districts will promote enrollment into a district-run intervention program that delays entry into kindergarten by participating in a year-long program. Teachers who believe that young children need the "gift of time" to develop encourage enrollment in these programs (Singman, 2013).

Unfortunately, the practice of delaying kindergarten entry for young or socially immature children is not equally distributed amongst the population. In a review of literature, Frey (2005) found that ethnicity, gender, socioeconomic status, and parental factors all played a role in delaying kindergarten entry. Frey (2005) found that Latino and African American children were more likely to be retained, as were males from economically disadvantaged homes.

While this practice may help children develop maturity and enter kindergarten more ready to learn, the initial benefit from this practice does not carry over into subsequent school years (Postle-Brown, 2019). Another study examined the effect of age at kindergarten entry on academic achievement in third grade. Aliprantis (2014) found that older age in third grade was actually correlated with lower academic performance. Unfortunately, retention of children is common among teachers who believe that keeping students in kindergarten will increase maturity before entry into first grade (Wofford, 2016). This belief is contradictory to research that points to intervention rather than retention or delayed entry being effective in promoting school readiness.

Similar Intervention Programs

Several studies examine the effectiveness of a summer kindergarten preparation program on a child's readiness to attend formal schooling. In 2017, 84 pre-kindergarteners from a rural, midsize school district in the southeastern portion of South Dakota participated in a summer camp called Stars and the results were positive (Pederson, 2017). The 5-week summer camp was for low-income kindergartners and focused on social and behavioral interventions. Results from Pederson's (2017) study also indicated that children who were most at-risk entering the program made the most academic gains. Results from a randomized controlled study of the program yielded positive results for social improvements in girls, and improved transitions into school routines for all participants (Berlin et al., 2011).

Summary

The evidence for preschool and early intervention is strong. Neural imaging studies and developmental theorists have proven that childhood is the most efficient time to make lasting changes in the brain. Interventions and exposures to rich literacy and language activities increase

the synaptic connections in the brain and promote overall development. Using the neuroscience behind childhood development, America is moving towards providing access to these quality experiences to all populations.

Currently, children at greatest risk for not being ready for formal schooling are minority children, children who come from economically disadvantaged homes, and children with disabilities (Denton et al., 2010; Dinehart et al., 2009; Duncan et al., 2007). Unfortunately, these are the same populations who have the least amount of access to the transition services that are critical to kindergarten success.

Research supports the fact that intervention that takes place in the summer months before kindergarten can be effective for children. This means that schools must increase transition services and provide interventions for students who may be behind. Given the right interventions, transition-age children can increase readiness abilities and begin the kindergarten year ready to learn.

The next chapter outlines the methodology of the current study. The research topic and associated questions will be identified as well as the study's design, population and sample, instrumentation, data collections procedures, and methods for data analysis. This quantitative study will consider the children in the Success By 6™ program's overall academic readiness in areas identified in the literature review as critical to predicting future success. Additionally, social and emotional well-being is gauged using an informal measure to determine if previously identified indicators of readiness with regards to self-regulation are improved as well.

Chapter III: Methodology

Introduction

The current study used a quantitative research design to determine the effectiveness of a summer intervention program called Success By 6™ in a Northwestern county of Pennsylvania. This program is a 6-week summer camp conducted within the student's home district. There were up to 20 children in each classroom and they were co-taught by either two certified, highly qualified district teachers or a certified, highly qualified district teacher and a certified Head Start/Pre-K Counts instructor. Each child received 135 hours of instruction in the areas of reading, math, language, social skills, and motor development. Pre- and posttests were used to determine which skills were learned during the program. This chapter will detail the purpose and research questions, study design, ethics and human subject protection, the population and sample, instrumentation, data collection and analysis, and study limitations.

Purpose and Research Questions

Teachers and educators who identify a child as being at-risk through the kindergarten registration process in the spring term before their formal schooling begins have little time and options for providing intervention in the five or six months prior to the start of kindergarten in the fall. However, this time is critical for developing necessary readiness skills. The purpose of this study was to determine the effectiveness of the United Way of Mercer County's Success By 6™ program for improving overall readiness of children who were identified as being at-risk for entering kindergarten behind academically or socially. The research questions for the current study were as follows:

(1) What is the impact of the United Way of Mercer County's Success By 6™ program with regard to improving academic kindergarten readiness for at-risk students?

Hypothesis 1 (H_1): Children in the United Way of Mercer County's Success By 6™ program will score statistically better in the posttest assessment than in the pretest assessment ($p \leq .05$).

Null Hypothesis 1 (H_0): Children in the United Way of Mercer County's Success By 6™ program will not score statistically better in the posttest assessment than in the pretest assessment ($\mu 1 = \mu 2$).

(2) What is the impact of the United Way of Mercer County's Success By 6™ program in regards to improving a child's academic skills in each of the areas assessed (i.e., letter recognition, visual discrimination, phonemic awareness, listening comprehension, vocabulary, numbers and operations, measurement, geometric concepts)?

Hypothesis 2 (H_1): Children in the United Way of Mercer County's Success By 6™ program will score statistically better in the posttest assessment than in the pretest assessment in each of the 8 subtests ($p \leq .05$).

Null Hypothesis 2 (H_0): Children in the United Way of Mercer County's Success By 6™ program will not score statistically better in the posttest assessment than in the pretest assessment in each of the 8 subtests ($\mu 1 = \mu 2$).

(3) What is the impact of the United Way of Mercer County's Success By 6™ program with regard to improving social emotional skills needed for kindergarten readiness?

Hypothesis 3 (H_1): Children in the United Way of Mercer County's Success By 6™ program will score statistically better in the posttest assessment than in the pretest assessment ($p \leq .05$).

Null Hypothesis 3 (H_0): Children in the United Way of Mercer County's Success By 6™ program will not score statistically better in the posttest assessment than in the pretest assessment ($\mu 1 = \mu 2$).

These research questions suggested the need for a quantitative study design. Details for the design are listed below.

Research Design

All students who participate in the United Way of Mercer County's Success By 6™ program are assessed before and after the intervention to measure progress. In 2021, the United Way of Mercer County switched from a curriculum-based assessment that was created by the program director to a standardized assessment, the KRT, to determine gains made compared to the general readiness of the population. A paired samples *t*-test was conducted on the data provided from the program to determine statistical significance. This quantitative research design provided objective data on academic and social readiness. Even though the researcher collected information from historical data, it was important to protect the identities of the young children during this study. These protections are listed in the next section.

Research Ethics and Human Subjects Protection

Since this research involves young children, it was paramount to protect this population from harm and to provide them with effective treatment. As stated previously, early childhood is a critical period for development and children's well-being should be protected. The researcher has completed Collaborative Institutional Training Initiative training and received certification to work with this population. On April 15, 2021, the proposed study was accepted by the Slippery Rock University Institutional Review Board under exception, category one. This research is being conducted with historical data from the child sample. Therefore, participants in the program were not subjected to additional testing or unproven treatments as part of this study.

No identifiable information was collected from teachers or students. On the invitation letter to participate in the Success By 6™ program, parents were informed about the use of the

child's data in the present study. Parents were informed on the permission to attend sheet that the assessment was to take place regardless of the parent's consent to release their child's data to the researcher. Again, only raw data was reported to the researcher and no identifiable information was connected to the child's score once reported to the United Way of Mercer County or the researcher. A statement was added to each Curriculum Alignment letter from each participating school district to release the data from the assessments to the researcher with identifiable information removed. A copy of the Curriculum Alignment letter is included in Appendix A..

It should be noted that the researcher has a bias related to the program. The researcher is the previous and current project manager of the Success By 6™ program of the United Way of Mercer County. However, the researcher/manager did not conduct any testing sessions and results were reported to the researcher anonymously. All tests were administered under standard conditions and all teachers signed a form with the United Way of Mercer County stating that testing would be conducted with honesty and fidelity. Below, the sample derived from the population for this study is discussed further.

Population and Sample

The population for this study was four- and five-year-old children who reside in Mercer County, Pennsylvania and were eligible to attend kindergarten in the fall of the 2021–2022 school year. The sample included students from the population who were identified as at-risk through an independent screening assessment conducted by the local school district. Students were identified as at-risk if they displayed any of the following characteristics: low socioeconomic background (identified through attendance in Head Start/Pre-K Counts or participation in free and reduced lunch programs), the presence of disabilities, involvement in early intervention services, identification of social/behavioral difficulties during screenings, or

below-average academic readiness on the district curriculum-based assessment. It should be noted that students were hand-selected for the program by the local education agency. Invitations were prioritized by students with the most need for intervention. Mercer County is a small, rural county in northwestern Pennsylvania. The median income for families is $48,768 and 15.3% of the population lives below the poverty line (U.S. Census Bureau Quickfacts: Mercer County, Pennsylvania, 2019).

Each of the 17 Success By 6™ classrooms contained up to 20 students with two teachers for a 10:1 ratio. There was a total of 243 participants in the 2021 Success By 6™ program. It should be noted that participation this year was down and theories for this change in participation are discussed in the results section. Instruments used to evaluate students are discussed in the next section.

Instrumentation

The KRT was administered to each student in the program within the first week of the program and during the last week of the program. The KRT is a nationally referenced assessment that consists of 8 subtests (i.e., letter recognition, visual discrimination, phonemic awareness, listening comprehension, vocabulary, numbers and operations, measurement, geometric concepts). While content validity is not configured statistically, the content validity is reported for each subtest and is compared to its rationale for inclusion in the assessment. The assessment was given individually by either the classroom teacher or a graduate speech-language pathology intern under the direction of the project manager, a nationally certified and state-licensed speech-language pathologist. The average raw score for each subtest and reliability statistics are displayed in Table 1.

Table 1

Mean Raw Scores and Reliability for KRT Subtests

Subtest	Number of items	Average Raw Scores	KR-20 Rel.
Letter Recognition	6	4.8	0.60
Visual Discrimination	6	3.9	0.48
Phonemic Awareness	6	3.9	0.65
Listening Comprehension	6	5	0.62
Vocabulary	6	4.7	0.38
Numbers and Operations	5	4.4	0.46
Measurement	3	2.3	0.39
Geometric Concepts	3	2.3	0.30
Total Test	41	31.3	76%

The KRT manual lists the test's reliability coefficient as 0.82 using the Kuder-Richardson formulas. This indicates a high degree of internal consistency. The standard error of measure is reported to be two raw score points (Scholastic Testing Service, 2015).

The United Way of Mercer County was using a curriculum-based assessment in prior years and switched to a standardized assessment this year to determine if gains being made in the program would compare to national readiness. As demonstrated in the literature review, this assessment evaluates skills deemed to be critical to kindergarten readiness. The assessment also provides data in each area as well as an overall readiness score. This allows the Success By 6™ program to measure overall readiness made during the program. For the purposes for this research, results were entered into the data software program SPSS to calculate the statistical

significance for the overall improvement and the improvement made in each subtest. SPSS software enables the user to run paired sample *t*-tests and has been proven to be a reliable means of calculating this type of tests (Park, 2009).

Additionally, the Success By 6™ program was interested in documenting improvements made in the area of social skills. Several rating skills were trialed during the 2020 summer. Due to the COVID-19 crisis, the Success By 6™ program ran a *mini-camp* which was reduced to 10 days and 30 hours of instruction. Districts that took part in the mini-camps trialed several social-skill rating scales to determine the most appropriate measure. Feedback from teachers indicated that an assessment was needed that allowed for multiple points of improvement and clearly defined criteria. The SSIS SEL received the most positive feedback from teachers who felt that this measure would adequately reflect skills gained during participation in the program.

Prior studies have examined the reliability and validity of the SSIS SEL for progress monitoring of social skills. Excellent internal consistency was found with coefficient alphas of 0.90 and above for both the social emotional and academic domains (Gresham & Elliott, 2017). However, this same study found that interrater reliability can be very large. Therefore, only one classroom teacher was responsible for both initial and final ratings to eliminate this variability. Other issues demonstrated with the reliability of this assessment stems from the variability in the timing of administrations. While vague guidelines for administration are suggested, Gresham and Elliott (2017) noted that the administrations used to determine reliability for this assessment ranged from 2–87 days. Guidelines for administration of this assessment during the Success By 6 ™ program were established in order to reduce this inconsistency between district scores.

The SSIS SEL has excellent construct validity (i.e., the degree to which a test measures what it claims to gauge) as well. The social emotional learning domains measured in the SSIS

SEL are consistent with the theoretical construct developed by the Collaborative for Academic, Social, and Emotional Learning. With adequate reliability and construct validity, a consensus was reached that the SSIS SEL was the most appropriate for assessing social emotional growth. Each of the five social emotional domains and two academic domains were rated using a 5-point Likert scale. The results from the *t*-tests were used to determine if progress was statistically significant.

Data Collection Procedures

Data was collected through the pre- and posttest administration of the KRT and the evaluation of social skills on the SSIS SEL rating scale. The KRT was administered by either a classroom teacher or a graduate-level speech-language pathology intern supervised by a certified speech-language pathologist. It was administered under standardized conditions in the school setting per the manual directions. Data was collected for the social skill ratings through notes from observations and clinical knowledge of social skills. The SSIS SEL was administered both times by the same teacher to reduce interrater variability. All test administrators were trained how to use the rating scale to account for reliability.

Data Analysis

Data was analyzed through paired samples *t*-tests. The overall readiness score was calculated using a repeated pre- and posttest *t*-test. The same *t*-test was performed for each individual subtest. The *t*-test was chosen over the Wilcoxon signed-rank test due to yielding more reliable results (Meek et al., 2007). All data was entered into SPSS and calculated electronically. The social skills rating scale was also analyzed using a paired samples *t*-test. Data was displayed for overall readiness, each subtest, and overall improvements in social skills to answer the research questions.

Limitations

While every effort was made to correct potential barriers, several limitations exist within the study. First, the data does not include a control group. Ideally, Mercer County school districts would administer the KRT to all incoming kindergartners to determine who should be invited to the program. This would create a control group for students who qualified but did not attend the program. However, with the COVID-19 pandemic, school districts were unable to give these assessments during kindergarten registration due to time factors with social distancing.

Another potential limitation with this study is student attendance. From the sample, a total of 67 participants missed five or more days of the program. As discussed in Chapter II, poor attendance can have a negative impact on results and led to not all participants completing the necessary posttest.

Additionally, the KRT does not provide any data on validity and reliability that is substantiated by external researchers. While the exhaustive nature of the literature review supports the use of the subtests, they are only nationally normed. While this fulfills the requirement of the Success By 6™ program's objective to compare local scores to national norms, validity could not be established. Testing the validity and reliability of this assessment is recommended for future research.

Summary

This quantitative study utilized the KRT plus an informal social skills rating scale to determine overall improvements and readiness for kindergarten made during the Success By 6™ program. Research questions addressed the effects of the program on overall readiness, individual readiness skills, and social skills improvements. The instruments listed above were delivered to students at both the beginning or ending of the program and a repeated measures

analysis was used to determine if improvements were statistically significant ($p \leq .05$). In the next chapter, results from the data analysis will be reported along with a discussion inferring why results were obtained and the implications of such results.

Chapter IV: Findings

The purpose of the present study was to determine if the United Way of Mercer County's Success By 6™ program improved a transition-aged preschooler's overall readiness for academic and social success. The KRT was administered within the first week of the program as described above and the students' social skills were rated by the classroom teacher after the first week of observation using the SSIS SEL. This study used a paired samples *t*-test on existing data from the 2021 program. Hypotheses were created based on the previous evidence that the program yielded positive results. It was hypothesized that participants were scored statistically better on the posttest than the pretest in overall readiness and in each subtest. Additionally, it was hypothesized that students would score statistically better at the end of the program. The proposed hypotheses were tested using the data from the assessments and are described in this chapter.

All children in this study were participants in the 2021 United Way of Mercer County Success By 6™ program. Data was only reported if the students began the program at the start and finished the program. Students who withdrew or started after the first week of the program were excluded from the data. A total of 216 students completed the KRT and 231 students were rated on the SSIS SEL due to absences at the conclusion of the program. All students attended a Mercer County kindergarten program in the fall of 2021 and attended their home district's program. Student attendance was contingent on invitation to the program based on district recommendations and ability to adhere to the health and safety guidelines pertaining to COVID-19 precautions set forth by individual districts. To further describe the sample, Table 2 displays the number of participants per category and the percentage of the sample for that demographic.

Table 2
Demographics of Participants

Baseline characteristic	*n*	*%*
Gender		
Female	102	42
Male	141	58
Ethnicity		
Caucasian	203	83.5
African American	32	13.10
Asian	2	0.80
Other	7	2.90
Experience		
Attended Head Start	86	35.4
Qualified for EITC	188	77.4
Age		
Four Years Old	33	13.6
Five Years Old	189	77.8
Six Years Old	11	4.5
Missed Five Or More Days	67	27.6

Overall Results

Results from pre- and post-testing from the KRT and SSIS SEL were analyzed using the SPSS software. A paired sample *t*-test was calculated for the pre and post KRT test totals, each of the individual KRT subtests, and the SSIS SEL test totals. Findings are summarized in Table 3.

Table 3
Results of Pre- and Posttesting

	Pretest Mean	Posttest Mean	Mean Difference	Standard Deviation	Standard Error Mean	*t*	*df*	*p*	Cohen's *d*
KRT Letter Naming	3.40	4.18	0.78	1.47	0.10	7.77	215	< .001	0.53
KRT Visual Discrimination	3.00	3.76	0.76	1.28	0.09	8.76	215	< .001	0.60
KRT Phonemic Awareness	2.20	3.33	1.13	1.47	0.10	11.28	215	< .001	0.77
KRT Listening Comprehension	4.22	4.98	0.76	1.33	0.09	8.40	215	< .001	0.57
KRT Vocabulary	4.53	5.11	0.58	1.12	0.08	7.67	215	< .001	0.52
KRT Numbers & Operations	3.46	4.14	0.68	1.01	0.07	9.84	215	< .001	0.67
KRT Measurement	1.86	2.45	0.60	1.03	0.07	8.49	215	< .001	0.58
KRT Geometric Concepts	1.94	2.54	0.61	0.94	0.06	9.44	215	< .001	0.64
KRT Test Total	24.42	30.50	-6.07	5.38	0.37	6.80	215	< .001	1.13
SSIS SEL	24.98	29.97	4.99	3.43	0.23	22.13	231	< .001	1.45

Results by Research Question

This section describes the results pertaining to each research question.

(1) What is the impact of the United Way of Mercer County's Success By 6™ program with regard to improving academic kindergarten readiness for at-risk students?

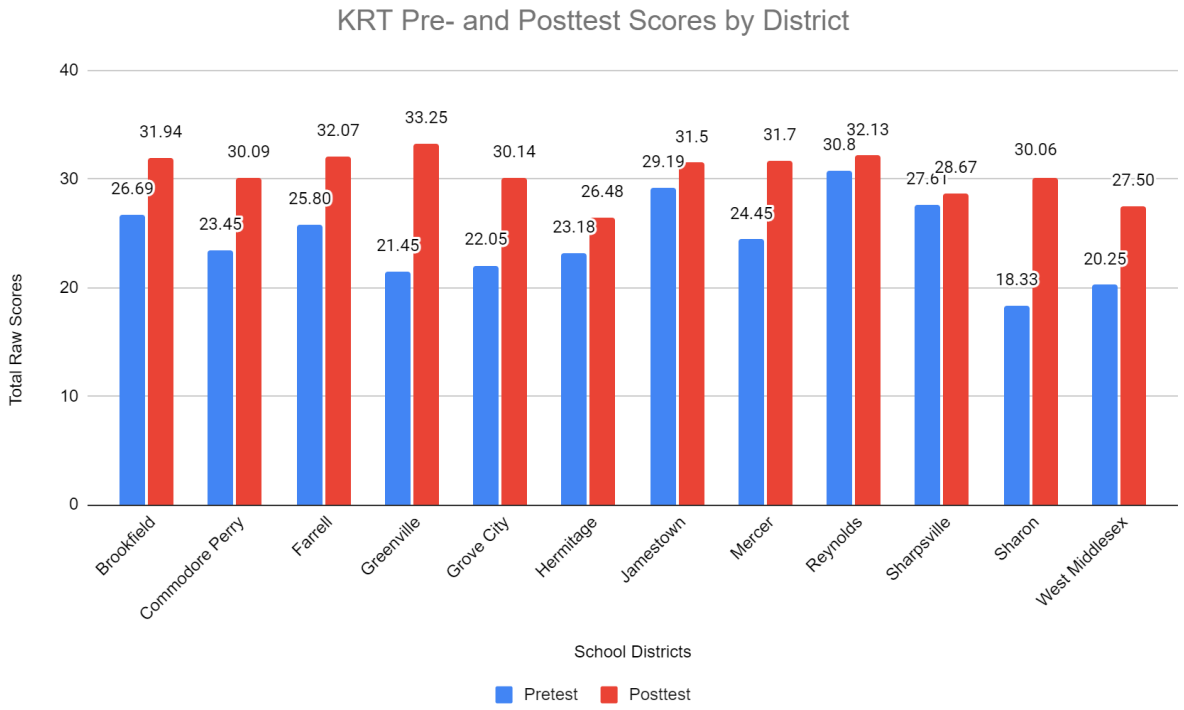
Hypothesis 1 (H_1): Children in the United Way of Mercer County's Success By 6™ program will score statistically better in the post-test assessment than in the pretest assessment ($p \leq .05$).

In order to test the hypothesis that the pretest means (M = 24.4213, SD= 7.18159) and the posttest means (M = 30.4954, SD = 5.52542) were equal, a paired samples t-test was conducted.

The null hypothesis was rejected in regards to overall readiness, $t(215) = 16.580$, $p < .001$. Thus, the posttest mean was statistically significantly higher than the posttest mean. Cohen's *d* was estimated at 1.13, which is a large effect size based on Cohen's guidelines (Gignac & Szodorai, 2016). A graphical representation of the means per district is represented in Figure 2.

Figure 2

KRT Pre- and Posttest Scores by District



(2) What is the impact of the United Way of Mercer County's Success By 6™ program with regards to improving a child's academic skills in each of the areas assessed (i.e., letter recognition, visual discrimination, phonemic awareness, listening comprehension, vocabulary, numbers and operations, measurement, geometric concepts)?

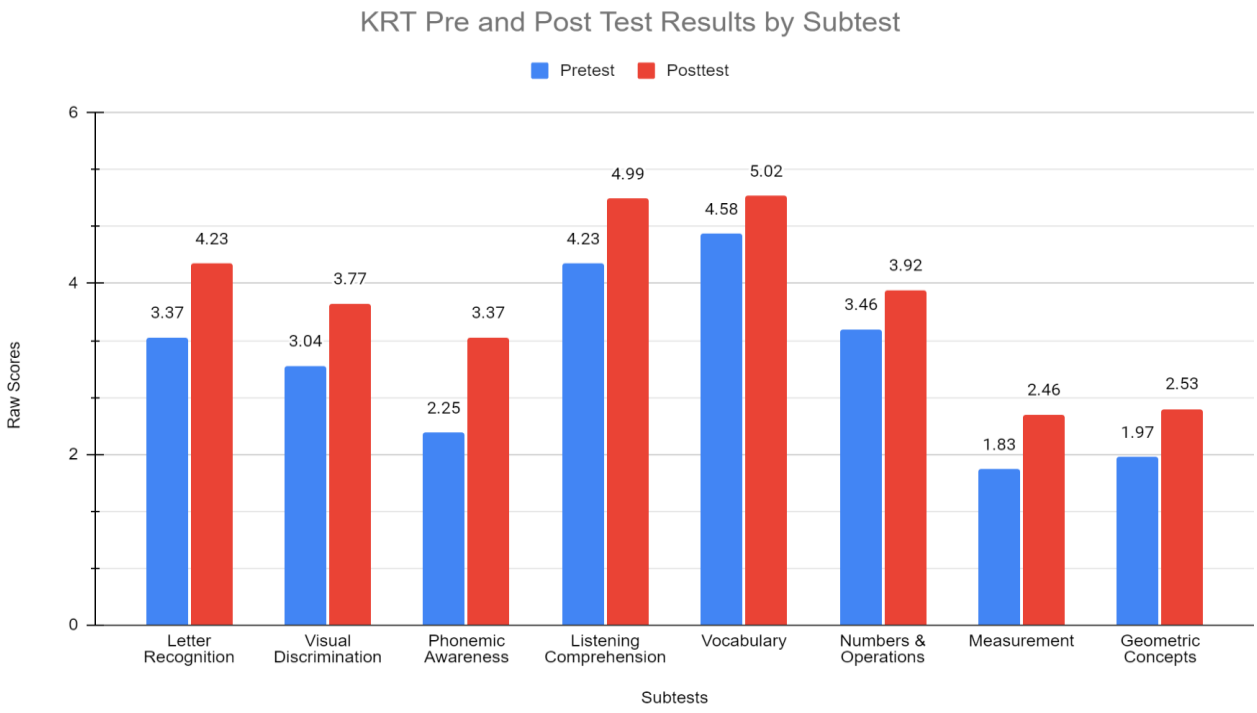
Hypothesis 2 (H_1): Children in the United Way of Mercer County's Success By 6™ program will score statistically better in the posttest assessment than in the pretest assessment in each of the 8 subtests ($p \leq .05$).

To test the hypothesis that the pre and posttest means of each subtest were equal, a paired samples *t*-test was conducted for each subtest. In regards to the Letter Naming subtest, pretest means (M = 3.40, SD = 1.78) and posttest means (M = 4.18, SD = 1.51) were statistically significant and therefore, we reject the null hypothesis that the means would be equal, $t(215) = 7.77$, $p < .001$. Cohen's d was estimated at 0.53 which is a medium effect size based on Cohen's guidelines (Gignac & Szodorai, 2016). The means in the Phonemic Awareness subtest pretest (M = 2.20, SD = 1.62) and posttest (M = 3.33, SD = 1.66) were also statistically significant, $t(215) = 11.28$, $p < .001$. This effect size of 0.77 was also considered to be medium. In regard to the Listening Comprehension subtest, pretest means (M = 4.22, SD = 1.40) and posttest means (M = 4.98, SD = 0.98) were again statistically significant, $t(215) = 8.40$, $p < .001$. The Cohen's d was estimated at 0.57, which is again a medium effect size. The final reading subtest, Vocabulary, yielded positive results. The Vocabulary pretest means (M = 4.53, SD = 1.28) and the posttest means (M = 5.11, SD = 0.98) yielded statistically significant results $t(215) = 7.67$, $p < .001$. The Cohen's d was estimated as 0.52, a medium effect size.

In regard to the math subtests, for the Visual Discrimination, pretest means (M = 3.00, SD = 1.46) and posttest means (M = 3.76, SD = 1.19) were again statistically significant, $t(215) = 8.76$, $p < .001$, thus providing evidence to support rejecting the null hypothesis. Cohen's d was estimated at 0.53, which is a medium effect size based on Cohen's guidelines (Gignac & Szodorai, 2016). The Numbers and Operations subtest pretest means (M = 3.46, SD = 1.31) and posttest means (M = 4.14, SD = 1.10) yielded statistically significant results, $t(215) = 9.84$, $p < .001$, with a medium effect size (Cohen's d = 0.67). The Measurement subtest pretest means (M = 1.86, SD= 1.11) and posttest means (M = 2.45, SD = 1.06) were again statistically significant, $t(215) = 8.49$, $p < .001$, with a Cohen's d of 0.58, indicating a medium effect size. Finally, the

Geometric Concepts subtest yielded similar results. The Geometric Concepts pretest (M = 1.94, SD = 0.96) and posttest (M = 2.54, SD = 0.99) were statistically significant, $t(215) = 9.44$, $p <$ .001, with a Cohen's d of 0.64, indicating a medium effect size. A graphical representation of pre- and posttest data is displayed in Figure 3.

Figure 3
KRT Pre- and Posttest Scores by Subtest



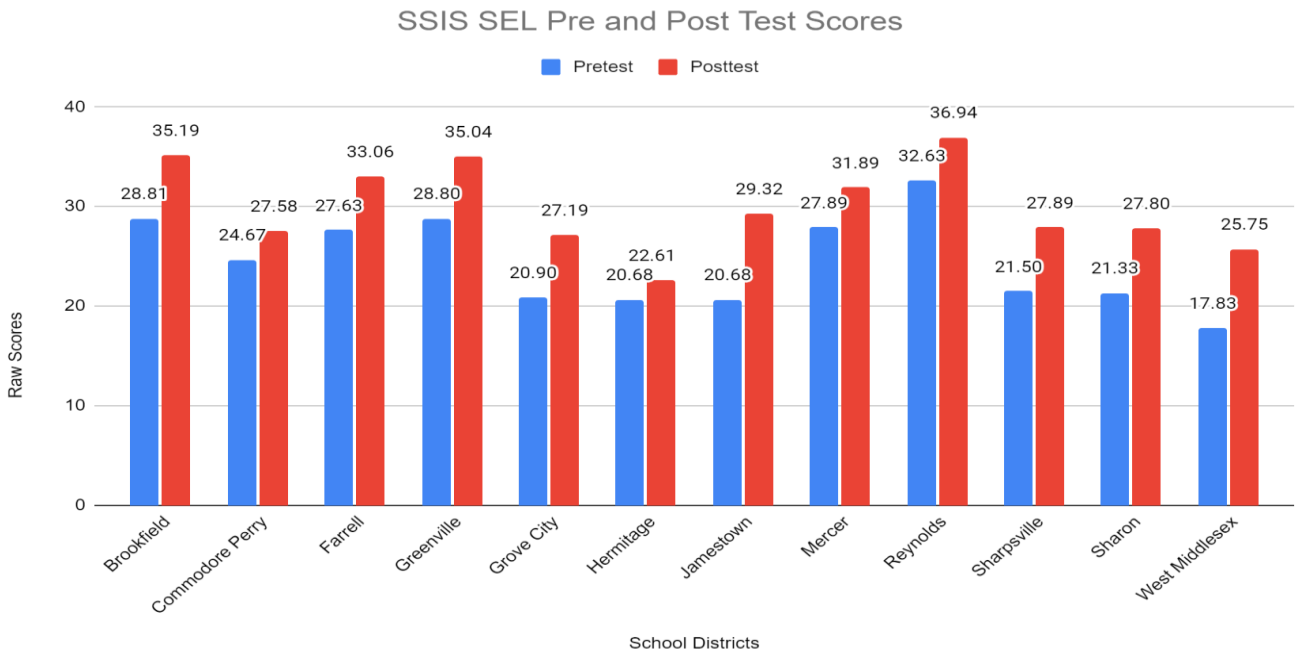
(3) What is the impact of the United Way of Mercer County's Success By 6™ program with regard to improving social emotional skills needed for kindergarten readiness?

Hypothesis 3 (H_1): Children in the United Way of Mercer County's Success By 6™ program will score statistically better in the posttest assessment than in the pretest assessment ($p \leq .05$).

To test the hypothesis that the social emotional pretest posttest means were equal, a paired samples t-test was conducted for the overall SSIS SEL progress monitoring scales. The

SSIS SEL pretest mean (M = 3.40, SD = 6.67) and posttest mean (M = 29.97, SD = 6.70) were statistically significant and therefore provided support, $t(231) = 22.13$, $p < .001$, to reject the null hypothesis that the means were equal. Cohen's d was estimated at 1.45, which is a large effect size based on Cohen's guidelines (Gignac & Szodorai, 2016). A graphical representation of the pre- and posttest data from the SSIS SEL by district is displayed in Figure 4.

Figure 4
SSIS SEL Pre- and Posttest Scores by District



Synthesis

In each of the three defined research questions, the null hypothesis was rejected, with statistically significant improvements in overall readiness, each academic area tested, and in social emotional skills. For overall academic readiness and social emotional readiness, effect sizes were very large, indicating that students made significant improvements in these areas.

Additionally, effect sizes for each of the academic areas tested (i.e., letter recognition, visual discrimination, phonemic awareness, listening comprehension, vocabulary, numbers and operations, measurement and geometric concepts), effect sizes were medium. Therefore, it can be inferred that participants in the program received effective instruction in readiness skills for both math and reading. This analysis supports the conclusion that the United Way of Mercer County's Success By 6™ program is highly effective in improving overall kindergarten readiness, both academically and socially/emotionally.

Conclusion

This chapter contained the results of the paired *t*-test calculations, evaluated the null hypotheses of each research question, and made conclusions about program effectiveness. Statistically significant results led to the rejection of the null hypothesis for all three research questions. Large effect sizes were found for overall readiness as measured by the KRT and overall social emotional improvements on the SSIS SEL. In Chapter 5, the implications of these findings are discussed and recommendations for future research will be proposed.

CHAPTER V: Discussion

Summary

Early childhood is a critical time in neural development. The brain experiences its largest growth in early childhood and capitalizing on this time of development leads to significant gains for the child, community, and society (Halfon et al., 2001; Highscope, n.d). Many factors can influence a child's readiness to start kindergarten such as poverty, hunger, disabilities, and racial disparities (Ansari & Winsler, 2016; Bailey, 2013; Kenne et al., 2018; Weiland, 2016). Early intervention and preschools have been tasked with closing the achievement gap prior to a child entering kindergarten. Unfortunately, not all preschools offer equally effective programming and may not be reaching the most at-risk populations. Low salaries for highly qualified professionals from poor state and federal funding has led to non-certified educators working with our most vulnerable and influenceable population (Allvin, 2020). This culminates in a large portion of the population entering kindergarten without the academic or social emotional skills needed to be successful in public schools. When participating school districts were asked by the United Way of Mercer County how many of the students registered for kindergarten in 2021 were lacking prerequisite skills based on individual district screeners, it was estimated that 47% of students were at-risk for poor school performance.

This led to the development of the Mercer County Success By 6™ program, established in 2005. This program offers 135 hours of instruction to children in the summer prior to kindergarten entry. The program is taught by two certified educators in a 10:1 ratio of students to teacher. To measure student progress, students are assessed at the beginning and end of the program using the KRT and SSIS SEL progress monitoring scales. In the current study, these scores were evaluated using a paired samples *t*-test and were found to be statistically significant.

The null hypothesis was rejected for all three research questions, which legitimizes the program's effectiveness.

Discussion of Findings

This chapter will discuss the findings and implications for the following research questions:

(1): **W**hat is the impact of the United Way of Mercer County's Success By 6™ program with regard to improving academic kindergarten readiness for at-risk students?

(2): What is the impact of the United Way of Mercer County's Success By 6™ program in regard to improving a child's academic skills in each of the areas assessed (i.e., letter recognition, visual discrimination, phonemic awareness, listening comprehension, vocabulary, numbers and operations, measurement, geometric concepts)?

(3): What is the impact of the United Way of Mercer County's Success By 6™ program with regard to improving social emotional skills needed for kindergarten readiness?

Data from the current study yielded statistically significant results in improving overall kindergarten readiness. Cohen's *d* calculations revealed a large effect size. This led to the conclusion that the United Way of Mercer County's Success By 6™ program creates a large impact on improving academic kindergarten readiness for at-risk students.

In regard to the second research question, paired *t*-tests were conducted for each subtest of the KRT. Again, statistically significant results were found with Cohen's *d* calculations within the moderate effect size range. Therefore, the United Way of Mercer County's Success By 6™ program has a moderate impact on improving letter recognition, visual discrimination, phonemic awareness, listening comprehension, vocabulary, numbers and operations, measurement, and geometric concepts.

Finally, the third research question targeted the impact of social emotional skills needed for kindergarten readiness. Statistically significant results were found between pre- and posttest means on the SSIS SEL progress monitoring scales. These results yielded the largest effect size, indicating a large impact on improving social emotional skills needed for kindergarten readiness.

Limitations

Several limitations were recognized in this study. First, data was collected from the United Way of Mercer County. Therefore, no experimental manipulations were made. Participants were selected by school districts and were not randomly selected. Also, this design lacked a control group because the research questions were answered with existing data.

Furthermore, consistent attendance was an issue throughout each program. Since this research took place during the COVID-19 pandemic, participants were expected to conform with district health and safety policies. This included mandatory quarantines for exposed students and extended absences for students who exhibited any predetermined symptoms. As discussed in the literature review, attendance has a direct impact on performance. With roughly 28% of participants missing five or more days of the program, this could have potentially impacted results.

Another potential limitation would be the limited data available on validity and reliability from outside experimenters on the KRT. While reliability data and rationale for construct validity is noted, research was not available using this assessment in other experiments. This can affect generalizability. Data has not been previously collected using the KRT as a tool to measure progress in readiness skills. Therefore, more research will be needed.

Implications

These results have implications that go beyond the program participants. Having research that supports the program's goals can benefit the United Way, families, school district administrators and teachers, local businesses, and society as a whole. First, the United Way benefits from this research by having data that legitimizes stakeholder investments. As stated earlier, investments in effective preschool programming yields a high return on investment. Therefore, donors can be assured that the investment will yield significant returns to the community. Data supporting program effectiveness will provide the United Way of Mercer County the opportunity to apply for additional grants and other funding sources which will allow the entity to retain highly effective staff and expand classrooms to reach more students.

Families receive the most immediate benefit from this research. When parents are determining whether or not to enroll their child, they can be assured that the program's instruction and goals align with improving readiness. Overall, parents had a very favorable opinion of the program. In an informal survey conducted by the program, parents rated their experience on a scale of 1 (*terrible experience*) to 10 (*wonderful experience*), 80% of respondents rated the program at a 10.

Administrators and teachers are avid supporters of this program. Having experienced the benefits of this intervention, students will have better readiness for kindergarten. The overall average of pretesting resulted in a score of 24.44, equivalent to a rating of *marginally ready* on the KRT. After posttesting was complete the average was 30.46, equivalent to a rating of *ready*.

Finally, this program has served as a model for other county United Ways. The hope of the United Way of Mercer County is that this program will be available state- and nationwide. With such strong evidence for effectiveness, other areas would benefit from implementation of

the program. This could lead to legislation that continues to support early intervention programs for at-risk students.

Recommendations for Further Research

This research leads to potential future studies. Program investors often question the long-term effects this program has on future school performance. While there is a large body of research that suggests that investments in early childhood yields results into adulthood, the long-lasting effects of participation in this program have not been studied. Potentially, a longitudinal study that follows the academic achievement of these participants would highlight the importance of improvements made prior to the start of kindergarten.

Further research could be conducted using the assessments themselves. Comparing the KRT to other highly regarded assessments is recommended. An informal survey conducted by the United Way of Mercer County was given to program teachers and found that 86% of teachers recommended continued use of the KRT and all teachers recommended the continued use of the SSIS SEL in future years. However, comparing results from multiple kindergarten-readiness tests would greatly improve a district's ability to accurately screen students and make recommendations.

Finally, this program could benefit from qualitative studies that focus on teacher and parent beliefs about outcomes for students. While the United Way of Mercer County provides surveys to parents and teachers to continue to improve standards for education, additional research would help to define the nontangible benefits of the program.

Conclusion

Early childhood is arguably the best time to intervene for students who are at-risk for school failure. While programs such as Head Start and Early Intervention have been effective in

closing the achievement gap, students are still entering kindergarten lacking prerequisite skills. The United Way of Mercer County provides an effective intervention program for at-risk students who will be entering kindergarten in the fall. The combination of evidence-based practices such as the use of highly qualified teachers, direct instruction in areas that have a large impact on reading and math (e.g., vocabulary, print knowledge, phonological awareness, visual discrimination), and monitoring progress yields a highly effective program with large effect sizes for overall readiness and social emotional skills. In conclusion, this program presents an evidence-based intervention option for children entering kindergarten who are at-risk for poor academic or social performance.

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APPENDIX A: CURRICULUM ALIGNMENT LETTERS

BROOKFIELD ELEMENTARY SCHOOL
614 Bedford Road SE, Brookfield, OH 44403
Fax (330) 448-8016

Stacey Filicky, Principal
(330) 619-5706
Stacey.Filicky@Brookfieldschools.us

Barb Simon, Secretary
(330) 619-5240
Barb.Simon@Brookfieldschools.us

February 3, 2021

Mario Marino, Executive Director
United Way of Mercer County
493 South Hermitage Road
Hermitage, PA 16148

Dear Mr. Marini:

As a participating school district in the Success by Six™ program of the United Way of Mercer County, this letter serves to notify all parties that the curriculum content and methods of instruction in the Success by Six™ Program are consistent with those used in our Kindergarten classes within our elementary school. Our teachers in both the Success by Six™ program and our Kindergarten program will work to align instructional and developmental activities so that our students will be better prepared to enter Kindergarten in our elementary school when and if they choose to do so.

We understand that the results of the assessments taken during the Success By Six™ program of the United Way of Mercer County will be used in a research study regarding the effectiveness of the program. Our program will conduct all assessments in a standardized manner as directed and will report results to the United Way of Mercer County WITHOUT identifying student information.

Respectfully,

Toby Gibson
Superintendent

Commodore Perry School District
3002 Perry Highway
Hadley, PA 16130

Michelle Young, Ph.D.
Elementary Principal
(724) 253-2025

Kimberly J. Zippie, Ed.D.
Superintendent
(724) 253-3255

Dan Ledebur
High School Principal
(724) 253-2232

February 5, 2021

Mario Marino, Executive Director
United Way of Mercer County
493 South Hermitage Road
Hermitage, PA 16148

Dear Mr. Marini:

As a participating school district in the Success by Six™ program of the United Way of Mercer County, this letter serves to notify all parties that the curriculum content and methods of instruction in the Success by Six™ Program are consistent with those used in our Kindergarten classes within our elementary school. Our teachers in both the Success by Six™ program and our Kindergarten program will work to align instructional and developmental activities so that our students will be better prepared to enter Kindergarten in our elementary school when and if they choose to do so.

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Respectfully,

Kimberly J. Zippie

Superintendent

Farrell Area School District
1600 Roemer Blvd.
Farrell, PA 16121
724-346-6585 (tel) 724-346-0223 (fax)

February 24, 2021

Mario Marino, Executive Director
United Way of Mercer County
493 South Hermitage Road
Hermitage, PA 16148

Dear Mr. Marini:

As a participating school district in the Success by Six™ program of the United Way of Mercer County, this letter serves to notify all parties that the curriculum content and methods of instruction in the Success by Six™ Program are consistent with those used in our Kindergarten classes within our elementary school. Our teachers in both the Success by Six™ program and our Kindergarten program will work to align instructional and developmental activities so that our students will be better prepared to enter Kindergarten in our elementary school when and if they choose to do so.

We understand that the results of the assessments taken during the Success By Six™ program of the United Way of Mercer County will be used in a research study regarding the effectiveness of the program. Our program will conduct all assessments in a standardized manner as directed and will report results to the United Way of Mercer County WITHOUT identifying student information.

Respectfully,

Lora Adams-King

Superintendent
Dr. Lora Adams-King

GREENVILLE AREA SCHOOL DISTRICT

9 Donation Road
Greenville, Pennsylvania 16125-1799
Phone (724) 588-2500
Fax (724) 588-5024

Mr. Brian S. Tokar
Superintendent

Mr. Brandon J. Mirizio
Business Manager

February 3, 2021

Mario Marino, Executive Director
United Way of Mercer County
493 South Hermitage Road
Hermitage, PA 16148

Dear Mr. Marini:

As a participating school district in the Success by Six™ program of the United Way of Mercer County, this letter serves to notify all parties that the curriculum content and methods of instruction in the Success by Six™ Program are consistent with those used in our Kindergarten classes within our elementary school. Our teachers in both the Success by Six™ program and our Kindergarten program will work to align instructional and developmental activities so that our students will be better prepared to enter Kindergarten in our elementary school when and if they choose to do so.

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Respectfully,

Brian Tokar
Superintendent
Greenville Area School District

GROVE CITY AREA SCHOOL DISTRICT

DR. JEFFREY A. FINCH
SUPERINTENDENT

February 3, 2021

Mario Marino, Executive Director
United Way of Mercer County
493 South Hermitage Road
Hermitage, PA 16148

Dear Mr. Marini:

As a participating school district in the Success by Six™ program of the United Way of Mercer County, this letter serves to notify all parties that the curriculum content and methods of instruction in the Success by Six™ Program are consistent with those used in our Kindergarten classes within our elementary school. Our teachers in both the Success by Six™ program and our Kindergarten program will work to align instructional and developmental activities so that our students will be better prepared to enter Kindergarten in our elementary school when and if they choose to do so.

We understand that the results of the assessments taken during the Success By Six™ program of the United Way of Mercer County will be used in a research study regarding the effectiveness of the program. Our program will conduct all assessments in a standardized manner as directed and will report results to the United Way of Mercer County WITHOUT identifying student information.

Respectfully,

Jeffrey A. Finch, Ed. D
Superintendent

511 HIGHLAND AVENUE ▸ GROVE CITY, PA 16127
PHONE: 724-458-6733 ▸ FAX: 724-458-5868

HERMITAGE
SCHOOL DISTRICT

Amy S. Wanchisn, Principal
Artman Elementary School
343 North Hermitage Road
Hermitage, PA 16148-3318

Telephone: 724.981.8750, ext. 5000
District Fax: 724.981.5080

February 3, 2021

Mario Marino, Executive Director
United Way of Mercer County
493 South Hermitage Road
Hermitage, PA 16148

Dear Mr. Marini:

As a participating school district in the Success by Six™ program of the United Way of Mercer County, this letter serves to notify all parties that the curriculum content and methods of instruction in the Success by Six™ Program are consistent with those used in our Kindergarten classes within our elementary school. Our teachers in both the Success by Six™ program and our Kindergarten program will work to align instructional and developmental activities so that our students will be better prepared to enter Kindergarten in our elementary school when and if they choose to do so.

We understand that the results of the assessments taken during the Success By Six™ program of the United Way of Mercer County will be used in a research study regarding the effectiveness of the program. Our program will conduct all assessments in a standardized manner as directed and will report results to the United Way of Mercer County WITHOUT identifying student information.

Respectfully,

Superintendent
Hermitage School District

MERCER AREA ELEMENTARY SCHOOL *Learners Today, Leaders Tomorrow*

301 Lamor Road
Mercer, PA 16137

Phone: 724-662-5102
Fax: 724-662-5103

Gregory R. Acre
Ext. 3010
Principal
gacre@mercer.k12.pa.us

Shirley A. Spiegel
Ext. 3020
Assistant Principal
Special Education Coordinator
sspiegel@mercer.k12.pa.us

February 3, 2021

Mario Marino, Executive Director
United Way of Mercer County
493 South Hermitage Road
Hermitage, PA 16148

Dear Mr. Marini:

As a participating school district in the Success by Six™ program of the United Way of Mercer County, this letter serves to notify all parties that the curriculum content and methods of instruction in the Success by Six™ Program are consistent with those used in our Kindergarten classes within our elementary school. Our teachers in both the Success by Six™ program and our Kindergarten program will work to align instructional and developmental activities so that our students will be better prepared to enter Kindergarten in our elementary school when and if they choose to do so.

We understand that the results of the assessments taken during the Success By Six™ program of the United Way of Mercer County will be used in a research study regarding the effectiveness of the program. Our program will conduct all assessments in a standardized manner as directed and will report results to the United Way of Mercer County WITHOUT identifying student information.

Respectfully,

Superintendent

REYNOLDS ELEMENTARY SCHOOL
1609 BRENTWOOD DRIVE, GREENVILLE PA 16125, MERCER COUNTY

John Sibeto
Superintendent of Schools

Mrs. Amy Leczner, Principal
Mrs. Mykie Morneweck, Head Teacher
Phone: 724-646-5601
Facsimile: 724-646-5605
Email: aleczner@reynolds.k12.pa.us
Email: mmorneweck@reynolds.k12.pa.us

February 10, 2021

Mario Marini, Executive Director
United Way of Mercer County
493 South Hermitage Road
Hermitage, PA 16148

Dear Mr. Marini:

As a participating school district in the Success by Six™ program of the United Way of Mercer County, this letter serves to notify all parties that the curriculum content and methods of instruction in the Success by Six™ Program are consistent with those used in our Kindergarten classes within our elementary school. Our teachers in both the Success by Six™ program and our Kindergarten program will work to align instructional and developmental activities so that our students will be better prepared to enter Kindergarten in our elementary school when and if they choose to do so.

We understand that the results of the assessments taken during the Success By Six™ program of the United Way of Mercer County will be used in a research study regarding the effectiveness of the program. Our program will conduct all assessments in a standardized manner as directed and will report results to the United Way of Mercer County WITHOUT identifying student information.

Respectfully,

John Sibeto
Superintendent

Sharpsville
AREA SCHOOL District

Date 2-3-21

Mario Marino, Executive Director
United Way of Mercer County
493 South Hermitage Road
Hermitage, PA 16148

Dear Mr. Marini:

As a participating school district in the Success by Six™ program of the United Way of Mercer County, this letter serves to notify all parties that the curriculum content and methods of instruction in the Success by Six™ Program are consistent with those used in our Kindergarten classes within our elementary school. Our teachers in both the Success by Six™ program and our Kindergarten program will work to align instructional and developmental activities so that our students will be better prepared to enter Kindergarten in our elementary school when and if they choose to do so.

We understand that the results of the assessments taken during the Success By Six™ program of the United Way of Mercer County will be used in a research study regarding the effectiveness of the program. Our program will conduct all assessments in a standardized manner as directed and will report results to the United Way of Mercer County WITHOUT identifying student information.

Respectfully,

John P. Vannoy

Superintendent

1 Blue Devil Way, Sharpsville, Pennsylvania 16150
www.sharpsville.k12.pa.us
E.O.E. Institution

(724) 962-8300 Superintendent's Office
(724) 962-8300 Business Office
(724) 962-7873 Fax

WEST MIDDLESEX AREA SCHOOL DISTRICT

Educating the youth of: West Middlesex Borough, Lackawannock and Shenango Townships

Raymond C. Omer
Superintendent

3591 Sharon Road
West Middlesex, PA 16159-9799
Telephone: 724-634-3014
Fax: 724-528-0380

"An Equal Opportunity Employer"

February 8, 2021

Mr. Mario Marini, Executive Director
United Way of Mercer County
493 South Hermitage Road
Hermitage, PA 16148

Dear Mr. Marini:

As a participating school district in the Success by Six™ program of the United Way of Mercer County, this letter serves to notify all parties that the curriculum content and methods of instruction in the Success by Six™ Program are consistent with those used in our Kindergarten classes within our elementary school. Our teachers in both the Success by Six™ program and our Kindergarten program will work to align instructional and developmental activities so that our students will be better prepared to enter Kindergarten in our elementary school when and if they choose to do so.

We understand that the results of the assessments taken during the Success By Six™ program of the United Way of Mercer County will be used in a research study regarding the effectiveness of the program. Our program will conduct all assessments in a standardized manner as directed and will report results to the United Way of Mercer County WITHOUT identifying student information.

Respectfully,

R/C Omer

Raymond C. Omer
Superintendent

RCO/mm

APPENDIX B: PROGRAM PARTICIPATION CONSENTS

United Way SUCCESS BY 6™

United Way of Mercer County

Welcome to Success By 6™ sponsored by United Way of Mercer County!

We are delighted to host the Success By 6™ Program for your district this year. Since 2004, Success By 6™ has sponsored a summer camp taught by two certified teachers for incoming kindergarteners. The program is 6 weeks in length and provides 135 hours of school-based learning ahead of attending the first day of Kindergarten.

You may be thinking "Wait, my child just registered for kindergarten and you already want him to attend a summer school?" The answer is "YES!" and here's why…

This evidence-based initiative has statistically validated increased proficiency in the areas of reading, math, language, social and fine motor skills.

- The brain develops rapidly at an early age.
- Hours spent learning at this age level are more powerful than months of learning in middle age.
- The children who are involved in successful early education programs are more likely to graduate high school and mature into responsible adults, more likely to be married with higher educational attainment and better jobs.

The United Way of Mercer County is proud of the partnerships we have with area associations who provide valuable services to our students. The following opportunities with Success By 6™ include:

· Keystone Blind Association vision screenings. The screenings identify eye conditions that may include amblyopia (lazy eye), near or far sightedness and astigmatism.

· Walberg Family Pharmacies provide students from Kindergarten through 6th grade high-quality vitamins every month for no charge.

· AmeriHealth Caritas, Pennsylvania, provides each classroom with a dental hygiene lesson.

· Junior Achievement: Financial professionals provide 3.5 classroom hours of financial literacy lessons.

· Erie Arts and Culture will be providing arts and music instruction weekly to our students.

All children are provided a backpack and lunch at **no charge to the family**.

The (SCHOOL DISTRICT NAME) will host their Success By 6™ Program at (BUILDING NAME) from (DATES) from (times). Please contact (DISTRICT SUPERVISOR) at (PHONE) to register your child. We thank you for your interest and potential participation in our program.

Sincerely,

Mario Marini, Executive Director Nicole Billak, Success by 6™ Project Manager

United Way Mercer County United Way Mercer County

Dear Parent or Guardian:

Thank you for enrolling your child in the Success By 6™ of Mercer County program. The United Way of Mercer County has been a proud sponsor of this program for over a decade and we continue to support early childhood education. This form will serve as your consent to participate in the program. We also ask that all parents sign a photo release giving the school district and United Way employees permission to take pictures and video to document your child's involvement.

Consent to Participate: Please initial on the line below

_____ I consent to have my child participate in the 2021 United Way of Mercer County Success By 6™ program. I agree to follow the school district's health and safety policies adopted by the school board. I understand that my child will take part of pre- and post-testing to be used to measure my child's progress in the program. My child's name will not be reported with my child's score to the United Way of Mercer County. These scores can be used for research, promotional, and/or funding purposes.

Photographic, Digital Image and Video Release Form: Please initial on the line below

_____I hereby grant permission to the United Way and my local school district to photograph or videotape (in any media) my child's image, likeness, or depiction. I understand that the United Way may use such photographs or images with or without associating names thereto. The digital images will be used to promote the Success by 6™ summer program and other United Way promotions.

Child's name:_____ School District: _____

Signature of Parent or Guardian: _____

Date: _____

We will be asking for feedback from you at the conclusion of this program through a SurveyMonkey link. Please list an email address that we can use to send the link.

Parent email:_____

If you have any questions, please feel free to contact me at nbillak@uwmercercounty.org. Thank you for taking time to complete this form and for enrolling your child in Success By 6™. Your commitment to your child's education is commendable!

United Way SUCCESS BY 6™

United Way of Mercer County

Dear parent or guardian,

The United Way of Mercer County accepts both private and business donations to fund this program. In order to correctly allocate our funding, we need to collect some financial information from you to decide if we can use money donated under the Early Education Improvement Tax Credit to cover your child's tuition or if we need to use private donations. Regardless of the information you provide below, your child is still welcome to attend our program at no cost to you. However, for us to use money donated under the Early Education Improvement Tax Credit, children and families need to meet the following criteria:

1. Children must be between the ages of 3-6 years old
2. Have a household gross income of less than $92,160. An additional $16,222 can be added for each additional dependent living in that household. For example, a husband and wife with 2 children can make up to $108,,382 and still qualify to use EITC funding
3. Add an additional $15,842 for children who qualify for receiving special education services
4. In calculating household income for the purpose of determining student eligibility, all moneys and property received of whatever nature and from whatever source are to be included, except for the following:
    1. Periodic payments for sickness and disability other than regular wages received during a period of sickness or disability.
    2. b. Disability, retirement or other payments arising under workers' compensation acts, occupational disease acts and similar legislation by any government.
    3. Payments commonly recognized as old age or retirement benefits paid to persons retired from service after reaching a specific age or after a stated period of employment.
    4. Payments commonly known as public assistance or unemployment compensation payments by a governmental agency.
    5. Payments to reimburse actual expenses.
    6. Payments made by employers or labor unions for programs covering hospitalization, sickness, disability or death, supplemental unemployment benefits, strike benefits, social security and retirement. g. Compensation received by United States servicemen serving in a combat zone.

For the United Way of Mercer County to fiscally support the Success By 6 program, it is necessary that we collect evidence from qualified families in order to receive this assistance. The principal in each building will serve as a witness of financial eligibility and sign below. Your financial

documentation will be immediately returned to you and will not be seen by the United Way. Please complete the following information on the back and collect the recommended documentation.

United Way SUCCESS BY 6™

United Way of Mercer County

2021 FERPA Release

Child's name: _____ Parent/Guardian Name:_____

School District: _____

Phone: _____ Address: _____

City: _____ State: _____ Zip: _____

Number of additional dependents living in the home: _____

Does your child qualify for special education? Yes No (if yes, please add an additional $16,222)

Please check the following verification:

___ My child/children receive free and reduced lunch (no additional paperwork is needed, please sign the bottom and return to the principal)

___ My child/children attended Head Start (no additional paperwork is needed, please sign the bottom and return to the principal)

____ My family income is under $92,160 + an additional $$16,222 per dependent

(please show income verification to building principal)

__ My family income is over the $92,160 + an additional $$16,222 per dependent. No additional verification needed

I attest that the above information is correct and true to my knowledge

Parent Signature: _____ Date:_____

Administrator Signature:_____ Date: _____