EFFECTS OF SOCIAL-EMOTIONAL EDUCATION ON PRE-KINDERGARTEN

STUDENT ACADEMIC ACHIEVEMENT

by

Lauren Pierce Starnes

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

Social-emotional education is an ongoing area of interest to optimize student achievement and ameliorate problem behaviors. This study examines the systematic effects of social-emotional education on preschool students' academic achievement testing. A sample of Pre-Kindergarten students from private, suburban preschools was examined for this study. The results of this study yielded strong positive academic achievement scores in the domains of Verbal Reasoning, Quantitative Reasoning, and Early Math for students exposed to a social-emotional education program compared to a matched sample not exposed to social-emotional education. The results add to the research on social-emotional education by studying a lesser-studied population of students not deemed as at-risk. Preschool programs are encouraged to instill social-emotional education programs.

Keywords: social-emotional education, preschool, character education, academic achievement

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CHAPTER ONE: INTRODUCTION

Overview

Character education program and social-emotional education program implementation in schools is not a new phenomenon or focus, but social-emotional education has generated a resurged interest in wake of the attention given to bullying in schools. While the general perception is that character education and social-emotional education programs have a positive impact on students, conflicting findings exist in the current body of research and the bulk of the research has been focused upon upper elementary and secondary school students. Understanding the effects of character education programs on younger students will serve as a strong foundation for how social and emotional knowledge is cognitively constructed during this period and how a change in a child's social environment and alterations in a child's school culture influences other areas of development (Burroughs & Barkauskas, 2017).

By better understanding the effects of social-emotional education programs on preschool aged students, more schools may consider character education options to counteract the growing culture of bullying.

Background

Bullying is defined, "intentional negative behavior that is repeated and involves an imbalance of social or physical power (Olweus, 1993). Because bullying involves a social relationship, or lack thereof, between the bully and the victim, both parties lack some necessary social and emotional skills to stop the cycle (Bradshaw, Sawyer, & O'Brennan, 2007). The typical profile of a child engaging in bullying behaviors reveal a desire to gain social status and social recognition with others. The victims of bullying tend to be socially withdrawn children who lack a sense of self-confidence. Even the children who observe

bullying and do not intervene tend to show feelings of guilt and fear of intervention out of the possible threat of becoming the next victim (Perren & Alsaker, 2006). The link between bullying behaviors and social-emotional skills in children is undeniable and of critical importance to address. While bullying prevention also requires policies and procedures to be in place within schools, it is equally important that a focus be made on improving the social and emotional skill levels of students.

Bullying has always been an issue in schools, but with recent, horrific, violent acts in schools, bullying is receiving even greater attention. A well-known website devoted to addressing and preventing bullying in schools run by the United States Department of Health and Human Services defines bullying as "unwanted, aggressive behavior among school aged children that involves a real or perceived power imbalance. The behavior is repeated, or has the potential to be repeated, over time. In light of such recent tragedies as the Columbine High School massacre in 1999, the Virginia Tech massacre in 2007, and the more recent Sandy Hook Elementary School massacre in 2012, attention has shifted back to the influential work of Dan Olweus on bullying and the effects on both bully and victim. Olweus studied bullying and its effects in schools located in Norway and Sweden in the 1980s creating a strong foundational start into the study of bullying and bullying effects. Through such work, he identified character profiles of student bullies and student victims. He also investigated the impact of teachers and their action or inaction in instances of bullying; "the teachers did relatively little to stop bullying at school according to both the bullied and bullying student" (Olweus, 1988). Olweus (1988) additionally found that students victimized by bullies experienced lasting detrimental effects on self-concept, self-esteem, and social anxiety. Bullies extend bullying patterns beyond peers to teachers, parents, and other family members

(Olweus, 1988). The work of Olweus triggered subsequent research studies of bullying profiles repeatedly affirming the initial work begun decades ago (e.g. Baly, Cornell, & Lovegrove, 2014; Smith, 2016).

Bullying is typically emphasized during adolescence, but research has shown that bullying and teasing become pervasive problems as early as preschool (Bistrong, Bradshaw, & Morin, 2016). A 2007 study conducted at the Stanford University Medical Center found that ninety percent of students reported having been bullied by classmates and nearly sixty percent reported having participated in bullying at some point (Stanford University Medical Center, 2007). Many schools have revisited social and emotional education programs as a means of countering such bullying behavior, and the results have been positive (Beets, Flay, et al., 2009; Berkowitz & Bier, 2004; Brannon, 2008). Some studies have shown marked improvement in decreasing problem behaviors in students (Beets, et al., 2009). Other studies have shown increases in prosocial behavior following formalized exposure to social and emotional education programs (DeRosier & Mercer, 2007). While a great deal of extant research has focused on elementary students or older age groups, there is a noted gap in the research on the effects of social and emotional education programs on preschool aged children (Burroughs & Barkauskas, 2017). Knowing that bullying is starting earlier than adolescence, there is a need to examine social and emotional education programs at this young age. Social-emotional learning includes the underlying processes to manage emotions, demonstrate concern for other people, engage in positive social interactions with others, and handle challenges (Collaborative for Academic, Social, and Emotional Learning (CASEL, 2003). Bullying behaviors reflect gaps in social-emotional learning both in the role of the bully and in the role of the victim. Bullying must be counteracted by seeking to improve the

fundamental skillsets that show immaturity (Society for Research in Child Development, 2008).

Various studies have systematically evaluated the effects of formalized social and emotional education programs on students, looking at differing populations and through different lenses of focus. A 5-year longitudinal study in Hawaii examined the effects of implementing a social and emotional education program on bullying, substance use, aggressive behaviors, and sexual activity in samples of elementary students (Beets, et al., 2009). Results clearly showed the impact of social and emotional education programs on decreasing bullying, substance use, sexual activity rates, and violent behavior incidences from those students exposed to the school-wide social and emotional education programs. Those students with greater years exposed to the program had the greatest effect.

Consistent with the prior noted research, White and Warfa (2011) conducted a case study of the effects of beginning a social-emotional education program in a primary school in England. Through a six-month period, researchers noted a sharp decline in teacher talk, instances of student off-task behavior, and student misbehavior. These findings closely kept with the findings of Parker, Nelson, and Burns (2010) in their examination of classroom problem behavior rates in schools that do and do not have social and emotional education programs. Schools with social and emotional education programs were found to have significantly lower levels of problem behaviors even when controlling for class size. This correlation was found to significantly correspond with the rate of students receiving free or reduced price meals, indicating a greater impact on students from low socioeconomic backgrounds. Age also seemed to play a role in the impact of social and emotional education programs (DeRosier & Mercer, 2007). A significant decrease in aggression along with a

significant increase in prosocial behavior were seen for those students in the intervention condition. Students in the upper elementary condition group were also found to show declines in aggression and immature-impulsive behavior compared to the control group.

A research study conducted with preschool aged students in Taiwan examined how social and emotional education programming in preschool affects the parent-child relationship (Chou, Yang, & Huang, 2014). A formalized social and emotional education program was studied across 10 cities in Taiwan where the program was implemented in school and at home. Parents and early childhood educators were emailed surveys to complete prior to program implementation and again at the conclusion of the program. Results indicated that parents reported stronger relationships with their child and stronger perceptions of their child's positive social character following exposure to the social and emotional education program. A control group was not included in this study, so it is difficult to draw strong conclusive application from the results of this study.

Bullying was specifically studied in a sample of preschool aged students to determine how well preschoolers could define and describe bullying and the impact of children's literature on shaping this perception (Freeman, 2014). Children between the ages of four and six were asked to define "bully", to name a bully if they knew one, and to describe behaviors that make someone a bully. The children were then exposed to books about bullying, teasing, and other social-emotional learning themes. The children were then re-interviewed and showed more developed and robust understandings of the concept of bullying. While this study shows the impact of direct teaching on preschool students, the scope is limited because it does not address teaching children social-emotional skills to proactively prevent bullying.

The literature shows a need to explore the impact of social and emotional education programs on young students. While the majority of the literature does show positive effects of direct support of social-emotional teaching on students, there is little to no literature available on the direct impacts of social and emotional education programs on preschool students' development. Bullying behavior is prevalent in many elementary schools, and structured social-emotional education programs have been shown to positively impact elementary student behavior and conceptual understanding of bullying. It is thus imperative that an investigative lens be turned towards the foundational preschool years to further understand the development of social-emotional skills and to hopefully yield even stronger subsequent effects for grade-school students.

Problem Statement

The current body of research reflects positive support for social and emotional education programs having a direct effect on reducing problem behaviors (e.g. Beets, Flay, et al., 2009). Research studies with elementary age students has reflected positive effects in reducing problem behavior and reducing off-task behavior (White & Warfa, 2011). The research has supported social and emotional education programs in adolescent populations as well, with the overwhelming trend that the implementation of school-wide social and emotional education programs has a high correlation with reduced disciplinary issues, increased school attendance, and higher standardized academic testing scores (Goss & Holt, 2014).

While it is critical to have social and emotional education programs in elementary and secondary school, these programs need to begin at the earliest levels of instruction to develop foundational prosocial values in young students. Lawrence Kohlberg, a pivotal theorist in the

domain of moral development across childhood, offers insightful reasoning on how children come to understand and internalize morality. Even at the lowest pre-conventional stage, children are obedience and punishment driven, thus there is reasoning to begin embedding social and emotional education (Miller, 2010). Early childhood is the key time to instill social and emotional skills critical for future development. Young children who lack social and emotional skills frequently exhibit disciplinary problems in school and are at risk for poor academic achievement (McClelland, 2006). Specifically, behavioral difficulties increase the risk of school dropout, substance abuse, delinquency, and violent behavioral offenses (Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999). Fostering strong social and emotional skills is strongly correlated to positive life outcomes and overall academic achievement (Richardson, 2000).

The problem is a gap in the current research reflecting a need to examine the influence of social-emotional education programs on preschool aged children. Current research postulates that these programs can have a positive academic influence on preschool aged students, but this has not been shown in targeted research. The research that has focused upon younger students has almost exclusively examined effects of social-emotional programming in at-risk students enrolled in subsidized state-run programs. This population needs focus, but bullying behaviors exist across demographics leading to a need to also examine populations of preschool students not deemed to be at-risk. Looking closely into the effects of social-emotional programs on preschool students has the potential to generate an increased foci and elevated importance on the need to instill social-emotional education in all preschools.

Purpose Statement

The purpose of this study is to examine the influence of a formalized social-emotional education program, *Second Step-Early Learning*, on the literacy and mathematics achievement of Pre-Kindergarten students. The purpose of this study will be to extend the current research on social-emotional education programs into a younger age group. The social-emotional education program is Second Step-Early Learning, an instructional kit designed to support teachers in teaching young children how to identify and label emotions in self and others, friendship skills, and social problem solving skills. Academic achievement is defined as quantitative reasoning percentile score, verbal reasoning percentile score, early literacy percentile score and early mathematics percentile score on the standardized test AABL (Admission Assessment for Beginning Learners) of Educational Records Bureau. The study population will be Pre-Kindergarten students from three suburban private preschools all utilizing a consistent proprietary academic curriculum. One of the three study schools utilizes *Second Step-Early Learning* additionally in its instructional program, while the other two study schools do not use this supplemental instructional program. This study population is thus consistent in academic program, and the only variable of variance is the presence or absence of *Second Step-Early Learning*, a social-emotional education program.

Significance of the Study

This study will fill a critical gap that currently exists in the literature in the subject areas of social and emotional education and its effects by studying a unique age group population. Numerous studies have examined the effects of social and emotional education programs on K-12 (kindergarten through grade 12) student outcomes, but there have been

minimal investigations into the Pre-Kindergarten population (e.g. Smith, 2013). With strong evidence of bullying problems in K-12 education and findings that early bullying emerges in preschool education, it is critical to understand how social and emotional education programs implemented prior to entrance to elementary school may help alter this phenomenon and may alter the academic trajectories for young students (Snyder et al, 2012).

Pre-Kindergarten programs have become increasingly academic in the wake of No Child Left Behind, Race to the Top grant funding competitions, and the implementation of Common Core State Standards (Paige, McLaughlin, & Almon, 2015). To accomplish the increased academic expectations, particularly in the domains of literacy, preschools question how best to balance a rich academic education with a well-rounded developmentally appropriate experience (NAEYC, 2015). While academic growth is important, equally important is growth in character. Stiff-Williams (2010) asserts, "Regrettably, a focus on standards-based teaching has caused many teachers to overemphasize cognitive development to the detriment of affective development" (p. 116). This study will show the effects of social-emotional education on academic achievement, which will be pertinent and relevant to early childhood educators nationwide and will also hold relevance for K-12 education. The more that is known about how best to establish a strong social-emotional foundation, the more we can shape the social and emotional climate and educational outcomes for all students.

Research Questions

RQ1: How does a formalized social-emotional education program influence academic achievement in early literacy on standardized testing in Pre-Kindergarten students as compared to Pre-Kindergarten students not exposed to such a program?

RQ2: How does a formalized social-emotional education program influence academic achievement in mathematics on standardized testing in Pre-Kindergarten students as compared to Pre-Kindergarten students not exposed to such a program?

Definitions

1. *Character education* is defined as "acquisition and strengthening of virtues (qualities), values (ideals and concepts), and the capacity to make wise choices for a well-rounded life and a thriving society" (Center for Curriculum Redesign, 2015).

2. *Social-emotional education* is defined as the skills or talents that students require to empathize with others, establish relationships, manage emotions, and achieve established goals (Dodds, 2016). Social-emotional education is defined as being comprised of five core competencies. These five are social-awareness, self-awareness, self-management, decision making, and relationship management (CASEL, 2003).

3. *Academic achievement* is defined as the level of mastery of skills as measured on a valid and reliable instrument for the age and level of the student. Academic achievement is often measured through use of "standardized tests, academic grades, and teacher evaluations" (Tomporowski et al, 2008, p. 115).

CHAPTER TWO: LITERATURE REVIEW

Overview

Social-emotional education is not a new approach, nor is it an educational fad. Social-emotional education has roots dating back to the time of Plato, where it was realized that students needed more than academic preparation to be successful in life; they needed support in learning how to responsibly interact in the world. Plato asserted that character needed to be nurtured cognitively to help students learn what is socially desirable (Gutek, 2011). By studying the historical theoretical underpinnings of social-emotional education coupled with the more current research on social-emotional education, the need to understand the systemic effects of social-emotional character education on young students becomes paramount.

Bullying is a pervasive problem in schools beginning as early as preschool. A 2007 study conducted at the Stanford University Medical Center found that ninety percent of Pre-Kindergarten students reported that they were bullied by classmates and nearly sixty percent of the surveyed Pre-Kindergarten students reported having participated in bullying at some point (Stanford University Medical Center, 2007). Many schools have revisited social-emotional education as a means of countering such bullying behavior, and the results ~~seen~~ have been strikingly positive (Beets, Flay, et al., 2009; Berkowitz & Bier, 2004; Brannon, 2008). Some studies have shown marked improvement in decreasing problem behaviors in students (Beets, et al., 2009). Other studies have shown increases in prosocial behavior following participation in formal social-emotional education programs (DeRosier & Mercer, 2007). While a great deal of extant research has focused on elementary students or older age groups, there is a noted gap in the research on the effects of social-emotional education programming on preschool aged children. With evidence that bullying is starting earlier than

ever thought before, there is a need to examine social-emotional education in the foundational preschool years. This study may alter the focus of future research with older age groups, and it will offer critical insight into how social and emotional behaviors are shaped and altered at foundational points of development.

Furthermore, it is critical to examine the potential effects of exposing young children to formalized social-emotional character education. Knowing that such programs have professional development requirements and often carry financial cost, the demonstration of the effects of social-emotional character education may justify the expense of such programs. Early childhood is a period of immense cognitive, social, and emotional skill gains, which create the foundation for subsequent social and school success (Bistrong, Bradshaw, & Morin, 2016). Early school success provides the basis for future school success, but it comes back to those core early skills and experiences (Mann, et al., 2017). Students who are reported to have stronger social-emotional skills by their teachers are more likely to also be rated as better prepared for school (Blair, 2002). The question remains how social-emotional education influences academic achievement.

Theoretical Framework

Social-emotional education can be traced back to the times of Plato but is grounded by the modern work of noted development theorists, Jean Piaget, Lev Vygotsky, and Lawrence Kohlberg. By analyzing the historical basis of instilling social-emotional education, it is possible to develop a more robust understanding of the modern application and immersion of social-emotional education in schools. The focus of the proposed research, analyzing the effects of a formalized social-emotional education program on preschool children's learning outcomes, can further extend the theory of each of these theorists into a lesser-studied age

demographic. With a strong theoretical basis, a sound research design, and a meaningful targeted study population, a meaningful, grounded research study can be developed.

Jean Piaget's theory of cognitive development hypothesizes how children come to adapt to and understand their environment. The theory of Jean Piaget theory is applied in the notion that children construct knowledge through new experiences. As new experiences are encountered, children either integrate and adapt knowledge into existing schemas, through assimilation, or alter their schemas to encompass the new experience through accommodation (Santrock, 2010). As children move through discrete stages, they make qualitative shifts in the way in which they perceive, interpret, problem solve and think. Because these shifts occur in delineated stages, a dominant strand pulled from Piaget's theory is the concept of learning readiness. In other words, are children at the point in cognitive development that they are able and ready to qualitatively shift their thinking?

Piaget proposed that children progress in four distinct stages of cognitive development. These four stages are sensorimotor (infancy through age two), pre-operational (age two through seven), concrete operational (age seven through twelve), and formal operational (adolescence through adulthood) (Santrock, 2010). His theory posits changes in the qualitative properties of cognition as opposed to quantitative changes (Santrock, 2010). This theory would be evident in research on the effects of social-emotional education programs on students by looking for specific types of social-emotional education programs, which are more visual and concrete, by looking at changes in how children think about social interactions, and by looking at outcome measures, which show changes in cognition (Lin, Enright, & Klatt, 2011). The work of Piaget would also be supported in research studies which look uniquely at distinct age-groups and expect differences in what would be seen in

toddlers compared to preschool and early elementary students as then compared to adolescent students.

Lev Vygotsky offers a distinct yet complementary theory of cognitive development, the sociocultural theory of cognition (Santrock, 2010). The theory of Lev Vygotsky is applied in the premise that children's knowledge is shaped through experience and interactions within a social context in the presence of a more experienced other. Children's knowledge and learning is directly related to the environment, interactions, and culture in which the child resides and functions. Vygotsky argued, "Learning is a necessary and universal aspect of the process of developing culturally organized, specifically human psychological function" (Vygotsky, 1978, p. 90). Vygotsky strongly asserted that social learning precedes development and that language serves as the primary catalyst in cognitive adaptations. Studies from this theoretical approach would look for evidence of social learning growth and secondarily the impact such social learning growth would have on other domains of development. These studies would assume rippled effects of social learning and would thus measure social learning and explore related changes in other domains of development, such as cognition, language, and comprehension. Studies from a true Vygotskian approach would also measure the extent to which the social-emotional character education program changed the thinking or perception of "more knowledgeable others," such as parents or teachers (Santrock, 2010). Vygotsky theorized a web of interconnectedness, which would require exploring immediate and distal effects from the view of primary and secondary social figures.

Lawrence Kohlberg, a pivotal theorist in the domain of moral development across childhood, offers insightful reasoning about how children come to understand and internalize what is right and what is wrong. Influenced heavily by Jean Piaget, Kohlberg posited that

human beings progress through three distinct levels of moral development, with each level subdivided into two stages (Santrock, 2010). At each stage, people change how they reason and critically evaluate decision-making scenarios, which they could hypothetically encounter in their social lives. Even at the lowest stage of the lowest level of moral development, the Preconventional Stage, children are obedience and punishment driven. Thus there is sound theoretical reasoning to begin embedding social-emotional education as early as possible to begin to shape this notion of what is right versus what is wrong (Miller, 2010). As children move into the second stage of the lowest level of moral development, individuals begin to evaluate the perspective and opinions of others, indicating an evolved sense of social and emotional understanding. Studies from this theoretical approach would focus on a child's social and emotional knowledge and skill level but would use intervention programs designed to help children learn how to navigate social conflict and manage emotions in a prosocial manner.

The proposed research is firmly grounded in the theoretical foundation of Jean Piaget, Lev Vygotsky, and Lawrence Kohlberg. The proposed social-emotional education program to be studied is highly visual and concrete, and the research design will measure changes in young children's cognitive development as would be expected from the theory of Jean Piaget. The proposed study will further delineate the pre-operational stage, however, by looking for changes in cognition of Pre-Kindergarten aged children as assessed on a standardized measure of literacy and mathematical concepts. The proposed research adopts the Vygotskian principle that changes in social learning yield changes in language and cognition hence the foci of exploring immediate and distal changes in different realms of development. This study has the potential to affirm that notion if the studied social-emotional education program

leads to significant changes in academic achievement compared to children who do not have exposure to the formalized social learning program.

Finally, the proposed research adopts the Kohlberg tenet of moral development and has the potential to affirm that children progress sequentially through moral development as they acquire greater social and emotional skills. The target social-emotional education program planned for use in the intervention groups teaches children about emotions, emotion management, peer interactions, peer conflict management, and appropriate ways to engage in peer social interactions. It also offers children guidance on when to seek help to make decisions, a tenet very much in line with the theoretical work of Kohlberg.

Related Literature

Social-emotional education has historical roots back as far as Plato, in which he contends that students of character must be nurtured cognitively and with affective elements to help guide them to learn what is good and desirable (Gutek, 2011). While social-emotional education is not at all a new notion, it has received heightened interest of late given the staggering statistics regarding the rate of bullying in K-12 education. According to 2007 National Center for Education Statistics, nearly one-third of all students in middle and high school reported having been bullied at school with some reporting incidences occurring daily (www.nces.ed.gov). Equally as staggering are the statistics regarding bullying in elementary school, where a 2007 study conducted at the Stanford University Medical Center found that nine out of ten students responded to having been bullied before by classmates and nearly six out of ten reporting to have participated in bullying at some point (Stanford University Medical Center, 2007). Many schools have revisited social-emotional education as a means of countering such bullying behavior, but is it effective? What does the current research show

in regards to the evidentiary effects of a social-emotional education program on elementary school students?

Character Education as a Concept

The term, character education, as it is currently defined and applied in the literature, emerged in the early 1900's from the seminal work of Thomas Lickona, in his books *The Return of Character Education* followed by *Educating for Character: How Our Schools Can Teach Respect and Responsibility* (Kamaruddin, 2012). Lickona defined character education as a summation of three components: knowing good, loving good (kindness), and doing good (Lickona, 1991). Thomas Lickona defined character education in his own words as, "a reliable inner disposition to respond to situations in a morally good way…so conceived character has three interrelated parts: moral knowing, moral feeling, and moral behavior" (Lickona, 1991, pg. 51). Character education emerged as more than teaching children right from wrong but developing the habitual pattern of behavior that showed commitment to the moral good. As such, character education became more than an applied program but a mission similar to moral education (Kamaruddin, 2012).

Modern education increasingly seeks to include elements of character education due to a series of national tragedies at schools, but historically purposeful character education can be traced back to Biblical times in which school was seen as serving the purpose of educating and developing the moral character of children. John Lawrence Childs, an educational reformer in the early 1900's who worked closely with the father of modern education, John Dewey, wrote of the importance of character education. He saw character education as a primary focus of modern education and one that was inherently shaped and guided through the experience of learning. He wrote:

The child who is learning through empirical procedures to discriminate the better

from the worse in the different mundane spheres of human activity is, at the same

time, growing in capacity for moral judgment. It is in and through these varied and

interrelated life activities that the real occasions for moral decision arise, and the child

grows in his capacity to function as a responsible moral agent as he grows in his

ability to make judgments of the good and the bad in terms of concrete consequences.

Moral behavior is thus a function of the entire experience of the child, and all

education is inescapably a form of character education. (p. 167)

Social-Emotional Learning as a Concept

While a vast amount of research exists on the effects of character education programs

on elementary and secondary school students, other studies have altered the dependent

variable defining it instead as social-emotional development programming. Character

education is social-emotional education but lacks the depth of underlying skill basis that a

formalized social-emotional education program takes. Character education focuses on

altering behavior, whereas social-emotional education focuses on improving underlying social

and emotional skills, which will in turn alter behavior but will also alter other realms of the

child's development. The Collaborative for Academic, Social and Emotional Learning

(CASEL) defines social-emotional learning as "a process for helping children and even adults

develop the fundamental skills for life effectiveness" (CASEL, 2013). PATHS, Promoting

Alternative Thinking Strategies, is a curriculum-based social-emotional learning intervention

program that has been studied in elementary students (PATHS, 2013). Students exposed to

the PATHS social-emotional learning program showed improved emotional skills, stronger

peer interactions, and had significant cognitive gains (Greenberg et al., 2006, 2010).

Specifically, students showed heightened rates of concentration on cognitive tasks and significant increases in verbal fluency scores (Greenberg et al., 2006, 2010). These findings maintain the trend of cognitive benefit from direct support and teaching in social-emotional character education programs and keeps in line with the expectations set forth from the theories of Piaget and Vygotksy.

There are numerous social-emotional education programs utilized in schools and childcare settings. The majority of such programs focus on the prevention of problem behaviors and the promotion of self-awareness (emotion identification, self-perception, self-confidence), self-management (impulse control, goal-setting, motivation), social awareness (empathy, perspective taking, respectful behavior), relationship skills (making friends, teamwork, cooperation), and decision making (reflection, responsibility, finding solutions) (CASEL, 2003). The social-emotional education programs that are deemed the most successful and influential are longitudinal in duration, sequenced, and actively focused on explicit social-emotional skills (Durlak, et al., 2011). Equally important in the assessment of quality social-emotional programs is the presence of ongoing, embedded monitoring to ensure that the program is being implemented with reliability and consistency (Jones, Bouffard, & Weissbourd, 2013).

Social-emotional learning is often touted as the missing component in a well-rounded education for students. Social-emotional learning provides the soft-skills and underpinning by which students learn to make decisions, interact with others, and manage their own thoughts, feelings, and behaviors respectfully (Cohen, 2006). The vastness of social-emotional learning can be defined as "the process through which we learn to recognize and manage emotions, care about others, make good decisions, behave ethically and responsibly,

develop positive relationships, and avoid negative behaviors" (Zins, et al., 2004), and the research resoundingly supports fostering these skills early (McCabe & Altamura, 2011). Focusing on bolstering students' social and emotional learning not only increases overall happiness and social engagement, it has the ability to transform a school's culture (Burroughs & Barkauskas, 2017).

In a 2017 study of school readiness, social-emotional skills were found to be a consistently high-ranked marker of kindergarten readiness as determined by kindergarten teachers (Miller & Goldsmith, 2017). Specifically, this cluster of teachers indicated that, along with high cognitive skills, there was an important emphasis placed on young learners being able to follow directions and cooperate with their peers. These two specified social-emotional skills were, in these teachers' determination, strong markers of school readiness. Thus, this survey study shows the perceptual link between academic readiness and social-emotional skill level as noted by early educators (Miller & Goldsmith, 2017). While this study is not causal in design, it will be interesting to note if teacher perception of school readiness aligns to standardized testing of school readiness.

An international study of Portuguese elementary school children explored the importance of duration of exposure to a social-emotional educational program (Correia & Marques-Pinto, 2016). One intervention sample was exposed to a single year of a social-emotional program, while a comparative intervention sample was exposed to two years of a social-emotional program. A control group was comprised of an age-matched sample that did not have social-emotional educational program exposure (Correia & Marques-Pinto, 2016). The two intervention groups were not statistically different in social-emotional skill competencies from one another, but both groups exceeded the control group in social and

emotional skill development and social and academic adjustment to first grade. This study

used multiple methods and data sources increasing the strength of the results (Correia &

Marques-Pinto, 2016). This study supports the assertion that exposure to social-emotional

educational programming has positive social, emotional, and academic gain for elementary

school students.

Other studies have parceled out subdomains of social-emotional learning, specifically

emotion knowledge and attention. In the early years of development, children learn to label

emotional expressions and learn to identify common situations that tend to elicit those

emotional reactions (Denham, 1998). While this skillset of social-emotional language

improves and develops with experience for all children, early differences can be found

between children in their abilities to label emotions (Denham, 1998). The ability to label and

identify emotions is positively associated with academic and social success in Kindergarten

(Denham, et al., 2012). Based upon these studies, one can assume that improving emotion

knowledge has the potential to subsequently improve academic achievement. In a related

study, a large sample of Kindergarten students in Germany was studied over the course of one

year for developmental trajectories of emotion knowledge and attention span. Kindergarten

teachers assessed children's attention and behavior at the onset and conclusion of the study,

and the children were interviewed at the onset and end of the study to determine emotion

knowledge ability (von Salish, Denham, & Koch, 2016). Children's emotion knowledge at

the beginning of the study year was strongly correlated with attention levels at the end of the

study year. More specifically, the higher a child's emotion knowledge at the beginning of the

study year, the higher the child's attention span at the end of the study year (von Salish,

Denham, & Koch, 2016). This study adds to the need to further examine holistic social-

emotional character education effects on children, as this study shows how emotion knowledge has a strong relationship on one facet of metacognition and thus academic achievement.

Effects on Problem Behavior in Preschool and Kindergarten Students

Estimates of problematic behavior in early childhood reveal that social-emotional challenges occur at a rate of roughly 10 to 20 percent of children between the ages of 2 and 5 years of age (Egger & Angold, 2006; Wichstrom et al., 2012). Children with diagnosed disabilities may have a social-emotional problem behavior prevalence three to seven times higher than normally developing peers (Baker, Blacher, Crnic, & Edelbrock, 2002; Dykens, 2000). Also known is that young children who have social-emotional difficulties that are not resolved have a heightened likelihood for academic, social, and emotional difficulties in later childhood and schooling (Hauser-Cram & Woodman, 2016).

An investigative efficacy trial was conducted on two large samples of preschool-aged children to look specifically at the effectiveness of a specific social-emotional education program on children's social-emotional skills and problem behavior rates (Hemmeter, Snyder, Fox, & Algina, 2016). Children were recruited from public, state-funded preschool programs and included children with diagnosed disabilities in the treatment and control groups. The teachers in the treatment group received professional development training and support in a specific social-emotional character education program while the teachers in the matched control group did not receive such training (Hemmeter, et al., 2016). Children in the treatment group showed higher social-skills and had lower rates of problem behavior as compared to their matched control group. Looking specifically at children with diagnosed disabilities, children in the intervention group showed fewer problem behaviors than children

diagnosed with disabilities in the control group, but the difference was not statistically

significant (Hemmeter, et al., 2016). While a noted difference was not supported statistically

for children with disabilities, this study supports a reduction in problem behavior for normally

developing children who are exposed to social-emotional character education programs as

opposed to children who are not exposed to such programs.

Similar in theoretical approach and finding, White and Warfa (2011) conducted a

detailed case study of the effects of initiation of a character education program on a primary

school in England. The researchers employed a mixed method approach looking at both the

qualitative and quantitative effects of employing a character education in a school, which was

noting high concern of behavioral difficulties in students. Prior to and following intervention,

semi-structured interviews were conducted with all stakeholders: senior management,

teaching and support staff, and a sample of students. Quantitative measures of teacher talk

during various times during the day, student on and off task behavior percentages, and

incidences of disruptive behavior were tabulated, computed, and analyzed pre and post

intervention (White & Warfa, 2011). Following a 6-month study period, vast difference was

seen in stakeholders' perceptual views of behavior at the school with sentiment strongly

positively shifting. Parents, teachers, and administrators reported lower rates of behavioral

misconduct, lower incidences of violent acts, and a stronger sense of community and

connectedness to the school. Sharp decreases in teacher talk, student off-task behavior, and

incidences of student problem behavior were also noted (White & Warfa, 2011). This study

supports the positive effect a whole-school character education program can have on meeting

socio-emotional and cognitive needs of elementary students.

Effects on Problem Behavior in Elementary and Middle School Students

A comparative study examined the rate of classroom problem behavior incidences in schools that had a social-emotional character education program versus those that did not have any character education program (Montonye, Butenhoff, & Krinke, 2013). Students in grades 1 - 5 were observed across 77 different classrooms in 12 different public schools. Systematic direct observations were made tabulating the rates of the following classroom behavior problems: verbal aggression, physical aggression, and disruptions. Schools, which had a character education program, showed statistically significant lower levels of classroom problem behaviors than the schools, which did not have such a program (Montonye et al., 2013). While problem behaviors were higher in large class size, there was still a significant difference noted between control schools and those who had character education programs. This correlation of character education to lower problem behavior was found to significantly interact with the percentage of students on free or reduced lunch, such that the positive relationship was amplified in classrooms in which there existed a greater percentage of students on meal assistance (Montonye, et al., 2013). Consistent with the theory of Vygotsky, this study supported the fact that making a change in these children's social environment did influence behavior and reshape learning.

Michael Beets, et al. (2009) found similarly positive findings on the impact of a social and character education program on upper elementary and early middle school students in an intervention school in Hawaii. A 5-year longitudinal study was conducted to determine the effects of implementing a character education program on substance use, violent behaviors, and sexual activity amongst late elementary and early middle school students. Results strongly substantiated the impact of such a program on decreasing substance use, lowering

sexual activity rates, and decreasing violent behavior incidences amongst those elementary students exposed to the school-wide social and character education program. All of the decreases noted, substance use, sexual activity, and violent behavior, were statistically significant (Beets et al., 2009). Not surprisingly, those students exposed to the program for three or more years had the greatest effect. This supports Vygotsky's assertion of learning from more knowledgeable others, language as a medium for progressing thought, and learning preceding development. This study also aligns with the theory of Kohlberg that children altered their perception of moral right versus wrong based upon teaching and exposure to a targeted social and character education program.

Other studies, such as DeRosier & Mercer (2007), have likewise found positive effects of social-emotional education. These researchers analyzed the effects of a specific story-telling social-emotional education program in four similar elementary schools. Schools were randomly assigned to either control or experimental conditions, and for those schools in the condition group, both the Kindergarten – Grade 2 version and the Grade 3 – Grade 5 version of a specific social-emotional education program were implemented (DeRosier & Mercer, 2007). Teachers in both the intervention and control schools completed a multi-item Likert scale on the social and behavioral functioning of their students' observed behaviors pre-intervention (or control) and post-intervention (or control). Teachers were also asked to complete weekly fidelity checklists to monitor quality adherence to the assigned condition. Statistical analyses found a significant decrease in aggression and a significant increase in prosocial behavior for those students in the Kindergarten – Grade 2 condition compared to the age-matched control group (DeRosier & Mercer, 2007). Similarly, students in the Grade 3 – Grade 5 condition group also showed a decrease in aggression and also showed a decline in

immature-impulsive behavior relative to the age-matched control group (DeRosier & Mercer, 2007). Once again, support is shown for the effects of the social environment on learning and on behavioral meaning making. Additionally, the use of a visual system of teaching character education yielding strong findings supports the theory of Piaget who would define children in this study to be present in either the pre-operational or concrete operational stage of cognitive development. As such, Piaget would assert the need for such levels of support.

A multiple case study analysis explored the effects of the implementation of social-emotional education programs on student misbehavior occurrences and teacher perception of student behavior (Thompson, 2002). Ten distinct students were observed, interviews were conducted with each student's parents, friends, and teachers, and disciplinary records were reviewed. All of the students studied were monitored over the course of a full academic year and attended the same elementary school in a high-poverty demographic community in rural Tennessee. Each of the students selected were targeted due to escalating patterns of disciplinary issue and were assigned teachers who implemented the school social-emotional education program with fidelity (Thompson, 2002). All students showed improvements in problem behavior and reduced rates of disciplinary referrals and actions. Furthermore, each student self-reported higher social-emotional skills and parental perception reflected improved behavior as a result of exposure to the school's social-emotional education program (Thompson, 2002). This study provides qualitative support to the positive effects of social-emotional education on reducing problem behavior in school-aged children and emphasizes the importance of studying observed behavior along with perceptions of others in each child's life. This connects well with the theoretical underpinnings of Lev Vygotsky in the realm of

influence had through social interactions and the need to explore how changes in social experience impacts other realms of development.

An in-depth analysis explored the effects of behavioral patterns of older elementary and middle school students in regards to social-emotional and character development. More pointedly, this study sought to understand the effects of exposing older students to a specific universal social-emotional learning program in their Chicago urban schools (Duncan, Washburn, Lewis, et al., 2017). Unfortunately, all students in this sample showed progressive patterns of increases in misconduct and declines in social-emotional character education connected behaviors. When students exposed to the target social-emotional program were compared to a control group of students in the same geography not exposed to this social-emotional learning program, the intervention group showed significantly improved behavioral trajectories. The students in the intervention group continued to show a trend towards misconduct, but the trajectory was less extreme as compared to the control group (Duncan, Washburn, Lewis, et al., 2017). This supports the finding that formalized social-emotional programming does have an impact of behavioral patterns and rates of behavioral decline. While this study showed an at-risk population continuing to increase in misconduct, exposure to the universal social-emotional and character development program did improve the rate of misconduct increase (Duncan, Washburn, Lewis, et al., 2017).

A similar study was conducted in Finland with a focus on determining if a specific social-emotional character education program would improve social-emotional skills and lessen conduct problems in a large sample of schools with students in Grade 1 thought Grade 9 (Ojala, et al., 2016). Schools in the intervention group went through a substantial development program for several years to implement, modify, and optimize the target

social-emotional character education program. Students in the intervention group were assessed pre-intervention and again after a 6-month exposure period for social-emotional skills and prevalence of conduct problems. When compared to students in the control group not exposed to this target program, results yielded that students exposed to the target program had higher social-emotional skills and lower rate of conduct problems, but none of these effects were statistically significant (Ojala, et al., 2016). Further analyses revealed that the results were significant for students in middle elementary grades only and were further amplified in male students. Discussion within this study attributed the lack of statistical significance to the short intervention period, and the research team assert a longer intervention period may be needed to find the desired results. This study supports a target test period of greater than 6 months to determine efficacy of social-emotional character education programming.

A very similar pattern of findings emerged in a study of urban middle-school students located in Philadelphia, Pennsylvania. Students were randomly assigned to a control or intervention group, with the intervention group being exposed to a five-day character education program aimed at helping students see internal character strengths within themselves (Oppenheimer, Fialkov, & Portnoy, 2014). Instead of taking a deficit approach to social-emotional character education, this study aimed to look at how a positive psychological approach to character education could potentially impact adolescent, at-risk students' overall well-being and consequently academic achievement and decreased rate of problem behavior. The results of this study yielded support for statistically significant increases in adolescent feelings and self-reports of overall well-being after exposure to the strengths-based social emotional character education program. This positive result did not

maintain for longer periods of time, as noted in a single follow-up, but this is attributed to the short exposure period of the social-emotional education program and the lack of sustained practice of the implementation program begun (Oppenheimer, Fialkov, & Portnoy, 2014). Thus, this study supports a positive effect on behavior vicariously through well-being improvement and endorses the need to study social-emotional character education programs across longer time spans.

Effects on Inclusive Populations

In a similar approach, research exists exploring the effects of social-emotional education programs on students with disabilities present in inclusive classrooms (Richardson, et al., 2009). One of the issues that constantly surfaces in inclusion classrooms is that included students often lack the social behaviors to truly assimilate with their peers. The goal of this study was to see if the application of this social-emotional education program would help students with disabilities acquire critical social skills to help them better interact with their peers. Pre-program implementation and post-implementation, three teachers evaluated each student on six different domains: sharing, problem solving/conflict resolution, concept of self and others, communication, socialization, and love/caring. While the sample size was small (25 students), there was a significant effect found across all six domains. Subsequent analysis found the effect size to be large, particularly notable given the small sample. This study is interesting in that it examined non-normative developing children and still found that the change in the environment for these students had a direct impact on social skill learning, emotional skill learning, and communication skills. Social learning preceded development, which is a finding in direct alignment to the theoretical underpinnings of Lev Vygotksy.

Children with visual impairments have also been the focus of studies of social-emotional education programs (Roe, 2008). Because children with visual impairments cannot see other people and read nonverbal visual cues, this population is at a heightened risk for impaired and delayed social and emotional development (Lang, Hintermair, & Sarimski, 2017). A study conducted in Germany evaluated the social and emotional competencies in visually impaired toddlers between the ages of twelve and thirty-six months of age using two distinct social-emotional assessment and evaluations tools (Lang, Hintermair, & Sarimski, 2017). The study confirmed a strong correlation between the extent of visual impairment and the extent of social and emotional developmental delays further supporting the need for social-emotional educational support in all young children inclusive of children with impairments. This study also validated a strong correlation between parental responsiveness and child social-emotional skills, indicating the importance of social-emotional education programs including parental education components and the need to assess parental perception of child social-emotional skill level (Lang, Hintermair, & Sarimski, 2017).

Effects on Academic Achievement

A variety of research studies have consistently found that children's social-emotional knowledge and skill levels are positively associated with academic achievement. For example, in a study of students in first-grade through sixth-grade, the students' ratings of interpersonal skills as it related to interacting with peers was strongly associated with standardized testing scores on the Iowa Test of Basic Skills (ITBS) scores (DiPerna & Elliott, 1999). Similarly, a longitudinal study of elementary and middle-school students found self-rating, peer-rating, and teacher-rating levels of peer interaction skills and empathy in third-

grade was positively correlated with academic achievement in eighth-grade, showing not only immediate academic effects but long-term carryover effects (Caprara, et al., 2000).

Some studies have purposefully looked at the impact of social-emotional education programs on academic achievement, which connects strongly with the cognitive theories of Jean Piaget and Lev Vygotsky. A three-year randomized control trial looked at the systemic impacts of a social-emotional education approach with second through fifth grade students (Rimm-Kaufman & Hulleman, 2015). Students exposed to a formalized social-emotional education program showed significant gains in reading and mathematics as compared to age-matched peers who did not experience such program. The association between exposure to a social-emotional education program and academic achievement was most notable in initially low-achieving students who showed the greatest gains in mathematics achievement as compared to those students not exposed to a social-emotional education program (Rimm-Kaufman & Hulleman, 2015). This study pronouncedly substantiates the cognitive effects of social-emotional education.

A meta-analysis of over 200 elementary, middle, and high schools utilizing social-emotional character education programs showed strong support for the effects of social-emotional character education on academic achievement (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Those students exposed to social-emotional character education programs showed notable differences in lower rates of negative behavior compared to those students not exposed to social-emotional character education programs. Over and above this, students exposed to social-emotional character education showed an 11-percentile-point gain in achievement (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Results from this meta-analysis add to a growing body of research showing how social-

emotional character education programming enhances students' connection to school and consequently yields higher academic achievement (Zins et al., 2004).

A recent investigation with elementary-aged students in a large, multi-site study based in Chicago, Illinois adds to the literature on the connections between social-emotional skill attainment and academic achievement (Caprara, et al., 2000; Romano, Babchishin, Pagani, & Kohen, 2010). Keeping with prior research that has found positive relationships between social-emotional skill and academic results, this study sought to explore factors that mediate or moderate this relationship (McKown, et al., 2015). Social-emotional understanding and reading achievement were mediated by the prevalence of social-emotional behaviors. Interestingly, social-emotional understanding was negatively associated with classroom misbehavior, but classroom misbehavior was not statistically significant in relation to mathematical and reading achievement (McKown, et al., 2015). This study thus demonstrates a complex relationship between social-emotional skill and academic achievement, which adds to the depth of the literature. Ultimately, this study supports the relationship between the two variables in elementary students, but it also calls for continued study into the connections between social-emotional skills and academic achievement in similar samples and broader populations (McKown, et al., 2015).

A study by Martin and Martin (2007) looked at the subsequent realms of development impacted from the inception of a social-emotional education program. Exploring the effects of a new social-emotional education program on urban elementary students, not only did students show decreased levels of problem behaviors, but students concurrently showed higher student achievement on standardized end of grade testing. This study adds to the body of research, which shows positive effects of social-emotional education on decreasing

negative behaviors, and adds uniquely in the demonstration of positive academic effects. In doing so, this study provides compelling evidence to support the theory of Lev Vygotsky in that there is evidence of social learning growth, shown in the decrease of negative behaviors, and there is a demonstrated impact of such social learning growth on other domains of development, shown in higher academic achievement. These exact findings were mirrored on a much larger scale in a large sample, matched-pair cluster-randomized study (Snyder, et al., 2010). Included in this study were over 500 subjects from 20 diverse elementary schools studied over a 2-year period. The findings indicate decrease problem behaviors, lower rates of absenteeism, and higher academic achievement scores from those students exposed to a social-emotional education program relative to their peers who did not experience a social-emotional education. This again supports the multiple developmental domain effect of social learning and supports that learning precedes development.

A meta-analysis evaluated the impact and academic achievement effects of formalized character education or social-emotional programs on a large sample of elementary schools in the state of California (Benninga, Berkowitz, Kuehn, & Smith, 2003). Six hundred and eighty-one elementary schools applying for recognitions of distinction were evaluated across a series of variables, including end-of-year academic testing, implementation of character education and/or social-emotional programs, and a California Department of Education created formula called the Academic Performance Index, which closely examines the academic achievement of minority groups and overall academic achievement in specific areas of interest (Benninga, Berkowitz, Kuehn, & Smith, 2003). The study was retrospective, allowing for analyses across multiple years of impact. Schools utilizing a formalized character education or social-emotional program that scored higher on character education

implementation also had higher academic achievement scores on the end-of-year academic testing and on the California Department of Education Academic Performance Index (Benninga, Berkowitz, Kuehn, & Smith, 2003). This effect was found to be statistically significant for the year prior to study, the target academic year, and was found to maintain statistical significance for two full academic years beyond the target study year. This study not only yielded strong results of the strong positive relationship between social-emotional program implementation and high academic achievement, but this study adds to the research in its demonstration of the lasting effects of such relationships into subsequent academic years (Benninga, Berkowitz, Kuehn, & Smith, 2003).

Effects of Character Education and Social-Emotional Programs for Preschool Children

What is known about character education and social-emotional program effects on younger populations of students? In short, there is little available. A 2013 research study by Nix, Bierman, Domitrovich, and Gill examined the effects of a newer Head Start program on Kindergarten readiness and achievement. While the goal of the study was on Head Start efficacy, an interesting finding emerged (Nix, Bierman, Domitrovich, & Gill, 2013). Gains made in preschool social-emotional skills had a strong positive relationship to gains in reading achievement and engagement in Kindergarten. This study was comprised of primarily low-income, minority students, which warrants further investigation of a broader sample. This study provides strong implication for cross-domain effects yielded from increasing social-emotional skills in preschool (Nix, Bierman, Domitrovich, & Gill, 2013).

While it is critical to have social-emotional education programs in school, these programs also need to begin at the earliest levels of education to instill prosocial values in students. The extant research is scattered with support for social-emotional education

programs that are linked to a reduction in problem behaviors, lower rates of substance abuse, and growth in academic achievement (e.g. Beets, Flay, et al., 2009; Brannon, 2008; DeRosier & Mercer, 2007). While there is not extensive work available on the effects of social-emotional education on social-emotional learning and academic achievement in preschool aged children, there is strong evidence available from elementary and secondary students to postulate and assume such an effect.

An international study examined the effects of formalized social-emotional teaching on a group of preschool and Kindergarten aged students in Italy. Two groups of students were assigned to experimental or control conditions, with the experimental group receiving direct instruction in social-emotional skills (Di Maggio, Zappulla, Pace, & Izard, 2016). At the conclusion of the study, those students in the experimental condition showed significant growth in emotion knowledge, emotional vocabulary, and emotion regulation as compared to the control group. This study supports the theory of Lev Vygotsky and the importance of direct teaching from more knowledgeable others to instil growth and also provides evidence that social-emotional growth can be taught through formalized preschool programming (Di Maggio, Zappulla, Pace, & Izard, 2016).

Other studies have looked at associations of social-emotional skills in preschool children to other dependent variables. One such study examined the effects of children's interest level, social–emotional skills, and early mathematical skills (Doctoroff, Fisher, Burrows, & Edman, 2016). Citing extant research on the effects of strong social-emotional core competencies, this research team sought to determine if the relationship between attention, focus, emotion regulation, and social engagement skills would hold a similarly patterned positive relationship with mathematical engagement and achievement as seen in

elementary school students (Dobbs et. al, 2006; Doctoroff, Fisher, Burrows, & Edman, 2016). As predicted from prior research, a positive relationship was found between social-emotional skills and mathematics achievement and engagement. One caveat of this study was that nearly the entire sample was found to have average social-emotional skills, and the majority of the sample had average to above-average mathematical skills, so the study was skewed by the sample from which it was derived, highly resourced private preschools (Doctoroff, Fisher, Burrows, & Edman, 2016). This positive relationship is still relevant and is particularly relevant to the proposed research, which is also proposed to pull from a similar population of students.

Effects of Character Education and Social-Emotional Programs for Preschool Children Living in Poverty

Another international study examined the effects of formalized social-emotional programming in a high-poverty sample of pre-schoolers in Croatia (Mihic, Novak, Basic, & Nix, 2016). Preschool education became part of the formalized education system in Croatia beginning in 1997, and this study sought to investigate the efficacy of preschool education in Croatia and more specifically to assess changes in children's social and emotional competencies over a year of formalized social-emotional teaching. Controlling for classroom and teacher effects, this study showed significant increases in prosocial behavior, emotion regulation, and peer interactions with significant decreases in conduct problems and impulsive behaviors (Mihic, Novak, Basic, & Nix, 2016). The effect sizes were notable. This study elucidates how swiftly social and emotional competencies can be increased in the early learning years, which aligns strongly with the theoretical underpinnings of Lev Vygotsky and Lawrence Kohlberg.

Other studies have followed a similar methodology and sought to study the link between social–emotional competencies and academic success long-term. Rhoades, Warren, Domitrovich, and Greenberg examined the link between preschool social–emotional competence and first grade academic achievement in an economically disadvantaged sample of public preschool students across a 3-year time span (Rhoades, Warren, Domitrovich, & Greenberg, 2011). This team determined that preschool emotion knowledge, a critical social-emotional skill, was a strong positive predictor of subsequent academic achievement. This relationship was still significant after controlling for demographic factors and attention, adding to the research findings that social-emotional skills do have long-term, cross-domain effects in underprivileged, low-income students,

In a similar low-income demographic population, another research team found comparable results regarding the relationship between social-emotional skills and academic achievement (Tan & Dobbs-Oates, 2012). Low-income populations of preschool students are a common study group as this is a group highly targeted by public policy. Furthermore, there is existing research to show that preschool-aged children from low-income families or communities are more likely to have social-emotional difficulties than children from more affluent families or communities (Fantuzzo, Bulotsky, McDermott, Mosca, & Lutz, 2003). Children of low socioeconomic backgrounds also show a higher prevalence of literacy difficulties (Lonigan et al., 1999). Given this, Tan & Dobbs-Oates (2012) sought to determine the relationship between social-emotional skills and literacy achievement in a low-income population of preschool children. As expected, the higher a child's social-emotional skills the higher the child's literacy achievement, thus showing a strong positive correlation between the two variables (Tan & Dobbs-Oates, 2012).

Some studies have sought to determine the role childcare providers play in fostering and development young children's social-emotional development and skill competencies. Young children in formalized childcare can be at a higher risk for social-emotional difficulties if the childcare attended does not proactively address social and emotional skill development (Belsky, et al., 2007). Preschool children who attend low-quality childcare are at a higher risk for negative social and emotional outcomes and for lower reading, language, and math achievement compared to those children attending high-quality childcare (Burchinal, Vandergrift, Pianta, & Mashburn, 2010). Thirty-eight teachers were studied across twenty-one urban, low-quality childcare classrooms serving children between the ages of 3 and 5 years of age (Steed & Roach, 2017). This sample of teachers in these state-subsidized childcare classrooms were found to show highly inconsistent practices of encouraging and fostering social-emotional skills, infrequent use of social intervention to foster friendship skills, and no systems to prevent problem behavior (Steed & Roach, 2017). This finding adds strong support to the need for social-emotional formalized instruction and insight into why this population of preschool students tend to show lagging academic achievement compared to their matched peers in high-quality childcare (Burchinal, Vandergrift, Pianta, & Mashburn, 2010; Steed & Roach, 2017).

Low-income populations dominate the early childhood research on social-emotional learning, but social-emotional learning and its effects are important to study for all children. The pervasive study of low-income children makes an assumption that this demographic group has a greater need for support in social-emotional skill development. One study sought to determine if the Spanish version of Second Step- Early Learning, a social-emotional curriculum, had different impacts for two disparate study sample sites, a private school and a

publicly funded preschool program. The two settings represented sharply different student populations with the private school students primarily being comprised of wealthy families and the publicly funded school primarily being comprised of economically disadvantaged families (Clinton, Edstrom, Mildon, & Davila, 2015). This study found that both socioeconomic groups of preschool students showed significant gains in social-emotional knowledge and skill through exposure to the same social-emotional character education program (Clinton, Edstrom, Mildon, & Davila, 2015). Notably, however, the high-income demographic group showed a significantly greater gain than the low-income comparison sample, likely representing differences in background and conceptual knowledge (Clinton, Edstrom, Mildon, & Davila, 2015). This study validates the need for social-emotional learning support for all young learners, and it shows the impact of this particular social-emotional program on improving social-emotional skill development. More broadly, this study provides valuable support for the need to study social-emotional learning effects in broader samples, as the effects found were disparate across the two socioeconomic groups of children studied. Furthermore, this study demonstrates the notable gains that were made in both groups of students, regardless of socioeconomic status, showing the need and ability to augment and amplify social-emotional learning skills for all young learners.

Internationally, social-emotional character education implications have been explored in such countries as Taiwan. In the Taiwanese educational system, social-emotional character education is integrated into primary and secondary school curricula as a means of encouraging children to connect with civic duties and to bolster moral values (Lee, 2016). Developed and enacted by the federal government of Taiwan, the *Character Education Promotion Plan* is aimed at improving students' moral code values, specifically "caring, respect, courage,

honesty, responsibility, and cooperation" (Taiwan Ministry of Education, 2004, p. 2). Given this push in schools, some preschool programs in Taiwan have sought to determine effective means to instill these same desired moral code values in younger students. Over a period of four months, preschool students in Taiwan in a small sample were exposed to various songs about the desired moral behaviors, and teachers were interviewed regarding changes seen in student behaviors in their classrooms (Lee, 2016). All participants found that exposure to a musical-program centered around improving caring, respect, honesty, courage, responsibility, and cooperation did positively influence the behaviors of the children in their classrooms (Lee, 2016). While this study is limited in scope and lacks a control comparative group, this adds to the growing body of research indicating the need to further study social-emotional character education in young learners.

Summary

The extant research on the effects of social-emotional character education programs on elementary school students is positive and multi-faceted. There is extensive research to show that the implementation of social-emotional character education programs reduces problem behavior and increases learning engagement (Egger & Angold, 2006; Wichstrom et al., 2012; Baker, Blacher, Crnic, & Edelbrock, 2002; Dykens, 2000; Hauser-Cram & Woodman, 2016; Hemmeter, Snyder, Fox, & Algina, 2016; Montonye, Butenhoff, & Krinke, 2013; Beets, et al., 2009; DeRosier & Mercer, 2007; Duncan, Washburn, Lewis, et al., 2017; Ojala, et al., 2016). Support exists to validate an extended effect on students beyond social-emotional development with many studies showing an academic effect as well (DiPerna & Elliott, 1999; Caprara, et al., 2000; Rimm-Kaufman & Hulleman, 2015; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; McKown, et al., 2015; Martin & Martin, 2007; Snyder, et al.,

2010). Some studies have made a clear distinction between character education and social-emotional education, yet the results are similar regardless of how the independently variable is being defined (Greenberg et al., 2006; 2010; Durlak, et al., 2011; Jones, Bouffard, & Weissbourd, 2013; Cohen, 2006; Zins, et al., 2004; McCabe and Altamura, 2011; Burroughs & Barkauskas, 2017; Miller & Goldsmith, 2017; Correia & Marques-Pinto, 2016; Denham, 1998; Denham, et al., 2012; von Salish, Denham, & Koch, 2016). Little research exists on the effects of social-emotional character education programs on preschool aged children. What does exist is primarily focused upon low-income students in publicly funded preschool programs (Nix, Bierman, Domitrovich, & Gill, 2013; Mihic, Novak, Basic, & Nix, 2016; Rhoades, Warren, Domitrovich, & Greenberg, 2011; Tan & Dobbs-Oates, 2012; Belsky, et al., 2007; Burchinal, Vandergrift, Pianta, & Mashburn, 2010; Steed & Roach, 2017; Clinton, Edstrom, Mildon, & Davila, 2015). Despite the limited sampling of preschool-aged children, there is strong empirical and theoretical evidence to show that social-emotional learning and the effects of such teachings need to be studied across demographic groups to maximize social-emotional learning for all young learners.

CHAPTER 3: METHODS

Overview

This study was an investigative comparison of how formalized social-emotional education programs impact academic achievement in a population of four- and five-year old preschool students. Academic achievement was measured by evaluating standardized testing scores at the conclusion of Pre-Kindergarten across four domains: early literacy achievement, early mathematics achievement, quantitative reasoning, and verbal reasoning. The sample of students studied all attended matched preschools from the same company using the same proprietary curriculum all taught by degreed teachers only vary in exposure or lack of exposure to a formalized social-emotional education program designed for Pre-Kindergarten aged students. Students not exposed to the Second Step-Early Learning program only had natural classroom play interactions in obtaining social and emotional skills. Students exposed to the Second Step-Early Learning program had the same natural classroom play interactions plus an additional approximately 30-minute lesson and extension activity to build social-emotional skills each day.

Design

For this study, a distinct research design was utilized, a quasi-experimental static-group comparison research design. Random assignment within classroom was impossible to achieve, which required the use of this design (Gall, Gall, & Borg, 2013). The use of quasi-experimental static group comparison was necessary with the standardized testing score analysis, as no prior standardized testing data will exist for this population (Gall, Gall, & Borg, 2013). Analyses will seek to examine differences in the two comparison groups.

Research Questions

RQ1: How does a formalized social-emotional education program influence academic achievement in early literacy on standardized testing in Pre-Kindergarten students as compared to Pre-Kindergarten students not exposed to such a program?

RQ2: How does a formalized social-emotional education program influence academic achievement in mathematics on standardized testing in Pre-Kindergarten students as compared to Pre-Kindergarten students not exposed to such a program?

Hypotheses

$H_0 1$: There is no statistically significant difference between verbal reasoning standardized testing scores of Pre-Kindergarten students who experience a formalized social-emotional education program compared to those Pre-Kindergarten students not exposed to such a program as shown by the Admission Assessment for Beginning Learners percentile score.

$H_0 2$: There is no statistically significant difference between quantitative reasoning standardized testing scores of Pre-Kindergarten students who experience a formalized social-emotional education program compared to those Pre-Kindergarten students not exposed to such a program as shown by the Admission Assessment for Beginning Learners percentile score.

$H_0 3$: There is no statistically significant difference between early literacy achievement standardized testing scores of Pre-Kindergarten students who experience a formalized social-emotional education program compared to those Pre-Kindergarten students not exposed to such a program as shown by the Admission Assessment for Beginning Learners percentile score.

H₀4: There is no statistically significant difference between mathematics achievement standardized testing scores of Pre-Kindergarten students who experience a formalized social-emotional education program compared to those Pre-Kindergarten students not exposed to such a program as shown by the Admission Assessment for Beginning Learners percentile score**.**

Participants and Settings

The participants for this study were drawn from three Pre-Kindergarten programs from three private schools all owned and operated by the same private school company. The three schools are located in upper-middle class, professional suburbs located in similar communities. These three private schools were each located near professional parks and primarily provided childcare services to dual-income, highly educated families as validated by annual parental surveys given in each school. Each selected school used an identical, standards-based academic curriculum in their Pre-Kindergarten program, had a highly similar Pre-Kindergarten physical classroom design, had equally degreed Pre-Kindergarten teachers, and were identical in the classroom's teacher: student ratio. One of the three schools utilized a formalized social-emotional education program called Second Step-Early Learning as an embedded daily curriculum support. The other two schools did not have a formalized social-emotional education program.

There were a total of 63 participants in this study, with 41 being in the control group and 22 in the treatment, which closely matches the minimum number of participants required for a medium effect size. According to Gall et al. (2007), "66 students is the required minimum for a medium effect size with statistical power of .7 at the .05 alpha level." The participants in this study all range in age from 4 years 4 months to 5 years 7 months of age,

with an average age of 5 years and 2 months. The population consist of 36 females and 27

males. The participants will include all Pre-Kindergarten classes at each respective school

location who had attended the school for the full Pre-Kindergarten year and who completed

the end-of-year standardized testing. All participants included spoke English as a primary

language, and no students included were on academic modification plans. Racial and

socioeconomic demographic data were not available for this exact study population. The

overwhelming majority of families in each of these respective schools are dual-income as

verified by demographic summaries provided by each of the respective school locations. The

majority of families in each school location reported that at least one parent holds a Master's

degree or higher as validated by annual parental surveys administered by each school.

Instrumentation

One standardized comprehensive instrument was utilized to measure Pre-Kindergarten

student academic achievement. The standardized test applied was that AABL (Admission

Assessment for Beginning Learners) of Educational Records Bureau. The AABL is a

research-driven assessment tool specifically designed to test verbal reasoning, quantitative

reasoning, early literacy achievement, and mathematics skill achievement in children between

the ages of four and six (ERB, 2014). The verbal reasoning and quantitative reasoning

components of this test measure higher-level thinking skills and the ability to extrapolate

unknown information based upon prior knowledge. The early literacy achievement and

mathematics achievement components measure a child's retention and application of

explicitly taught content. More specifically, verbal reasoning measures the ability to

determine relationships between concepts, compare and classify information, and draw

inferences. Quantitative reasoning measures the ability to extend knowledge of addition and

subtraction, determine patterns, and make inferences to solve problems (ERB, 2014). Early

literacy achievement measures the ability to identify and blend sounds, rhyming, phonics, and

word or sentence reading. Mathematics achievement measures the ability to recognize and

name numerals, count, name shapes, and identify basic measurement tools (ERB, 2014).

Delivered via an iPad, the interactive, bright graphics and touch-screen multiple choice

formatting of the test allow for an intuitive, developmentally appropriate experience. The test

is divided into four distinct sections: verbal reasoning, quantitative reasoning, early literacy,

and early mathematics, and each section has 18 questions. The test is untimed (ERB, 2014).

This assessment tool generates robust reporting on each student including raw scores, scaled

scores, percentiles, and stanines and has an $\alpha = 0.98$ (ERB, 2014). The percentile scores

generated are derived from and compared to a comparison population of children who applied

for admissions to elite private schools in New York City, thus creating an elevated

comparison group. While this is an elevated comparison norm group, the data yielded still

provide an objective metric for comparison.

Procedures

This study first obtained approval from the Liberty University Internal Review Board

for Human Sciences (IRB). While the data is archival, it was necessary to secure IRB

approval before proceeding with any research analyses.

Archival standardized student testing data was then accessed at each of the three

school locations included in this study. Test scores were coded with a student number already

generated within the school's student records system. No identifying information was left on

the data set with the exception of gender and age in months at the time of testing. Archival

standardized student testing data was evaluated specifically for percentile scores on Verbal

Reasoning, Quantitative Reasoning, Early Literacy Achievement, and Mathematics

Achievement.

Data Analysis

$H_0$1: There is no statistically significant difference between Verbal Reasoning

standardized testing scores of Pre-Kindergarten students who experience a formalized social-

emotional education program compared to those Pre-Kindergarten students not exposed to

such a program.

$H_0$2: There is no statistically significant difference between Quantitative Reasoning

standardized testing scores of Pre-Kindergarten students who experience a formalized social-

emotional education program compared to those Pre-Kindergarten students not exposed to

such a program.

$H_0$3: There is no statistically significant difference between Early Literacy

achievement standardized testing scores of Pre-Kindergarten students who experience a

formalized social-emotional education program compared to those Pre-Kindergarten students

not exposed to such a program.

$H_0$4: There is no statistically significant difference between Mathematics achievement

standardized testing scores of Pre-Kindergarten students who experience a formalized social-

emotional education program compared to those Pre-Kindergarten students not exposed to

such a program.

These hypotheses were each tested using an independent samples T-test. This

measure was most appropriate given the desire to ascertain differences between two groups.

The two groups are unrelated, there is a categorical independent variable, and a continuous

dependent variable (Warner, 2013). F-tests were also run to satisfy the equal variance

assumption inherent in a T-test.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this study was to carefully evaluate the academic achievement effects for Pre-Kindergarten students exposed to a formalized social-emotional education program. A retrospective look examined how a sample of Pre-Kindergarten students exposed to a standardized curriculum and daily implementation of *Second Step-Early Learning* social-emotional curriculum differed from a comparative sample of Pre-Kindergarten students exposed to the same standardized curriculum but not exposed to the additional social-emotional curriculum in the 2015-16 academic year. The group studied consisted of 22 Pre-Kindergarten students in the social-emotional education treatment group and 41 Pre-Kindergarten students in the control group from very similar upper-middle class suburban communities. Data analyses examined the differences in standardized end-of-year achievement testing between the two samples in the domains of early literacy achievement, mathematics achievement, verbal reasoning, and quantitative reasoning. This chapter outlines the results of those analyses.

Research Questions

RQ1: How does a formalized social-emotional education program influence academic achievement in early literacy on standardized testing in Pre-Kindergarten students as compared to Pre-Kindergarten students not exposed to such a program?

RQ2: How does a formalized social-emotional education program influence academic achievement in mathematics on standardized testing in Pre-Kindergarten students as compared to Pre-Kindergarten students not exposed to such a program?

Null Hypotheses

H₀1: There is no statistically significant difference between Verbal Reasoning standardized testing scores of Pre-Kindergarten students who experience a formalized social-emotional education program compared to those Pre-Kindergarten students not exposed to such a program as shown by percentile scores on this domain of the Admission Assessment for Beginning Learners test.

H₀2: There is no statistically significant difference between Quantitative Reasoning standardized testing scores of Pre-Kindergarten students who experience a formalized social-emotional education program compared to those Pre-Kindergarten students not exposed to such a program as shown by percentile scores on this domain of the Admission Assessment for Beginning Learners test.

H₀3: There is no statistically significant difference between Early Literacy achievement standardized testing scores of Pre-Kindergarten students who experience a formalized social-emotional education program compared to those Pre-Kindergarten students not exposed to such a program as shown by percentile scores on this domain of the Admission Assessment for Beginning Learners test.

H₀4: There is no statistically significant difference between Mathematics achievement standardized testing scores of Pre-Kindergarten students who experience a formalized social-emotional education program compared to those Pre-Kindergarten students not exposed to such a program as shown by percentile scores on this domain of the Admission Assessment for Beginning Learners test.

Descriptive Statistics

The central research question explored whether there was an academic achievement effect for Pre-Kindergarten students exposed to formalized social-emotional education compared to Pre-Kindergarten peers in a nearly identical environment not exposed to formalized social-emotional education. To examine the dependent variable, archived student achievement data on the AABL (Admission Assessment for Beginning Learners) of Educational Records Bureau. This assessment tool is research-driven and is specifically designed to test verbal reasoning, quantitative reasoning, early literacy achievement, and mathematics skill achievement in children between the ages of four and six (ERB, 2014). During the 2015-16 academic year, students in all of the studied schools administered the AABL test to all students exiting Pre-Kindergarten.

The study sample consisted of a total of 63 students, 22 in the study group who had treatment to the formalized social-emotional education program and 41 in the control group not exposed to the formalized social-emotional education program. See Table 1 for descriptive statistics of the study sample gender distribution. See Table 2 for descriptive statistics of the study sample age distribution.

Table 1

Descriptive Statistics of Study Sample – Gender

		Control Group ($n= 41$)	Treatment Group ($n= 22$)
Gender	male	31% ($n= 16$)	50% ($n= 11$)
	female	69% ($n= 25$)	50% ($n= 11$)

Table 2

Descriptive Statistics of Study Sample – Age

	Mean	Standard Deviation	Median
Control Group	61.88 months	3.59	62.7 months
Treatment Group	62.68 months	3.48	62.5 months

All students in both conditions were administered the AABL (Admission Assessment for Beginning Learners) of Educational Records Bureau. This assessment tool provides percentile scores on verbal reasoning, quantitative reasoning, early literacy achievement, and mathematics skill achievement in children between the ages of four and six (ERB, 2014). The percentile scores generated are derived from and compared to a comparison population of children who applied for admissions to elite private schools in New York City, thus creating an elevated comparison group. The percentile scores of this study are mapped on to that comparison group. See Table 3 for percentile score descriptive data on the control and treatment groups.

Table 3

Descriptive Statistics of Study Sample – Percentile Test Scores

	Mean	Standard Deviation
Control Group		
Verbal Reasoning	45.07	24.04
Quant. Reasoning	46.61	23.87
Early Literacy	58.00	24.99
Mathematics	49.17	22.65

Treatment Group		
Verbal Reasoning	70.59	24.95
Quant. Reasoning	61.86	29.88
Early Literacy	67.27	22.60
Mathematics	61.55	23.27

Results

The central question of this study sought to explore the academic achievement effects of treatment to formalized social-emotional education on Pre-Kindergarten students. The null hypothesis states no statistically significant difference between standardized testing scores of Pre-Kindergarten students who experience a formalized social-emotional education program compared to those Pre-Kindergarten students not exposed to such a program as shown by the Admission Assessment for Beginning Learners testing scores**.** This hypothesis was tested using an independent samples T-test. This measure was most appropriate given the desire to ascertain differences between two groups. The two groups are unrelated, there is a categorical independent variable, and a continuous dependent variable (Warner, 2013). F-tests were run to satisfy the equal variance assumption inherent in a t-test.

Assumption Test

Levene's Test of Homogeneity of Variance was employed and confirmed that the variances in AABL test scores for the control group and social-emotional education treatment group were statistically equivalent on all four testing domains. A significance level larger than .05 indicates that equal variance can be assumed. See Table 4 for specific values.

Table 4

Levene's Test of Homogeneity of Variance – Dependent Variables

	F	df	Significance
Verbal Reasoning	0.400	61	0.529
Quantitative Reasoning	3.059	61	0.085
Early Literacy Achievement	0.236	61	0.629
Mathematics Achievement	0.108	61	0.744

Quantitative Statistics

Independent samples T-tests were run to determine if differences existed between the testing scores of the control group compared to the treatment group. This measure was most appropriate given the desire to ascertain differences between two groups. The two groups are unrelated, there is a categorical independent variable, and a continuous dependent variable (Warner, 2013).

$H_0$1: There is no statistically significant difference between Verbal Reasoning standardized testing scores of Pre-Kindergarten students who experience a formalized social-emotional education program compared to those Pre-Kindergarten students not exposed to such a program as shown by percentile scores on this domain of the Admission Assessment for Beginning Learners test**.**

To assess if differences existed between test scores, a series of t-tests were run. An independent-samples t-test was conducted to compare Verbal Reasoning scores on the AABL test between the control group and the social-emotional education treatment group. There was a significant difference in the Verbal Reasoning scores for the control group (*M*= 45.073,

SD= 24.038) and the social-emotional education treatment group (*M*= 70.591, *SD*= 24.945)

conditions; *t*(61)= -3.965, *p* < 0.001 (see Table 5). These results indicate that the social-

emotional education treatment group had AABL Verbal Reasoning scores with statistical

significance higher than the control group (see Figure 1). The effect size for this analysis (*d* =

1.04) was found to exceed Cohen's (1988) convention for a large effect (*d* = .80).

Table 5

Means, Standard Deviations, and t-tests (Verbal Reasoning percentile scores)

Group	n	M	SD	t	p<
Control Group	22	45.073	24.038		
				-3.965	.001
Treatment Group	41	70.591	24.945		

H₀2: There is no statistically significant difference between Quantitative Reasoning

standardized testing scores of Pre-Kindergarten students who experience a formalized social-

emotional education program compared to those Pre-Kindergarten students not exposed to

such a program as shown by percentile scores on this domain of the Admission Assessment

for Beginning Learners test**.**

An independent-samples t-test was conducted to compare Quantitative Reasoning

scores on the AABL test between the control group and the social-emotional education

treatment group. There was a significant difference in the Quantitative Reasoning scores for

the control group (*M*= 46.610, *SD*= 23.867) and the social-emotional education treatment

group (*M*= 61.864, *SD*= 29.876) conditions; *t*(61)= -2.212, *p* = 0.031 (see Table 6). These

results indicate that the social-emotional education treatment group had AABL Quantitative

Reasoning scores that were statistically significantly higher than the control group (see Figure

1). The effect size for this analysis ($d = 0.59$) was found to exceed Cohen's (1988)

convention for a medium effect ($d = .50$).

Table 6

Means, Standard Deviations, and t-tests (Quantitative Reasoning percentile scores)

Group	n	M	SD	t	p
Control Group	22	46.610	23.867		
				-2.212	.031
Treatment Group	41	61.864	29.876		

H₀3: There is no statistically significant difference between Early Literacy

achievement standardized testing scores of Pre-Kindergarten students who experience a

formalized social-emotional education program compared to those Pre-Kindergarten students

not exposed to such a program as shown by percentile scores on this domain of the Admission

Assessment for Beginning Learners test**.**

An independent-samples t-test was conducted to compare Early Literacy Achievement

scores on the AABL test between the control group and the social-emotional education

treatment group. There was not a significant difference in the Early Literacy Achievement

scores for the control group (*M*= 58.00, *SD*= 24.991) and the social-emotional education

treatment group (*M*= 67.273, *SD*= 22.660) conditions; $t(61)= -1.45$, $p = 0.152$ (see Table 7).

These results indicate that the social-emotional education treatment group and the control

group did not have scores that significantly differed (see Figure 1). The effect size for this

analysis ($d = 0.38$) was found to fall within Cohen's (1988) convention for a small to medium effect ($d = .20 - .40$). This indicates that a larger sample size may have yielded a different result or stronger result than the current sample size.

Table 7

Means, Standard Deviations, and t-tests (Early Literacy percentile scores)

Group	n	M	SD	t	p
Control Group	22	58.000	24.991		
				-1.450	.152(*n.s.*)
Treatment Group	41	67.273	22.660		

H₀4: There is no statistically significant difference between Mathematics achievement standardized testing scores of Pre-Kindergarten students who experience a formalized social-emotional education program compared to those Pre-Kindergarten students not exposed to such a program as shown by percentile scores on this domain of the Admission Assessment for Beginning Learners test.

An independent-samples t-test was conducted to compare Mathematics Achievement scores on the AABL test between the control group and the social-emotional education treatment group. There was a significant difference in the Mathematics Achievement scores for the control group (*M*= 49.171, *SD*= 22.647) and the social-emotional education treatment group (*M*= 61.545, *SD*= 23.274) conditions; *t*(61)= -2.048, *p* = 0.045 (see Table 8). These results indicate that the social-emotional education treatment group had AABL Quantitative Reasoning scores that were statistically significantly higher than the control group (see Figure
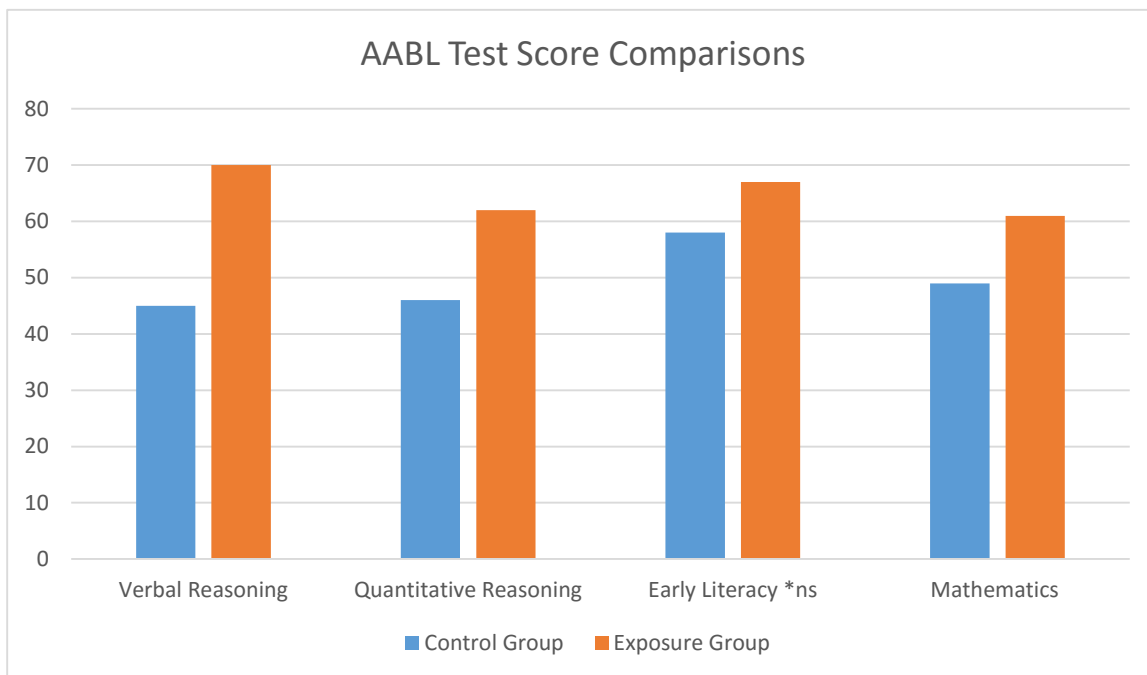
1).   The effect size for this analysis ($d = 0.54$) was found to exceed Cohen's (1988)

convention for a medium effect ($d = .50$).

Table 8

Means, Standard Deviations, and t-tests (Mathematics achievement percentile scores)

Group	n	M	SD	t	p
Control Group	22	49.171	22.647		
				-2.048	.045
Treatment Group	41	61.545	23.274		

Figure 1. AABL Test Score Comparisons

not significant

CHAPTER FIVE: CONCLUSIONS

Overview

This chapter begins with a discussion of the findings of the study. Implications for this study are presented and analyzed, followed by limitations and recommendations for future studies. The findings align to previous research done with older students and at-risk populations of preschool children but also add new, additional data to the existing body of knowledge on the implications and effects of social-emotional education.

Discussion

This study was designed to explore the academic achievement effects of social-emotional education on Pre-Kindergarten students. The study population selected was unique within the existing body of research as it contained students in private preschool programs in upper to middle-class socioeconomic status groups. Furthermore, this study allowed preschool student achievement data to be compared across two samples of students in matched community types who were both exposed to a standardized preschool curriculum. The presence or absence of a formalized social-emotional education program was the independent variable of study within this closely matched sample.

Academic Achievement Effects

The academic achievement effect of social-emotional education was examined across four specific domains present on the standardized testing tool applied. The findings of this study provided positive support for the impact of social-emotional education on Pre-Kindergarten student academic achievement specifically in the domains of Verbal Reasoning, Quantitative Reasoning, and Mathematics achievement. The domain of Early Literacy was

not significantly different across control and treatment group; although the treatment group had a mean that was 9 percentile points higher, it just missed statistical significance.

The results of this study fit well within the theoretical framework from which it was derived. The foundational work of Jean Piaget is affirmed in this study, as Piaget asserted that changes in cognition would result as children matured through stages and had alterations in social thinking (Lin, Enright, & Klatt, 2011). While this study did look at children across different stages of cognition, as defined by Piaget, changes in cognition did result from exposure to a program designed to create changes in social knowledge. More pointedly, theoretical assertions from Lev Vygotsky were supported as social learning preceded changes in cognitive development (Santrock, 2010). The exposure group had academic teaching derived from a standardized curriculum coupled with daily teaching, modeling, and guided practice on changes in social interaction and social behavior. This was combined with the usage of embedded emotional and social interaction vocabulary. When compared to a matched sample with the same academic teaching derived from a standardized curriculum yet devoid of the structured social-emotional education program, the exposure group significantly outperformed the control group in three of four domains on a standardized reasoning and achievement test. Therefore, a conclusion can be drawn, supported by the fundamental work of Lev Vygotsky, that changes in the exposure group's social learning preceded changes in the group's verbal and cognitive learning at an elevated rate compared to a matched control group.

Social-emotional education, by definition, includes the processes to improve life-skill functioning. PATHS, a well-known social-emotional education program in elementary school programs has repeatedly been shown to yield improved social functioning, emotion

regulation, and cognitive gains (Greenberg, et al., 2006). Specifically, verbal fluency score increases have been seen, which supports the finding of this study in which students exposed to a social-emotional education program had significantly higher verbal reasoning scores (Greenberg, et al., 2010).

The students in the intervention group of this study showed significantly higher academic testing scores in higher-order thinking, as measured by verbal reasoning and quantitative reasoning as compared to the control group. This study supports a connection between improved social functioning, emotion regulation, and cognitive gains (Greenberg, et al., 2006). This support is amplified by the consistent findings of this relationship in the higher-order thinking measures, which reflect the ability to extrapolate unknown information based upon prior knowledge.

Other studies have likewise found strong academic achievement results correlated with perception of social-emotional skill level or exposure to social-emotional education programs for elementary school aged students. Elementary school and middle school students perceived by their teachers to be more socially and emotionally skilled were also found to have higher standardized testing scores, and this elevated academic achievement result had carryover effects well into subsequent grades (DiPerna & Elliott, 1999; Caprara et al., 2000). Numerous studies have found systemic academic achievement increases on standardized testing following exposure to social-emotional education programs at the elementary, middle, and high school levels in both reading and mathematics domains (Capara, et al., 2000; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Romano, Babchishin, Pagini, & Kohen, 2010; McKown, et al., 2015; Zins, et al., 2004). Middle-elementary aged students were examined in a randomized control trial looking at the academic achievement effects of

exposure to social-emotional education programs with results showing significant differences between the two groups. Those exposed to social-emotional education programs had higher reading and mathematics achievement standardized test scores compared to their matched sample, but this result was most prevalent in mathematics (Rimm-Kaufman & Hulleman, 2015). This finding closely matches the current study with a significantly younger population of students.

Within the body of research on social-emotional education effects on preschool children, the bulk of the research has centered around measuring direct social and emotional growth and Kindergarten readiness indicators (Beets, Flay, et al., 2009; Brannon, 2008; DeRosier & Mercer, 2007; Nix, Bierman, Domitrovich, & Gill, 2013). Social-emotional education programs have been shown to increase children's vocabulary and also subsequent literacy achievement (Tan & Dobbs-Oates, 2012; Some studies saw positive effects of social-emotional education on mathematical achievement specifically as an outcome measure, which coincides well with this study (Doctoroff, Fisher, Burrows, & Edman, 2016). The target population of such studies on preschool children has, however, frequently been low-income or international populations limiting the generalizability into the current study.

The students in the intervention group of this study showed significantly higher academic achievement testing scores in mathematics achievement compared to the control group. The students in the intervention group also had an average percentile score 9 points higher than the control group in literacy achievement, but this finding failed to reach statistical significance. This study offers further support for a connection between increased social-emotional skill level and cognitive gains (Greenberg, et al., 2006). The significant findings of higher mathematics scores from the intervention group relative to the control

group fit well within the existing body of research of social-emotional programs on academic achievement in K12 students (Rimm-Kaufman & Hulleman, 2015). The failure to reach statistical significance in literacy scores from the intervention group relative to the control group may have more to do with the sample size or the core academic curriculum both groups were exposed to, as will be discussed further.

Study Population

One study within the body of social-emotional literature provided unique support for the approach taken in the present research model. In Guatemala, two samples of students were studied over the course of a school year as both groups were exposed to the Spanish version of Second Step-Early Learning (Clinton, Edstrom, Mildon, & Davila, 2015). One sample group came from a private more affluent preschool while the other sample group came from a publicly funded school of economically disadvantaged students. Both groups, however, received exposure to the same social-emotional education program. At the conclusion of the study period, both groups showed significant gains in social-emotional knowledge and social skills. It was the higher-income population though that showed the greater gain as compared to the matched sample (Clinton, Edstrom, Mildon, & Davila, 2015). This study provided support for the need to examine preschool populations of students from varying socio-economic backgrounds and not just low-income population students as primarily permeate the research. The present study uses the English version of Second Step-Early Learning and took influence from the Guatemalan study to seek out a study group of students from higher socioeconomic communities, with a focus on academic achievement outcomes.

Implications

This study adds a distinct and meaningful contribution to the body of literature around social-emotional learning. By looking at a lesser-studied population of students not deemed at risk, this study gives unique insight into the effects of social-emotional education across a broader population spectrum. This study sought to explore the academic effects of social-emotional learning, which is not a lens frequently taken in the extant literature and is not a lens typically able to be examined in students at such a young age. This research indicates a strong academic achievement implication for Pre-Kindergarten students exposed to a formalized social-emotional education program compared to a matched sample not exposed to such a program. By using two schools with identical curriculum, stronger implications are able to be drawn from this study. From a theoretical perspective, this study yielded results very much in-keeping with what would be expected; children who gain social and emotional skills and language show repercussive effects in other domains of development. What is distinctive, however, are how cleanly this result was able to be shown even when drawn from a relatively small sample.

This study explored academic achievement across four domains. Quantitative Reasoning and Verbal Reasoning are both higher-order thinking measures designed to measure a child's ability to extrapolate and extend his knowledge in complex ways. Mathematics Achievement and Early Literacy Achievement are both traditional measures of how well a child has retained and comprehended explicitly taught content (ERB, 2014). This study showed strong positive results with children exposed to a formalized social-emotional education program significantly exceeding their peers on both higher-order thinking measures, Quantitative Reasoning and Verbal Reasoning. On the achievement measures, this

study showed strong positive results with children exposed to a formalized social-emotional education program significantly exceeding their peers on the Mathematics Achievement measure. On the measure of Early Literacy Achievement, the treatment group had a mean that was 9 percentile points higher than the control group, but it just missed statistical significance.

Limitations

While the study yielded significant results, it is critically important to consider possible threats to internal and external validity. The two samples selected are not from the same school or the same community posing a potential threat to internal validity by selection. This study examines outcome measures without the existence of a pretest, so there is a possibility that discrepancies existed in the two samples prior to treatment or control conditions. A second possible threat to internal validity would be instrumentation. The standardized test utilized, the AABL (Admission Assessment for Beginning Learners) of Educational Records Bureau, is administered via an iPad limiting this threat, but there may have been variances in the fidelity of implementation of the academic curriculum of which both groups were assumed to have equal exposure.

This study poses little external validity risk. The target population for this study were Pre-Kindergarten students in upper middle-class suburban communities attending private preschool. While this may not generalize to all Pre-Kindergarten students, as possible population validity issue, it would generalize to like comparison groups and addresses a gap population that is not typically studied. Ecological validity is not a risk in this study as the study itself requires attendance in a Pre-Kindergarten program, and the outcome measure

utilized likewise is specifically designed for students at the conclusion of a Pre-Kindergarten program.

One additional limitation worth mentioning is the standardized academic curriculum both groups were exposed to. While this variable was consistent and standardized in both the intervention and control groups, this academic curriculum places a large instructional emphasis on early literacy skills. It is possible that the intervention group did not reach statistical significance on higher early literacy achievement relative to the control group due to the equal emphasis placed on literacy achievement in both conditions. This is a point of note worth exploring in broader samples.

Recommendations for Future Research

It is recommended that future research build and extend from the current study in the following ways:

1. This study model should be replicated with a pre-test to eliminate the potential selection internal risk to validity. Change scores can then be examined as the dependent variable better showing the impact of social-emotional education on academic achievement growth.
2. This study model should be replicated with the addition of teacher assessments of academic learning to obtain a broader profile of academic achievement.
3. This study model should be replicated with the inclusion of a measure of social-emotional skills to verify the target efficacy of the selected treatment.

4. This study model should be replicated with the addition of longitudinal follow-up analyses to determine the duration of the academic achievement effects of social-emotional education.

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APPENDIX

IRB Approval Letter

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

August 17, 2017

Lauren Starnes
IRB Application 2950: Effects of Social-Emotional Education on Pre-Kindergarten Students' Academic Achievement

Dear Lauren Starnes,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study does not classify as human subjects research. This means you may begin your research with the data safeguarding methods mentioned in your IRB application.

Your study does not classify as human subjects research because it will not involve the collection of identifiable, private information.

Please note that this decision only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued non-human subjects research status. You may report these changes by submitting a new application to the IRB and referencing the above IRB Application number.

If you have any questions about this determination or need assistance in identifying whether possible changes to your protocol would change your application's status, please email us at irb@liberty.edu.

Sincerely,

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
The Graduate School

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