A PREDICTIVE CORRELATION AND CAUSAL-COMPARATIVE STUDY ON EARLY CHILDHOOD SOCIAL-EMOTIONAL SCORES, SOCIOECONOMIC STATUS, AND ACADEMIC ACHIEVEMENT

by

Denise Ann Ashley

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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ABSTRACT

This quantitative predictive correlational and causal-comparative study aimed to explore the relationship between early childhood social-emotional scores, SES, and academic achievement in elementary school students located in the western Midlands of South Carolina. The predictive correlational study aimed to determine if early childhood social-emotional scores could predict academic achievement in elementary students and explore the strength of those variables on academic achievement. The causal-comparative research design attempted to explore whether there was a difference in academic achievement for those who have PIP and those who do not. Utilizing data from the Ages & Stages Questionnaires: Social-Emotional, Second Edition (ASQ:SE-2), 70 parents of fourth-grade students who completed the MAP assessments for their third-grade year of the 2022-2023 school year were surveyed. Using bivariate linear regression, the researcher tested the predictive value of the predictor variable, ASQ:SE-2 scores, to the criterion variable, academic achievement. The results indicated statistical significance for ASQ:SE-2 scores to predict academic achievement. Using a Mann-Whitney U test, the researcher tested if there was a difference between the MAP reading scores for students with PIP and those without. The results of this study suggested that social-emotional scores significantly predicted academic achievement as well as suggested that there is a statistically significant median difference in MAP scores between those who receive PIP and those who do not for elementary students in the western Midlands of South Carolina. Future research should focus on pre-kindergarten social-emotional screeners to determine best practices for SEL interventions as well as the predictive correlation between SES on early childhood social-emotional scores.

Keywords: early childhood deficits, emotional intelligence, academic achievement, social-emotional competence and learning, social-emotional deficits, socioeconomic status

Dedication

This manuscript is dedicated to God Almighty, who gave me the strength, knowledge, and perseverance to complete this dissertation. I also like to dedicate this manuscript to my husband, Ryan, and my five children. I simply could not have done this without your love and support.

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I am forever grateful for the many teachers and professors who have molded and shaped me into the academic that I have become.

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List of Abbreviations

Attention Deficit Hyperactive Disorder (ADHD)

Collaborative for Academic, Social, and Emotional Learning (CASEL)

Developmentally Appropriate Practices (DAP)

Early Childhood Education and Care (ECEC)

Emotional Intelligence (EI)

Every Student Succeeds Act (ESSA)

Evidence-Based Practices (EBPs)

Individuals with Disabilities Education Act (IDEA)

Individual Education Plan (IEP)

Measures of Academic Progress (MAP)

Multi-Tiered Systems of Support (MTSS)

National Association of the Education of Young Children (NAEYC)

No Child Left Behind Act (NCLB)

Northwest Evaluation Association (NWEA)

Oppositional Defiance Disorder (ODD)

Positive Behavior Interventions and Supports (PBIS)

Pupils in Poverty (PIP)

Recognizing, Understanding, Labeling, Expressing, a Regulating skills (RULER)

Social, emotional, and behavioral issues (SEBs)

Social-emotional competence (SEC)

Social-emotional learning (SEL)

Socioeconomic status (SES)

CHAPTER ONE: INTRODUCTION

Overview

The purpose of this quantitative predictive correlational and causal-comparative study aimed to explore the relationship between early childhood social-emotional scores, SES, and academic achievement in elementary school students. A theoretical framework is outlined based on Piaget's (1952) theory of development and Vygotsky's (1978) social cognitive theory. The problem statement and the purpose of this study are also provided, followed by an explanation of the significance of the current study. Finally, the research question is introduced, and definitions of key terms are provided.

Background

Research studies have shown that social-emotional competence (SEC) is a pivotal contributor to a student's academic achievement (CASEL, 2023; Mahoney et al., 2021; Murano et al., 2020; Pooch et al., 2019). Despite this understanding, Mahoney et al. (2021) argue that all social-emotional learning (SEL) is not the same, and effective implementation of SEL requires a program that allows for learning to be sequenced, active, focused, and explicit (SAFE). Although many school-wide programs align with the SAFE method, a targeted approach to early intervention has not been thoroughly evaluated (Mahoney et al., 2021; Murano et al., 2020). The developmental years are a critical learning time for children, yet not all children have the same experiences as others, which could lead to social-emotional delays or deficits (Pooch et al., 2019). These deficits may result in low academic performance during a child's learning journey, and a better understanding of this relationship should be explored (Murano et al., 2020).

Similarly, the research strongly suggests that children with low socioeconomic status (SES) are at a higher risk for low academic achievement in the classroom due to a lack of SEC

often found with students from low SES environments (Armstrong-Carter et al., 2021; F. Zhang et al., 2020). Many factors influence a child's developmental learning, yet studies show that low SES is a significant factor in which multiple adverse effects impact a child's ability to learn and achieve (Armstrong-Carter et al., 2021; Ming et al., 2021). Despite knowledge of the impact low SES has on a child's learning, exploring the relationship between low SES and social-emotional deficits could provide clarity on intervention practices in order better to support parents during their child's developmental years (Lechner et al., 2021; Lurie et al., 2021; F. Zhang et al., 2020).

Historical Overview

Academic achievement is a goal of educators to ensure students are mastering the state standards as well as meeting expectations on end-of-year state assessments (Quílez-Robres et al., 2021). Students are not only expected to maintain a level of intelligence but also be able to adapt and perform to be successful (Yüksel et al., 2019). Understanding how young children best learn has progressed over time, and the emergence of the National Association for the Education of Young Children (NAEYC, 2023) in the 1980s birthed the term Developmentally Appropriate Practice (DAP), a guideline for early childhood education. A link between emotions, learning, and academic achievement began to be the focus of research to understand better how to improve academic achievement through better awareness of SEL in schools (Ahmed et al., 2020). Salovey and Mayer (1990) began discussing the idea of emotional intelligence (EI), which eventually led to a developed theory. EI emerged as a new term evaluated concerning academic achievement (Gettinger et al., 2021; Kulkarni & Sullivan, 2022).

Further development and discussion led to the curriculum framework of RULER, in which Recognizing, Understanding, Labeling, Expressing, and Regulating skills were determined to help build EI within the school community (Yale Center for Emotional

Intelligence, 2021). Regardless of this new understanding of EI, a school-wide systematic approach did not exist. The Collaborative for Academic, Social, and Emotional Learning (CASEL, 2023) was birthed in 1994 and developed the five core competencies that make up the framework for school-wide SEL intervention. A meta-analysis by Durlak et al. (2011) was a significant catalyst for proving that a school-wide SEL intervention program was a key component to increased academic achievement and improved student behavior. Another meta-analysis by Taylor et al. (2017) further justified this argument, supporting the positive impact of school-wide SEL intervention programs. Numerous programs were created to improve school-wide SEL intervention initiatives (Collie, 2020; Green et al., 2020; Low et al., 2019; McClelland et al., 2017; Wright & Steed, 2021).

Research conducted by Thompson and Stanković-Ramirez (2021) further emphasized how family and cultural experiences uniquely impact children as well as impact learning which takes place both at home and at school. Despite knowledge of Developmentally Appropriate Practice (DAP), many schools follow a developmentally inappropriate learning system for early learners (Lillard, 2021; NAEYC, 2023). Students with developmental delays or social-emotional deficits often become behavioral issues in the classroom and are not provided with necessary resources until upper elementary far after critical developmental years (Daunic et al., 2021; Kulkarni & Sullivan, 2022). Unfortunately, not all children are given the same opportunities, and there are a variety of levels of support that are heavily dependent on a child's SES impacting academic achievement (Lechner et al., 2021; Li et al., 2022). SES has also been explored as a factor affecting academic achievement (Kulkarni & Sullivan, 2022; F. Zhang et al., 2020). A child's low SES can negatively impact how children learn as they are exposed to different experiences than children who do not grow up in a low SES environment (Ming et al., 2021).

Focusing on specific executive functions children develop during the early years has highlighted the possible long-term implications of low SES environments on academic achievement (Lurie et al., 2021; Waters et al., 2021). Similarly, children exposed to environmental and emotional issues brought on by low SES could impact a child's social-emotional development (Guhn et al., 2020; Heberle & Carter, 2020; Pooch et al., 2019).

SEL became a solution to developmental deficits and progress in social-emotional competencies, promoting a unified understanding of social-emotional needs in young children (CASEL, 2023). Although EI and SEL were gaining ground, educator training on social-emotional needs was only required once the Jason Flatt Act was passed in 2007 (The Jason Foundation, 2023). Despite becoming the first legislation requiring educator training regarding social-emotional issues, only 21 states have adopted this legislation. Even with this adoption, a clear understanding of how to best implement SEL interventions that are sustainable and have a lasting impact is still a debated issue (Ferreira et al., 2020). Nevertheless, helping educators, parents, and community members understand the effects of SEC is critical to assisting students to gain better insight into how emotions affect academics (Sprenger, 2020). The most effective way to implement SEL interventions within the classroom still needs to be determined. Despite the support for school-wide intervention programs, further research questions whether a targeted approach to SEL intervention is more beneficial (Mahoney et al., 2021; Murano et al., 2020). Understanding how a child's SES relates to their social-emotional development in correlation to academic performance has yet to be fully explored.

Society at Large

The link between emotions and academic achievement has been supported in research study after research study (CASEL, 2023). Social-emotional development is critical to learning

and mental health (Young Children, 2021). Policymakers for education and experts in education need to understand the adverse effects a lack of SEL interventions in schools can have on academic achievement (Green et al., 2020; Low et al., 2019). Furthermore, studies have shown that teachers recognize that many social-emotional issues impact a student's ability to learn in their classrooms and desire to see an increase in SEL implementation in schools (Hamilton & Doss, 2020). Many SEL interventions focus on a school-wide approach, with research conducted heavily on middle school students and outcomes (Ferreira et al., 2020; Green et al., 2020). Nevertheless, SEC in early childhood education can help give students a better chance at success in their academic journey (Pooch et al., 2019; Quílez-Robres et al., 2021; Yüksel et al., 2019). More emphasis is needed on early childhood SEL as children with appropriate development in SEC as they enter preschool are more likely to achieve academically throughout their educational journey (Gettinger et al., 2021; Murano et al., 2020).

Theoretical Background

The theory of development by Piaget (1952) suggests that intelligence in children grows in four stages and that children can only move to the next stage of development once they have mastered the preceding step. Age ranges were added to Piaget's original theory to provide a framework for each stage (Schunk, 2020). Milestones, or developmental stages, are currently used to determine potential developmental delays, and understanding these stages will be helpful when analyzing social-emotional scores related to academic achievement (Pooch et al., 2019; Wright & Steed, 2021). A focus on young learners and the creation of DAP guidelines helped put Piaget's theory into practice; however, further research questions current practices and the impact these have on social development when methods fall outside of what is developmentally appropriate (Ahmed et al., 2020; Ljubetic et al., 2020; NAEYC, 2023; Sincovich et al., 2020).

Furthermore, social cognitive theory and the zone of proximal development by Vygotsky (1978) will be critical in understanding a child's social experiences' impact on their learning and social-emotional scores. Social constructivism focuses heavily on social experiences and opportunities for self-learning (S. Smith, 2020) and can help connect concepts developed by the Collaborative for Academic, Social, and Emotional Learning (CASEL, 2023). Studies have shown that environmental factors significantly affect social-emotional development (Guhn et al., 2020; Heberle & Carter, 2020; Pooch et al., 2019). Exposure to challenging ecological factors and experiences within those environments shapes a young child's emotional competence (Lurie et al., 2021; Ming et al., 2021; Waters et al., 2021). Connecting Vygotsky's social cognitive theory with Piaget's theory of development will better understand the relationship between emotional development in children and early childhood learning (Colliver & Veraksa, 2021).

Problem Statement

Research shows a positive correlation between SEL and academic achievement, with many factors being the focus of studies to understand better this connection (CASEL, 2023; Murano et al., 2020; Pooch et al., 2019). Focus on the teacher's role in SEL, the sustainability of current SEL interventions, and the connection SEL has on a child's behavior have all supported the need for a school-wide approach to SEL intervention implementation (Ferreira et al., 2020; Gettinger et al., 2021; Low et al., 2019; C. Yang et al., 2018). Research also shows that other factors of development and early childhood adversity may cause students to be more at risk for social-emotional deficits early on, including a child's SES and necessary supports needed during early childhood development (Guhn et al., 2020; Y. Yang et al., 2019; F. Zhang et al., 2020; Y. Zhang et al., 2019). As children are raised in various social environments depending on SES, studies have been conducted to determine the risk factors associated with low SES and their

impact on a child's social-emotional well-being (Harwell et al., 2017; Liu et al., 2020; Ming et al., 2021). Focusing on these risk factors could be significant to understanding social-emotional scores and the implications of a more targeted approach to intervention (Murano et al., 2020).

Although there is a better understanding of student SEC and the impact this has on learning, academic achievement remains a focus of research (Daunic et al., 2021). Similarly, despite the connection between SEL and academic achievement, few studies focus on preschool-age children where early childhood development and learning are critical (Murano et al., 2020). Currently, SEL is the focal intervention posed as a solution to behavioral and emotional issues and academic achievement rather than looking at those issues as the problem (Daunic et al., 2021; Murano et al., 2020; Wright & Steed, 2021). Social-emotional deficits could be the reason for both issues impacting a child's academic success (Murano et al., 2020; Pooch et al., 2019). The problem is that the relationship between a child's SES environment and early childhood social-emotional deficits has yet to be thoroughly researched in correlation to academic achievement in elementary students.

Purpose Statement

The purpose of this quantitative predictive correlational and causal-comparative research study is to determine if there is a significant predictive relationship between early childhood social-emotional scores and academic achievement. This study will also explore whether there is a difference in MAP reading scores for those that have a PIP indicator and those that do not. The predictor variable is social-emotional scores which are collected from the Ages & Stages Questionnaires: Social-Emotional, Second Edition (ASQ: SE-2; Squires et al., 2015), with the criterion variable being academic achievement determined by MAP assessment data. Early childhood social-emotional scores determine deficits defined as pre-school-age children who do

not exhibit appropriate social-emotional competence following developmental stages from birth to age six (Squires et al., 2015). SES is determined by the Pupil in Poverty (PIP) indicator according to the South Carolina Department of Education (https://ed.sc.gov), whereas academic achievement is defined as students who score in the below-average to low-average range on the fall Measures of Academic Progress (MAP) assessment (https://www.nwea.org). The population of this study consisted of third-grade students enrolled in a Title One school district in the southeastern United States. The participants in this study included parents whose third-grade students completed the fall MAP English language arts (ELA) assessment.

Significance of the Study

Despite the availability of SEL interventions, low academic achievement is still a factor plaguing schools and leaving educators wondering what should be done to solve the problem (Gettinger et al., 2021). The present study focuses on early childhood social-emotional scores that implicate social-emotional deficits as the catalyst to low academic achievement to explore the relationship between the two variables (Murano et al., 2020; Wright & Steed, 2021). Likewise, exploring the relationship between early childhood social-emotional scores and a child's SES could foster a better understanding of a targeted intervention approach for low academic achievers based on the significance of the relationship between the two variables (Armstrong-Carter et al., 2021; Lechner et al., 2021).

There is no denying that SEL impacts student educational outcomes, whether behavior or academic achievement (CASEL, 2023). The meta-analysis studies conducted by Durlak et al. (2011) followed by Taylor et al. (2017) addressed the issues of SEC and provided clear evidence that there is a positive relationship between SEL and student academic achievement. Further development of this relationship has been the focal point of numerous studies (Clarke et al.,

2021). The framework created by CASEL (2023) has provided schools with numerous SEL intervention programs to choose from (Collie, 2020; Green et al., 2020; Low et al., 2019; McClelland et al., 2017; Wright & Steed, 2021).

Numerous variables have been the focus of research studies in an attempt to solve the problem of low academic achievement, with behavior being at the top of the list linking social-emotional deficits to poor behavior in the classroom (Armstrong-Carter et al., 2021; Li et al., 2022; Y. Yang et al., 2019). Unfortunately, the proposed interventions in those studies misguide educators to implement interventions that only focus on behavioral issues rather than focusing on other variables (Heberle & Carter, 2020; Kulkarni & Sullivan, 2022). Further research showed that a targeted approach to SEL may be more impactful than a school-wide approach (Murano et al., 2020; Pooch et al., 2019; Wright & Steed, 2021). Exploring the relationship between early childhood social-emotional scores and academic achievement and SES's relationship with those scores may shed some light on a better approach to SEL intervention for early elementary-age students (Clarke et al., 2021; Murano et al., 2020).

Research Question

RQ1: How accurately can academic achievement be predicted by early childhood social-emotional scores for elementary students?

RQ2: Is there a statistically significant median difference in MAP scores between PIP students and non-PIP students for elementary students?

Definitions

1. *Academic achievement* - The national average RIT score on the Measures of Academic Progress (MAP) assessments for Language Arts during the fall defines academic achievement. (https://www.nwea.org).

2. *Early childhood deficits*- Early childhood deficits are the lack of development of appropriate skills in pre-school age children, including self-regulation, knowledge of emotion, social problem-solving, and social-emotional competence (Murano et al., 2020).
3. *Emotional Intelligence (EI)* - Emotional intelligence is the mental ability to regulate emotions and feelings to guide thinking and actions (Salovey & Mayer, 1990).
4. *Social-emotional competence (SEC)* - Social-emotional competence is developing knowledge regarding emotions, such as self-regulation, social problem-solving skills, and social-emotional behavior (Murano et al., 2020).
5. *Social-emotional deficits* - Social-emotional deficits are the developmental delays or absence of skills such as compliance, self-regulation, adaptive functioning, interaction with others, communication, and independence (Pooch et al., 2019).
6. *Social-emotional learning (SEL)* - Social-emotional learning is developing healthy emotions to form positive identities maintain relationships, and make considerate decisions (CASEL, 2023).
7. *Socioeconomic status (SES)* - socioeconomic status is defined as the Pupil in Poverty (PIP) indicator determined by the South Carolina Department of Education. (https://ed.sc.gov).

CHAPTER TWO: LITERATURE REVIEW

Overview

A systematic literature review explores the correlation between social-emotional competency deficits and low academic achievement as well as the differences between SEC and academic achievement outcomes. The framework for this study is Piaget's (1952) stages of development theory and Vygotsky's (1978) social cognitive theory are explored and discussed in the first section, followed by a review of recent literature on key constructs related to the topic. Next, the literature on developmental delays, social-emotional deficits, SES, and academic failure is discussed. Finally, a summary of the chapter is included.

Theoretical Framework

Due to the nature of early childhood learners, this study looks at the developmental stages of young children and social skills that should be acquired at different age levels. When looking at SEC deficits, it is imperative to understand both the theory of Piaget (1952) and Vygotsky (1978) to recognize SEL needs. Therefore, both approaches provide a framework for comprehending the early learner as it applies to academic achievement.

Theory of Cognitive Development

Piaget (1952) theorized that children progress through four stages as they mature, in which cognitive development grows. The theory of development suggests that children's intelligence increases as children move from one stage to the next. Piaget's theory concludes that each stage of development is fixed, and one can only move to the next stage once the precluding stage is mastered (Schunk, 2020). The first stage, as outlined by Piaget, is the sensorimotor stage which is developed from birth through 24 months. During this period, the goal is for children to understand that objects are present even though they may be hidden. The second stage is

preoperational, with developments between ages two and seven. During this point, children begin processing information symbolically, in which they can interpret the world through imagery. The third stage is concrete operational, developed from age seven to age 11, and children begin processing information from a logical standpoint. Finally, the fourth formal operational stage occurs between adolescents and adulthood. The ability to think with scientific reasoning develops during this stage. Age ranges were not included in Piaget's original theory but have developed throughout the literature as others interpret the theory of development to give a framework for each stage (Schunk, 2020).

Although some theorists, like Vygotsky, have called to question Piaget's theory of development, Piaget's theory is necessary for understanding how children develop and learn as they age. His model paved the way for the consideration that children think differently than adults and is foundational in helping to determine that children should grow and develop by a certain age (NAEYC, 2023). Pediatricians and psychologists use similar phases on charts to determine specific milestones to ensure a child develops without delays (American Academy of Pediatrics, 2023). Piaget believed that children learn naturally through each stage as they are exposed to different social environments, and his theory helped to define specific age ranges that assist educators in determining what is developmentally appropriate for learning (Alharbi, 2022; Schunk, 2020). It is this foundation that birthed the idea of developmentally appropriate practice (DAP) for early childhood education with a greater understanding that Piaget’s age clusters guide the notion that young learners may not be able to learn beyond what they are developmentally capable of handling (NAEYC, 2023; Thompson & Stanković-Ramirez, 2021). One key idea that has developed from this is the concept of play in young learners. During the preoperational stage, intelligence is reflected by a child’s performance shown through play, and

it is not until the concrete operational stage that children are academically ready to learn (Alharbi, 2022; Schunk, 2020). Further studies have questioned the high-stakes testing measures conducted for young learners, and the impact play has on cognitive development (Lillard, 2021; Ljubetic et al., 2020; Sincovich et al., 2020). Understanding Piaget's theory can help educators learn what level a student is functioning in the classroom, offering information on that child's learning needs (Collie, 2020; Murano et al., 2020; Schunk, 2020). When a child falls outside the normal developmental ranges outlined by Piaget, those deficits impact a child's ability to learn and give educators a framework for providing appropriate instructional interventions to offset those deficits (Murano et al., 2020; Saracho, 2023).

Social Cognitive Theory

Vygotsky (1978) was a social constructivist who believed one should allow social learning opportunities through questioning, exploration, and discovery to learn from oneself (S. Smith, 2020). Unlike Piaget, Vygotsky believed children learn through their social environment and experiences with others. An essential concept of Vygotsky's theory is the zone of proximal development (ZPD). Vygotsky (S. Smith, 2020) defined ZPD as the gap between one's ability to learn independently versus when one needs adult assistance to learn new material. A child's background knowledge and material acquired from previous learning are applied during guided instructions to move the child to an independent state of problem-solving and learning (S. Smith, 2020). A child's exposure to various learning opportunities can affect their background knowledge creating deficits in learning that are exposed in behavior as children interact with other children (Justicia-Arráez et al., 2021). Understanding the social impact of various experiences on children, especially in the early stages of development, will be important in

understanding the social and emotional elements that the Collaborative for Academic, Social, and Emotional Learning (CASEL, 2023) proposes necessary for social and emotional learning.

The works of Vygotsky are pivotal in understanding social-emotional competencies (SEC) and learning, as this theory helps further the notion that the academic environment is vital to learning (Bjorklund, 2022; Cade et al., 2022). His theory supports the link between emotions and intellect, helping to understand that a child's emotional state influences their learning ability (Kewalramani et al., 2022; Smagorinsky, 2021). It also furthers the knowledge that the social environment, which can be impacted by socioeconomic status, allows for various learning opportunities that encourage early childhood development (Heberle & Carter, 2020; Schoon et al., 2021). The role of parents has shown to be increasingly significant as well since the home is the first learning environment children are exposed to (Kewalramani et al., 2022; Schneider et al., 2022). Proper development as children grow is critical to SEC development, in which children learn much of their social behaviors from their parents (Schneider et al., 2022; Smith et al., 2023). Without the proper social environment and opportunities for cognitive development, SEC advancement is limited for young learners impacting overall academic achievement (Ming et al., 2021; Schneider et al., 2022).

Related Literature

Supporting students in their educational journey toward academic achievement has been a goal of educators, with many research studies focusing on various aspects that impact a student's success (Quílez-Robres et al., 2021). In 1994, CASEL (2023) determined that academic achievement is linked to one's social-emotional competence and the term SEL was birthed. Seeking to understand this connection further, research studies began focusing on SEL and its impact in the classroom and schools (CASEL, 2023). The foundational studies of Durlak et al.

(2011) and Taylor et al. (2017) created an idea that school-wide SEL programs were the foundation for increased academic achievement. Various SEL programs emerged and began being evaluated for effects, such as Second Step (Low et al., 2019), Speaking to the Potential, Ability, and Resilience Inside Every Kid or SPARK (Green et al., 2020), the Social and Emotional Competence School Model (Collie, 2020), and the Pyramid Model (Wright & Steed, 2021) each adding to the notion that school-wide interventions were not only appropriate but effective. However, research conducted by Mahoney et al. (2021) argues that a systematic approach to SEL is required which goes beyond the school level and evokes policy changes at the state level, trickling down to the district and school level to include an SEL approach that involves the classroom, schools, families, and communities. Although a study by Murano et al. (2020) focused on school-wide SEL programs, the researchers also focused on targeted intervention programs for at-risk students, an idea supported in several studies (Kim et al., 2022; Nemiro et al., 2022; Yap et al., 2022). The literature showed higher gains for at-risk students when provided a targeted SEL approach than those receiving school-wide interventions (Murano et al., 2020; Pooch et al., 2019; Wright & Steed, 2021). The literature states that a targeted approach is more beneficial than a school-wide approach; however, the research focuses on behavioral outcomes and a child's well-being without making connections to academic achievement (Kim et al., 2022; Murano et al., 2020; Nemiro et al., 2022; Yap et al., 2022).

With development and learning beginning at a young age, further focus and emphasis are needed on early childhood SEL interventions (Murano et al., 2020; Pooch et al., 2019). Much of the literature focuses on middle school programs and does not focus on the foundational years of the early learning journey. Housman (2017) argues that 90 percent of a child's brain is developed in the first three years before students enter the public education system. Students who do not

come from homes that provide stable environments could be at risk for deficits in social-emotional competencies (SEC) as they enter preschool and kindergarten programs (Schneider et al., 2022; Schoon et al., 2021; Smith et al., 2023). The literature suggests that a child's academic success is highly dependent on SEC (CASEL, 2023; Pooch et al., 2019) and needs further research to understand the impact of those deficits on one's learning journey during the elementary years.

Early Childhood Development

Throughout the literature, the common understanding is that children can learn and adapt to any human culture (Bjorklund, 2022; Cade et al., 2022). How children develop and grow is an essential aspect of the literature to understand social cognitive development and the impact this has on later learning (Bjorklund, 2022; Cade et al., 2022; Clerc-Georgy & Martin, 2021; Colliver & Veraksa, 2021; Mathis et al., 2022). Children are born with an innate curiosity for learning which is then shaped by others regarding expectations and social norms (Bjorklund, 2022; Russell et al., 2022). In the early years of development, children are more egocentric and cannot cognitively comprehend another person’s perspective or point of view (Bjorklund, 2022; Cade et al., 2022). Egocentricity in young children can make social-emotional tasks difficult as these skills or competencies are learned through various social environments and interactions (Bjorklund, 2022; Jukes et al., 2021). These competencies are not innate but learned through different societal or cultural experiences (Bjorklund, 2022; Cade et al., 2022; Jukes et al., 2021). Behavioral plasticity, the ability to change, is a necessary part of early childhood development to ensure success later in life and dramatically impacts a child’s learning ability (Bjorklund, 2022; Hendricks & Fuchs, 2020). When a child is determined not to be learning at the same rate as their same-age peers, a determination is made regarding a learning disability (Bjorklund, 2022;

Hendricks & Fuchs, 2020). Since plasticity decreases with age, the developmental years of early childhood are a critical time of learning (Bjorklund, 2022; Cade et al., 2022; Russell et al., 2022; Schoon et al., 2021).

As children develop, social interactions and shared attention become more critical (Bjorklund, 2022; Mathis et al., 2022). Around nine or ten months of age, children can focus their attention from one object or person to two things or people at the same time, known as shared attention which is a concept that builds on modeling and imitating parents or others for children to learn social behaviors (Bjorklund, 2022; Mathis et al., 2022). This attention then moves from the parents to the caregiver or teacher, where learning happens through instruction as modifications are made by that caregiver or teacher to achieve a required behavior or outcome from the child, increasing a child's understanding as the child either learns the new concept or does not (Bjorklund, 2022; Mathis et al., 2022). Around age three, children begin to over-imitate behaviors from others, which is beneficial for learning social norms (Bjorklund, 2022; Mathis et al., 2022; Schoon et al., 2021). Learning develops as young children acquire knowledge from another person and can internalize that expertise for their understanding and mastery, a level of education suggested as the most sophisticated theory of the mind about social learning (Bjorklund, 2022).

Understanding how children develop and learn is essential when looking at early childhood social-emotional deficits and how lack of development can impact academic achievement (Bjorklund, 2022; Mahoney et al., 2021; Murano et al., 2020). A continued theme throughout the literature regarding early childhood development is the idea of exploration and play being a characteristic of learning in the early years (Allee-Herndon et al., 2022; Cade et al., 2022; Lillard, 2021; Ljubetic et al., 2020). Around age three to age five, children partake in play

that involves imaginary friends or changing the purpose of one object to another to fit their play needs (Cade et al., 2022; Lillard, 2021). As children play, they engage in social interactions that help manage emotions and achieve and maintain interpersonal relationships (Ljubetic et al., 2020; O'Sullivan & Ring, 2021). Young children also partake in inquiry learning as the role of object play, fantasy, and physical play all serve to help children learn about themselves, others, and the world (Bjorklund, 2022; Cade et al., 2022; O'Sullivan & Ring, 2021). Purposeful, guided play can foster joy in learning and engage students with personalized interests or needs to reduce stress and enhance emotional regulation (Allee-Herndon et al., 2022; Jeon et al., 2022). A lack of such opportunities to learn through play could produce deficits in SEC which could impact overall learning and academic achievement, but more research is needed to determine this specific link (Allee-Herndon et al., 2022; Cade et al., 2022; Jeon et al., 2022; Lillard, 2021; Ljubetic et al., 2020; O'Sullivan & Ring, 2021).

Emotional Intelligence

To recognize SEC, further understanding the theory of EI and the impact this has on learning. In 1987, two professors began a journey to understand the link between emotions and intelligence better, eventually leading to a theory's development (Salovey & Mayer, 1990). This theory of EI laid the foundation for understanding the concepts of emotions and how they are tied to intelligence which is later applied to learning outcomes. EI was defined as the mental ability to regulate one's own emotions and feelings to use them to guide thinking and actions (Salovey & Mayer, 1990). EI became the focus of research studies as the debate regarding EI's impact on academics moved front and center in the literature (Gettinger et al., 2021; Kulkarni & Sullivan, 2022). Findings showed that EI affects how one perceives their ability to cope with

environmental hardships that negatively impact the social-cognitive development of children (Jiang et al., 2020; Yuanxia et al., 2021).

The literature suggests that increased life satisfaction and resilience help people cope with emerging challenges, including improved cognitive and behavioral outcomes (Delhom et al., 2020; Jiang et al., 2020). Life satisfaction and resilience emerged as a repeated variable in the link between EI and positive behavioral outcomes (Kong et al., 2019; Yuanxia et al., 2021). Findings also support EI positively impacting mental health and the perceived notion of overall happiness, which can affect the levels of support provided within the home (Sánchez-Núñez et al., 2020). With family support being significant to academic success, EI is important to understand for the student and the influence this has on the family (Jiang et al., 2020; Sánchez-Núñez et al., 2020). On the other hand, EI impacts mental health in that low EI can have adverse behavioral outcomes, ultimately moving learning in children with typical development and those with developmental delays (Bittár et al., 2020; Galligan et al., 2022). EI is necessary to understand as it is shown to be directly linked to mental health and behavioral outcomes that impact schools, including eating disorders, suicide, and violence (Bittár et al., 2020; Estevez-Casellas et al., 2021; Giusti et al., 2021). Further development and discussion of EI led to the curriculum framework of RULER, in which Recognizing, Understanding, Labeling, Expressing, and Regulating skills were determined to help build EI within the school community (Yale Center for Emotional Intelligence, 2021).

Mental Health

Over the years, there has been a growing alarm about the mental health of students and the need for more awareness and interventions within the school system to address those concerns (Zabek et al., 2022). Development during childhood is a critical time, impacting

cognitive function, motivation for learning, the ability to self-regulate in various environments, and social interaction skills (Burns & Gottschalk, 2019; Mojtabai & Olfson, 2020). Unfortunately, the literature states that psychological distress and mental health issues only rise (Racine et al., 2021; Sharma et al., 2021; UNICEF, 2021). Mojtabai and Olfson (2020) conducted a study surveying over 240,000 adolescents and found that one in five children is receiving care for mental health issues. The COVID-19 pandemic increased this need and brought to light the fact that mental health should be considered a student's greatest need, and a call for increased support in the school system is warranted (American Academy of Pediatrics, 2021; UNICEF, 2021; U.S. Department of Education, 2021). This was supported by a meta-analysis of 29 studies focusing on anxiety and depression in adolescents to find that these symptoms have doubled since the COVID-19 pandemic (Racine et al., 2021). As understanding the significance and rise of mental health issues begins to take shape, a need for mental health professionals within the schools and student support has been challenging (Zabek et al., 2022). With an increased awareness of mental health and the impact this has on the learning process, much of the research points toward a system of curriculum that addresses social-emotional needs in schools (CASEL, 2023).

Social Emotional Learning

The findings in both Durlak et al. (2011) and Taylor et al. (2017) studies showed that school-wide SEL curricula that included the sequenced, active, focused, explicit (SAFE) method were far more effective in increasing SEC in students than those curriculums that did not follow the SAFE method. Combined with understanding EI and the SAFE method, CASEL (2023) became the go-to organization for SEL (Williamson, 2021). CASEL's (2023) framework comprises five SEC: self-awareness, self-management, social awareness, relationship skills, and

responsible decision-making. The framework also addresses the classroom as the inner circle, followed by schools, families, caregivers, and the community. Both CASEL (2023) and NAEYC (2023) state that students learn in developmental stages, and instruction should be appropriate for each stage to maximize their success toward academic achievement. The literature strongly supports the need for school SEL programs (CASEL, 2023; McCormick et al., 2021; Murano et al., 2020). Several curricula offer school-wide interventions that support the CASEL (2023) framework for SEL. What often is called to question is the mode of delivery for such intervention and the best approach for students (Kim et al., 2022; Murano et al., 2020; Nemiro et al., 2022; Pooch et al., 2019).

Early Childhood Education

To better comprehend SEL in early childhood education, there is a need to look at how early childhood education changed drastically as learning from stay-at-home mothers moved to educational or daycare facilities (Saracho, 2023; Singer & Wong, 2021). A discussion throughout the literature suggests that the increased need for women in the labor markets as well as women's equality movements, came with the emergence of the Early Childhood Education and Care (ECEC) and early childhood educational facilities with assistance from government funding (NAEYC, 2023; Singer & Wong, 2021). Early childhood education became a political platform for educational equality and focused on the community to help a child's growth and development (Singer & Wong, 2021). Various developmental theories began to emerge, including the Maturation theory, Constructivist theory, Behaviorist theory, Psychoanalytic theory, and Ecological theory that coincide with the cultural changes of women working outside of the home with an emphasis on children's emotional development as well as cognitive and language development (Saracho, 2023; Singer & Wong, 2021). Although the current research

study focuses on the Constructivist theories of Piaget and Vygotsky, it is essential to note that developmental theories as a whole bring a wealth of understanding when considering how children grow and learn; however, Piaget and Vygotsky opened the door to a new version of how social interactions impact children's learning and growth cognitively (Colliver & Veraksa, 2021; Schunk, 2020; S. Smith, 2020). Societal changes in young children's learning environments, moving from one-on-one learning to group learning, changed the acceptance and debate of developmental theories concerning educational practices (Singer & Wong, 2021; Thompson & Stanković-Ramirez, 2021). Due to poverty brought on by World War II and the Cold War, as well as inequitable educational opportunities for young girls, social interactions were limited to helping around the home with siblings or playing outside with other children, making the world the classroom (Saracho, 2023; Singer & Wong, 2021).

As society began to change and political movements re-defined various groups, the world of education began to increase in expectations and accountability (Quílez-Robres et al., 2021; Schunk, 2020; Singer & Wong, 2021; S. Smith, 2020). The increased pressure of producing high-quality education and academic achievement outcomes brought a push to raise expectations of early learners adding to the stress and anxiety that impacts a child's mental health (Ljubetic et al., 2020; O'Sullivan & Ring, 2021; Sincovich et al., 2020; Yüksel et al., 2019). Understanding the difference between daycare facilities and early childhood educational facilities became a debated topic that led to misconceptions about the pedagogical needs of young learners, a topic that is still discussed (Comaskey & Eith, 2022; Singer & Wong, 2021).

Developmentally Appropriate Practice

Interest in understanding how children grow and develop has been a critical contributor to the literature since the emergence of the theory of development founded by Piaget in the 1950s (Ethridge et al., 2022; Thompson & Stanković-Ramirez, 2021). Unfortunately, the No Child Left Behind Act (NCLB) gave way to increased fear that students were not achieving at the level of students in other countries and attempted to push learning onto children at a younger age, becoming the focal point of literature about young learners and their needs (NAEYC, 2023; Sincovich et al., 2020). The National Association of the Education of Young Children (NAEYC, 2023) was quick to emerge as a voice for young learners and created a clear understanding of Developmentally Appropriate Practice (DAP) which is used in various studies to understand better how young children best learn (Bjorklund, 2022; Cade et al., 2022; Mathis et al., 2022). Knowledge of the different stages of development and the need to incorporate play has been critical in the development of early childhood learning facilities and curricula (Allee-Herndon et al., 2022; Ljubetic et al., 2020; Molyneux et al., 2022). Pre-school and kindergarten curricula allowed for DAP with increased self-regulated learning that often came naturally in development as children began to play and socialize with other children (NAEYC, 2023; Thompson & Stanković-Ramirez, 2021). Appropriately interacting with other children became a critical factor in cognitive development and later learning (Clerc-Georgy & Martin, 2021; Colliver & Veraksa, 2021). Allowing children to move through the stages of development naturally leads to the appropriate development of emotional competence in the early years (Colliver & Veraksa, 2021; Laura & Scarzello, 2021). Further research is needed regarding children who lack appropriate development of emotional competence and the link these deficits have to learning (Blewitt et al., 2021; Murano et al., 2020).

Socioeconomic Status

With a clear understanding that SEL is a determinant of academic success, the focus on other factors began to emerge, with SES being at the top of the list (Lechner et al., 2021; Lurie et al., 2021; Waters et al., 2021; F. Zhang et al., 2020). The literature suggests that demographics significantly impact young children's SEC, yet emotions are not necessarily universal (Jukes et al., 2021). Culture plays a role in how SEC is developed and is part of the puzzle. The literature also suggests that parents play a significant role in the development of children as they grow, and SES contributes to a parent's knowledge of how to support best that growth (Ramanathan et al., 2021; Russell et al., 2022; Segal et al., 2021). How children relate to human social behavior is critical during the first three years of development, in which social-emotional skills are acquired at home or in daycare centers and are impacted by exposure to adverse environments (Schneider et al., 2022; Smith et al., 2023). Adverse environments, where young children are exposed to levels of trauma, produce children who are less aware of their own emotions as well as the feelings of others, resulting in an increase in behavioral issues within the school setting (Alzahrani et al., 2019; Armstrong-Carter et al., 2021; Ming et al., 2021; Smith et al., 2023). Parents with low SES may inadvertently impact the cognitive development of young children as exposure to early adversities is linked to low SEC and is essential to understanding school interventions (Schneider et al., 2022; Schoon et al., 2021; Smith et al., 2023). Adverse effects of low SES due to early childhood adversity added stress due to insufficient financial stability, and low parental support all impact the cognitive development of young children and place them at risk for future learning (Ming et al., 2021; Ramanathan et al., 2021). Early adversity leads to challenges that are linked to difficulties with social-emotional and cognitive development;

however, the literature does not connect these challenges to academic achievement in early learners (Heberle & Carter, 2020; Jukes et al., 2021; Schoon et al., 2021).

The Big Five Factor

Throughout the literature regarding SEL, personality traits have emerged as a critical component in discussing academic achievement (Lechner et al., 2021; Walton et al., 2023). An overall framework, known as the Big Five Factor, has been researched as a potential front-runner for understanding the numerous social-emotional skills that exist, which could provide a common language amongst stakeholders in identifying connections between personality traits, SEL, SES, and academic achievement (Brandt et al., 2020; Lechner et al., 2021; Walton et al., 2023). The idea of personality traits emerged in the early 1900s with over 4,500 personality trait terms that were later whittled down to 16 traits in the 1940s. (Lim, 2023; Zell & Lesick, 2022). In the 1980s and 1990s, several psychologists developed the theory of the Big Five Factor that has been used to assess various traits of personality, including extraversion, agreeableness, openness, conscientiousness, and neuroticism; terms that have been widely adopted and used by psychologists (Lim, 2023; Walton et al., 2023; Zell & Lesick, 2022).

The literature suggests the benefit of understanding the Big Five Factor as it connects to CASEL's five core competencies as well as developmental factors and provides a depth of knowledge to the current SEL practices and interventions (Lechner et al., 2021; Walton et al., 2023). The Big Five Factor has also been grouped into two personality categories Alpha/Stability, which includes agreeableness, conscientiousness, and neuroticism, with the other Beta/Plasticity, to form openness and extraversion (López-Cassà et al., 2022). Personality has not been widely studied in children as many personalities change as children grow into adulthood, yet further research is needed in the early childhood range (López-Cassà et al., 2022).

Some researchers argue that specific innate personality traits allow students to achieve success in various areas of life and academics despite challenges faced at a young age, an idea known as grit which is a highly researched facet that correlates with personality traits (Walton et al., 2023; Zell & Lesick, 2022). Similarly, the Big Five Factor has been linked to EI in that personality traits are noteworthy predictors of a person's well-being, including academic achievement; therefore, The Big Five Factor must be taken into consideration when looking at EI and SEC, and further research is needed in determining this link in young children (López-Cassà et al., 2022; Walton et al., 2023; Zell & Lesick, 2022).

Academic Achievement

Children develop knowledge and skills throughout elementary school (NAEYC, 2023; Piaget, 1952; Thompson & Stanković-Ramirez, 2021). The literature has shown that a child's SEC can determine their academic success (CASEL, 2023; Murano et al., 2020; Pooch et al., 2019). SEL has become the focus in understanding academic achievement and the identified problem of low performance, and school-wide intervention has become the answer to that problem (Durlak et al., 2011; Mahoney et al., 2021; Taylor et al., 2017). The COVID-19 pandemic also showed how important SEL became to a young child's learning when children were left without the structure and care received in school and interactions with parents because exponentially crucial for academic success (Egan et al., 2021; Smith et al., 2023). The question became how to provide the best intervention measures to increase students' academic achievement (Kim et al., 2022; Murano et al., 2020; Nemiro et al., 2022; Pooch et al., 2019; Yap et al., 2022). Much of the research that discusses low-performing students links poor behavior as the cause; however, social-emotional deficits have not been evaluated as a cause for poor

behavior, and further research is needed to understand the impact of those deficits (Justicia-Arráez et al., 2021; Kulkarni & Sullivan, 2022; C. Yang et al., 2018; Y. Yang et al., 2019).

Interventions

SEL intervention has become a mass conglomerate of policymakers, educators, psychologists, and companies attempting to create programs that quench the need for improved SEL implementation (Williamson, 2021). School-wide SEL programs show increased student knowledge of SEC, producing positive results in overall academic achievement when early intervention measures are implemented (Blewitt et al., 2021; Laura & Scarzello, 2021; Low et al., 2019). Furthermore, programs that support students' self-awareness of their need for SEC and foster opportunities to regulate emotions are essential for behavioral management (Daunic et al., 2021; Green et al., 2020; Kulkarni & Sullivan, 2022). Despite the positive outcomes of the school-wide SEL curriculum, the effectiveness of each program is highly dependent on the teacher and the relationship they have with the students in the classroom (Moazami-Goodarzi et al., 2021; Strahan & Poteat, 2020; Wright & Steed, 2021). Although school-wide intervention models have shown a positive general effect, they are called into question as to whether or not they genuinely help students at risk for SEC deficits before entering the school system or if they allow at-risk students to be overlooked (Kim et al., 2022; Murano et al., 2020; Pooch et al., 2019). Furthermore, providing a school-wide approach may be beneficial during the school year but is only sometimes sustainable (Low et al., 2019; Murano et al., 2020). The role of the teacher and how the intervention is delivered can significantly impact the success of SEL intervention (Alzahrani et al., 2019; Strahan & Poteat, 2020; Wright & Steed, 2021). Although several programs focus on social and emotional intervention for students, little research has determined such interventions' sustainability and long-term impacts on preschool-age children (Pooch et al.,

2019; Richter et al., 2017). Focusing on the early years and the development of a child regarding SEC deficits is another focus to improve academic performance (Collie, 2020; Murano et al., 2020), as a targeted approach to SEC intervention showed more significant academic gains in children with SEC deficits than a school-wide approach (Mahoney et al., 2021; Murano et al., 2020). The development of SEC is essential in the early years and can impact academic success if not developed (Collie, 2020; Pooch et al., 2019; Schneider et al., 2022). The study by Murano et al. (2020) shows that a targeted approach to at-risk students is more impactful on behavioral outcomes, and further investigation will help to understand if this method also impacts academic achievement.

Current delivery methods for SEL instruction focus on a school-wide approach, with many studies promoting an increase in positive behavioral and academic achievement outcomes (Kaspar & Massey, 2023; Kim et al., 2022; Wigelsworth et al., 2021). Meta-analysis studies conducted by Durlak et al. (2011), Taylor et al. (2017), and Murano et al. (2020) provide information regarding the positive outcomes that SEL programs can have on students, yet do not provide specifics on how such programs should be implemented. Most SEL programs explicitly teach SEL competencies and implicit education through application and practice within the classroom (Jones et al., 2021; Wigelsworth et al., 2021). For SEL instruction to be effective, the intervention program should include five essential features to include incorporating the SAFE method, occurring within supportive contexts, building adult competencies, setting clear goals, and including teachings that are equitable, culturally responsive, trauma-sensitive, and socially just (CASEL, 2023; Hamilton & Doss, 2020; Hayashi et al., 2022; Jones et al., 2021; Kaspar & Massey, 2023; Sandilos et al., 2023).

Jones et al. (2021) created a report in order to evaluate 33 current SEL programs and provides a breakdown of each program that could pose to be beneficial when selecting a school-wide SEL implementation method; however, the literature does not explicitly look at academic achievement outcomes about the use of each of these programs (Nemiro et al., 2022; Yap et al., 2022). Moreover, despite there being numerous programs that incorporate SEL, it must be noted that commonality in the integration of CASEL's five core competencies is not clearly defined, and many programs refer to various SEL skills rather than have a clear understanding of the five core competencies (Jones et al., 2021; Wigelsworth et al., 2021). Furthermore, most evaluations of SEL curriculum or programs are not measurable at this time as specific skills that are taught do not always align with what is being measured, giving an unclear evaluation of the effectiveness of SEL programs (Ura et al., 2020; Wigelsworth et al., 2021). The two meta-analysis studies that are widely used to reference SEL intervention effectiveness were conducted by Durlak et al. (2011) and Taylor et al. (2017), with more current research calling to question the validity of those measurement outcomes (Ura et al., 2020; Wigelsworth et al., 2021).

Researchers argue that measurement outcomes have focused on broad elements of mental health and student behavior rather than specific SECs (Elliott et al., 2021; Ura et al., 2020; Wigelsworth et al., 2021). Elliott et al. (2021) also mention that parent input has been limited when evaluating SEL needs on a school-wide level, with very few studies including parent input on program evaluations, and continue to state that no study has combined both EBCs and SEL skills in school-wide SEL program evaluation. For current programs to be more effective, a universal language and acceptance of SEL competencies are required (Blewitt et al., 2020; Jones et al., 2021; Wigelsworth et al., 2021). With various programs looking at SEL holistically, trying to match a program that fits all needs, more research is needed to determine if a targeted

approach that utilizes parent input and focuses on prevention could be more impactful (Blewitt et al., 2021; Elliot et al., 2021; Murano et al., 2020; Pooch et al., 2019; Ura et al., 2020; Wigelsworth et al., 2021).

Intervention Implementation

Social, emotional, and behavioral (SEB) issues have increased the need for intervention programs (Kaspar & Massey, 2023; Y. Zhang et al., 2022). Despite the numerous evidence-based practices (EBPs), implementation is only sometimes maintained with fidelity (Kaspar & Massey, 2023; Merle et al., 2022; Y. Zhang et al., 2022). Throughout the literature, school organizations as a whole are noted as being responsible for creating an environment that enables effective implementation practices; however, it is the teachers who are the primary implementers of current interventions within the classroom (Kaspar & Massey, 2023; Merle et al., 2022; Sandilos et al., 2023). Time is a reoccurring theme in the literature regarding implementation, as many educators view interventions as a separate curriculum, whereas the literature suggests that implementation is best when embedded in the curriculum (Benson, 2021; Sprenger, 2020; Y. Zhang et al., 2022). Legislation pushed for EBPs that focus on SEBs which birthed the multi-tiered system of support (MTSS) framework, an implementation strategy that divides intervention into three tiers, with tier one concentrating on the school-wide approach, tier two targeting students through behavioral data, and tier three focusing on at-risk students (Hendricks & Fuchs, 2020; Merle et al., 2022; Y. Zhang et al., 2022). Rather than focus on the negative behaviors in students, Positive Behavior Interventions and Support (PBIS), yet another framework, infiltrated throughout the MTSS framework to promote incentives for desired behavioral outcomes (Bradshaw et al., 2020; Y. Zhang et al., 2022).

The literature is inundated with intervention practices and suggests that more focus should be on the implementation process (Ferreira et al., 2020; Murano et al., 2020; Y. Zhang et al., 2022). Numerous factors impact SEB application, including time, administrative support, teacher buy-in, and teacher turnover (Kaspar & Massey, 2023; Merle et al., 2022). Fidelity is a term throughout the literature that implicates its necessity in any school-wide implementation plan, which requires adherence, exposure, quality deliverance, program differentiation, and participant responsiveness (Castner, 2020; Kaspar & Massey, 2023; Merle et al., 2022). Despite fidelity being a critical factor in implementation, the priorities of the school and the potential of application practices becoming another checklist item for teachers to do impacts the overall outcome of such execution within the classroom (Castner, 2020; Merle et al., 2022). Although various studies examine school-wide implementation, it is noted throughout the literature that studies fail to focus on how and why specific strategies produce better outcomes and only provide a guideline which then increases the implementation gap (Merle et al., 2022; Wigelsworth et al., 2021). Studies also show that dedicating time to the application of school-wide implementation practices is essential, yet found that some student's needs are too great to be effectively managed, calling for a more targeted approach to implementation to address specific student needs (Hamilton & Doss, 2020; Murano et al., 2020). Much of the literature focuses on intervention implementation rather than prevention, yet a targeted approach has begun to emerge as a tier-one option as this strategy takes implementation out of the general education setting and moves to a more preventative measure when looking at SEB issues in students (Blewitt et al., 2021; Justicia-Arráez et al., 2021; Murano et al., 2020).

Deficits in Social-Emotional Competence

The literature suggests that early childhood education should align with developmentally appropriate practices (DAP) for children to learn effectively (NAEYC, 2023; Thompson & Stanković-Ramirez, 2021). With children developing necessary skills during the first three years of their childhood, it is essential to understand how best to support students that do not develop those skills needed to be successful (Schneider et al., 2022; Smagorinsky, 2021). SEC has emerged as a significant indicator of academic success (CASEL, 2023; Durlak et al., 2011; Strahan & Poteat, 2020; Taylor et al., 2017), yet much of the research focuses on school-wide intervention methods and does not focus on the impact SEC deficits may have on the academic journey in the early years. Furthermore, other development factors are implicated as a root cause for social-emotional deficits and require further research to understand better the connection (Schneider et al., 2022; Schoon et al., 2021; Smith et al., 2023). Understanding SEC deficits in the early years could provide the necessary information so educators can better support low-performing students to improve a child's academic success.

Child Development and CASEL's Five Domains

There is a link between child development and SEL, as understanding how children grow and learn is critical to understanding SEC regarding the five domains of SEL (Malik & Marwaha, 2022; Saracho, 2023). Standards should align with developmental stages to better comprehend what skills stay the same as children develop and what should be changed as they grow (Bjorklund, 2022; Cade et al., 2022; Malik & Marwaha, 2022; Mathis et al., 2022; NAEYC, 2023). Frameworks and programs must articulate developmental tasks correlating to SEL domains and easily translate to standards and measurable outcomes to assess progress or deficits in SEC (Malik & Marwaha, 2022; O'Sullivan & Ring, 2021). Over 250 million children

are not reaching their developmental potential, and broader efforts are needed at the local level to ensure communities are supporting the specific needs of students within those communities (Mathis et al., 2022; McCoy et al., 2022). Looking specifically at the five domains of SEL and developmental milestones is essential in understanding the role of schools or interventions regarding SEC deficits (Murano et al., 2020; Schneider et al., 2022; Schoon et al., 2021).

Self-awareness is the first domain in CASEL's five domains of SEL. Self-awareness begins with identifying one's emotions, starting at two months of age when children express feelings with facial expressions and body language (CASEL, 2023). As children develop self-awareness, they build self-confidence, which can be impacted by inappropriate developmental expectations from demanding curricula to meet societal and political academic expectations (CASEL, 2023; O'Sullivan & Ring, 2021).

Self-management is the second CASEL (2023) domain linked to student engagement and student motivation in school (C. Yang et al., 2018; Yüksel et al., 2019). Developmentally, children should be able to manage difficult emotions through coping skills and effectively manage stress (Jeon et al., 2022; Schoon et al., 2021). Children move from a toddler's impulses to a five-year-old's more deliberate behavior and begin to self-regulate their emotions in kindergarten (Daunic et al., 2021; Schoon et al., 2021). Social awareness, the third domain, is the ability to look at the perspective of others as well as empathize with others from different backgrounds (CASEL, 2023). This domain is connected to the developmental process of temperament in how one reacts to the world around them as well as plasticity and the ability to change as children learn conflict resolution with others (Bjorklund, 2022; Hendricks & Fuchs, 2020; Schneider et al., 2022). Children often acquire these SEL skills through play as they learn socially acceptable behaviors, like sharing toys with others (Allee-Herndon et al., 2022; Lillard, 2021; Ljubetic et al., 2020).

Within this domain, children should learn about available support systems in dealing with emotions; however, this can be impacted by low SES environments and requires a more in-depth look into the developmental deficits that may occur because of a lack of support (Schoon et al., 2021). Relationship skills are the fourth domain and develop through teamwork activities and opportunities to practice listening skills, a period of development where relationships with parents and teachers are significantly meaningful (CASEL, 2023; O'Sullivan & Ring, 2021). This social-emotional skill is also acquired through shared attention beginning as early as nine months of age and continues into the preschool years as well as the development of trust, which has been linked to positive academic outcomes (Allee-Herndon et al., 2022; Bjorklund, 2022; Lillard, 2021; Ljubetic et al., 2020; Mathis et al., 2022; Schoon et al., 2021). The last domain is responsible decision-making, which is taking other perspectives into account and resolving conflicts while also learning how to determine the difference between a need and a want (CASEL, 2023; Malik & Marwaha, 2022). An understanding that children are ego-centric during the preschool years at age three can help educators better assist children in learning social norms, natural consequences, and conflict resolution by knowing the developmental readiness of that child; however, an overly controlled curriculum could thwart this milestone (Bjorklund, 2022; Cade et al., 2022; O'Sullivan & Ring, 2021; Schoon et al., 2021). Although there is a plethora of information regarding SEC milestones, there is a gap in the research about children that lack these developmental steps and intervention measures that could help during the early years to ensure students catch up to their same-age peers and if these SEC deficits impact academic achievement (Bjorklund, 2022; Cade et al., 2022; Malik & Marwaha, 2022; Mathis et al., 2022; Murano et al., 2020; NAEYC, 2023; Pooch et al., 2019).

SEL, Special Education, and Mental Health

The literature clearly links early childhood development, developmental delays resulting in special education services, and mental health (Mathis et al., 2022; McCoy et al., 2022; Sheppard & Moran, 2022). When developmental delays or deficits are noticed in the education system, schools generally begin determining a child's eligibility for special education services (Sheppard & Moran, 2022). More research is needed to identify SEC deficits in young children to improve support for parents within their home and provide better opportunities for early childhood development, as studies show there is a lack of support in this area for parents even though housing environments impact positive developmental outcomes in young children (Gao et al., 2021; Sheppard & Moran, 2022). Requirements for schools brought on by the No Child Left Behind Act (NCLB, 2001), the Individuals with Disabilities Education Act (IDEA, 2004), and the Every Student Succeeds Act (ESSA, 2015) ensured that parents, school administration, general education teachers, special education teachers, and professionals such as school psychologists are part of Individual Education Plan (IEP) meetings to determine necessary services for children with learning disabilities or disorders; however, collaboration efforts among this team need to be better defined to meet the individual needs of children (Gao et al., 2021; Sheppard & Moran, 2022). While much effort has been placed into identifying and supporting students with special education needs, a large majority of special education testing is completed through reading assessments in which SEC deficits are not a determinant factor even though reading comprehension is shown to be a cognitive issue (Blewitt et al., 2021; Hendricks & Fuchs, 2020).

The literature also addresses a reoccurring theme of teacher preparedness: many general education teachers do not feel equipped or qualified to assess and serve students with disabilities

or developmental delays (Alexander & Byrd, 2020; Grimsby, 2020; Mathis et al., 2022). The literature supports the need for better teacher training regarding behavioral issues in consultation with mental health providers, as this relationship showed children with higher scores of attachments and fewer behavioral problems in the classroom (Blewitt et al., 2021; Mathis et al., 2022). Moreover, since children who grow up in underprivileged communities are more at risk for SEC delays and behavioral issues, teachers need better training in SEL development to recognize possible deficits early on in the educational journey (Blewitt et al., 2021; Mathis et al., 2022; Schoon et al., 2021; Smith et al., 2023; Williamson, 2021). Better relationships between educators and mental health professionals are needed as research shows positive outcomes with teacher-student relationships involving students with mental health issues or special education needs (Mathis et al., 2022; Sandilos et al., 2023).

Due to NCLB (2001), IDEA (2004), and ESSA (2015), there is much focus on special education and early childhood interventions, resource teachers, and other resources available for students with IEPs, yet there is a gap in the research to determine possible misdiagnosis as many other factors can lead to developmental delays and SEC deficits causing educational concerns in young children (Gao et al., 2021; Hendricks & Fuchs, 2020). Adverse childhood experiences could lead to developmental delays, and early childhood SEC deficits could lead to various other disorders in children, such as autism, attention deficit hyperactive disorder (ADHD), oppositional defiance disorder (ODD), social anxiety disorder, and many others that are commonly found on IEPs (Heberle & Carter, 2020; Malik & Marwaha, 2022; Smith et al., 2023; Williamson, 2021). Routine screenings and communication with parents have shown to be effective in creating positive relationships between early childcare providers and parents as transparency and genuine care for the development of the child was well received, supporting the

need for early childhood SEC deficit screeners in an attempt to provide the best possible start for young children in their educational journey (Malik & Marwaha, 2022; Sheppard & Moran, 2022). Screeners for disabilities or disorders can occur before children are two years of age and continue through age six, looking at parent or family environmental and developmental factors as part of that screening process which is currently done at the clinical level; however, there is a gap in the research regarding application and practice within the educational community (Malik & Marwaha, 2022; Sheppard & Moran, 2022). Further research is needed regarding the link between special education, SEL, and mental health issues at the school level, as current screeners for learning disabilities in the educational setting focus on behaviors and academic ability rather than developmental delays and SEC deficits, resulting in a possible misdiagnosis of needs and services within the school setting (Blewitt et al., 2021; Hendricks & Fuchs, 2020; Mathis et al., 2022; Murano et al., 2020).

Impact on Academic Achievement

The literature strongly suggests that mental health affects the development of social-emotional competencies (SEC) needed for academic success (Burns & Gottschalk, 2019; Gettinger et al., 2021). Being that a significant amount of growth and development takes place in the early years, understanding the impact a lack of SEC development has on academic achievement is a necessary starting point (Housman, 2017; Murano et al., 2020; Pooch et al., 2019; Richter et al., 2017). Early adversity or developmental issues could significantly impact SEC and be a catalyst for low academic performance (Guhn et al., 2020; Y. Zhang et al., 2019). Similarly, low SES affects the development of SEC, causing a chain reaction in behavioral outcomes and the ability to learn, resulting in low academic achievement (Gettinger et al., 2021; Schneider et al., 2022; Smith et al., 2023). When looking at the impact of the SEL movement

over the years, measurements using personality markers have been helpful in predicting SES outcomes (Lechner et al., 2021). The need for more accountability in SEL curriculum implementation would be beneficial as personality and behavior in children could assist in predicting academic achievement outcomes (Lechner et al., 2021; Lurie et al., 2021; Williamson, 2021; F. Zhang et al., 2020). Despite this knowledge, limited research has focused on the impact of developmental and SEL deficits on academic achievement, and a better understanding of these factors that are introduced and grow before attending school is critical in determining those deficits (American Academy of Pediatrics, 2023; Murano et al., 2020; Schneider et al., 2022). Applying appropriate and targeted interventions for students with SEC deficits could significantly improve academic achievement in young learners and set them on a path to academic success (Kim et al., 2022; Murano et al., 2020).

Factors Beyond Control

It must be noted that several reoccurring issues are discussed in the literature that educators have no control over when looking at the impact of developmental and environmental factors that lead to SEC deficits; however, better targeted intervention measures may be the answer for children who are at risk for such delays influencing academic achievement (Armstrong-Carter et al., 2021; Ramanathan et al., 2021; Russell et al., 2022; Smith et al., 2023). Financial stress or issues during the developmental years from birth to age two could affect cognitive development in young children leading to negative mother-child relationships that are critical for attachment and shared attention development as children learn social skills (Bjorklund, 2022; Ramanathan et al., 2021). Research shows that even when families experience financial recovery after children are age two, there are still negative results for cognitive development even into the preschool years, supporting again that early childhood development is

critical for learning (Cade et al., 2022; Ramanathan et al., 2021; Russell et al., 2022; Smith et al., 2023). Although schools offer programs that attempt to aid families in financial stress, the damage to development could affect a child's school readiness causing children to enter the public education system with developmental and social-emotional deficits that are potentially never addressed, calling for a need for early screeners and a targeted approach to early childhood interventions (Daunic et al., 2021; Murano et al., 2020; Pooch et al., 2019; Ramanathan et al., 2021). Similarly, children coming from low SES, resulting from income, employment, health, education, crime, and living environment, places children at a greater risk for developmental difficulties; nevertheless, schools have no control over these family situations (Armstrong-Carter et al., 2021). Despite this knowledge regarding developmental problems, school programs are not equipped to support families in these areas, and more research is needed to determine if these factors can predict academic achievement and promote better intervention measures for young children (Armstrong-Carter et al., 2021; Murano et al., 2020). Likewise, prosocial behaviors of being generous and kind to others have shown to be positive predictors of academic achievement, with results showing early adversity in children connected to low academic achievement but fail to make a connection to SEL deficits (Armstrong-Carter et al., 2021; Murano et al., 2020).

Moreover, schools have no control over a child's early exposure to stimulation and learning opportunities that involve activities such as reading books, singing songs, counting items, and drawing, even though these have been known to produce positive developmental effects in young children (Russell et al., 2022). Free and reduced lunch or other food incentive programs are not enough, as the literature shows that programs that provide nutritional supplementation are less effective than programs that combine nutritional supplementation with

stimulation activities (Russell et al., 2022). With many kindergarten curricula focusing heavily on reading, reading comprehension has been proven throughout the literature as being influenced by cognitive development, yet interventions typically focus on reading strategies rather than on SEC development (Blewitt et al., 2021; Hendricks & Fuchs, 2020; Russell et al., 2022). Emotional awareness is another facet of SEC linked to personality traits that influence one's ability to adapt socially and emotionally to various environments, an area that can be taught with school-wide SEL implementation but does not assist in a targeted approach to SEC deficits that children already have before they enter the school environment (Murano et al., 2020; Smith et al., 2023). Since educational entities have no control over these critical factors that impact academic achievement, a better look at SEC deficit screeners and the influence of targeted SEC intervention on educational success is needed (Murano et al., 2020; Pooch et al., 2019).

Summary

SEL is strongly linked to academic achievement, and many school-wide implementation programs have been designed to assist in this initiative (CASEL, 2023; Ferreira et al., 2020; Durlak et al., 2011; Taylor et al., 2017; Strahan & Poteat, 2020). Piaget's theory of development and Vygotsky's social cognitive theory focuses on the social aspect of knowledge acquisition (S. Smith, 2020). Both theories guide this topic by providing the foundation for understanding how young learners must establish the necessary skills throughout growth to be successful in academics, and the influence social environment has on that development (Ming et al., 2021; Murano et al., 2020; Saracho, 2023; Schneider et al., 2022). The literature demonstrates the connection between SEC and academic achievement, pointing out the potential pitfalls during the educational journey caused by SEC deficits (Murano et al., 2020; Pooch et al., 2019). Adverse experiences connected to low SES and other developmental delays could be a catalyst

for underperformance in early learners (Armstrong-Carter et al., 2021; Ramanathan et al., 2021). Despite this, a gap exists in the literature regarding the possible impact social-emotional deficits may have on low academic achievement, with little research focusing on a targeted approach toward at-risk students (Kim et al., 2022; Murano et al., 2020; Pooch et al., 2019; Wright & Steed, 2021). By focusing on at-risk students and social-emotional deficits, a better understanding of academic failure and possible targeted intervention measures will improve low-performing elementary students' academic achievement.

CHAPTER THREE: METHODS

Overview

This quantitative predictive correlational and causal-comparative study aimed to explore the relationship between early childhood social-emotional scores, SES, and academic achievement in elementary school students. The predictive correlational study aimed to determine if early childhood social-emotional scores could predict academic achievement in elementary students and explore the strength of those variables on academic achievement. The causal-comparative research design attempted to explore whether there was a difference in MAP reading scores for those that have a PIP indicator and those that do not. The chapter begins with an introduction of the design for this study to include definitions of each variable. The research question and null hypothesis follow. The participants, setting, instrumentation, procedures, and data analysis plans are presented.

Design

This quantitative study utilized a combination of predictive correlational and causal-comparative research designs. Initially, the researcher planned to use multiple regression testing to explore the predictive relationship between social-emotional scores, SES, and academic achievement; however, when running the tests, assumptions were not met for the second research question due to the predictor variable being dichotomous (Creswell, 2019). A biserial correlation was run as this statistical test supports a dichotomous predictor variable, but assumptions were not met; therefore, a non-parametric Mann-Whitney U test was run as this was appropriate to determine if there were difference between the MAP reading scores for students with a yes PIP indicators and those without (Gall et al., 2007).

A quantitative predictive correlational research design was used to foresee an outcome, or criterion, based on the predictor variables identified by the researcher, determining the variance of the relationship found through statistical measurement (Creswell, 2019). A predictive correlational design is the most efficient way to analyze the relationship between the predictor and criterion variables. A quantitative predictive correlational research design has been used in previous studies when looking at the relationships associated with the variables in the present study (Guhn et al., 2020; Kulkarni & Sullivan, 2022; Liu et al., 2020; Ramanathan et al., 2021); therefore, this is an appropriate design. Several studies have quantified social-emotional competence using surveys to determine scores for data collection (Pooch et al., 2019; Squires et al., 2015; Wright & Steed, 2021). Social-emotional deficits are the developmental delays or absence of skills such as compliance, self-regulation, adaptive functioning, interaction with others, communication, and independence (Pooch et al., 2019). SES is determined by the South Carolina Department of Education's PIP indicator (https://ed.sc.gov), whereas academic achievement resulted from a student's RIT score on the fall Measure of Academic Progress (MAP) reading assessment for the 2023-2024 school year (https://www.nwea.org). Both SEC and SES have been used in previous studies to predict academic achievement outcomes between these variables (Guhn et al., 2020; Ming et al., 2021; Murano et al., 2020; Ramanathan et al., 2021). SES has also been used to predict SEL delays, supporting using the variables as predictor variables for the present study (Gettinger et al., 2021; Guhn et al., 2020; Schneider et al., 2022; Y. Zhang et al., 2019). A relationship among all three variables has been noted throughout multiple research studies and will help explore the relationship in the present study (Armstrong-Carter et al., 2021; Blewitt et al., 2021; CASEL, 2023; Creswell, 2019; Murano et al., 2020).

Research Question

RQ1: How accurately can academic achievement be predicted by early childhood social-emotional scores for elementary students?

RQ2: Is there a statistically significant median difference in MAP scores between PIP students and non-PIP students for elementary students?

Hypotheses

The null hypotheses for this study is:

$H_0$1: There is no significant predictive relationship between academic achievement and early childhood social-emotional scores for elementary students.

$H_0$2: There is no statistically significant median difference in MAP scores between PIP students and non-PIP students for elementary students.

Participants and Setting

The following section consists of a description of the participants and the setting selected for the present study. The population from which the sample was drawn is included, along with sampling techniques and an explanation of the sample size. A demographic overview of the population is provided for the sample.

Population

The population of the western Midlands of South Carolina is 171,000 people, with 52% of persons being female (www.census.gov). Twenty-one percent of the population is under 18, and 5% is under five (www.census.gov). The labor force consists of 58% of persons whose median household income is $57, 572 and 16% of persons living in poverty (www.census.gov). Eighty-nine percent of the population has at least a high school diploma, with only 29% having a bachelor's degree or higher (www.census.gov).

Participants

The participants for the study were selected from a convenience sample of elementary fourth-grade students in the western Midlands of South Carolina. Participants were chosen from the fourth-grade student population who partook in the MAP reading assessment during their third-grade fall semester of the 2022-2023 school year. Students did not participate in this study as student historical data, and SES was obtained from school district personnel, and the participants' parents filled out questionnaire information. Although participants come from a sampling of fourth-grade students, information obtained on the questionnaire is related to early childhood cognitive development for children at age five. Email addresses of participants' parents were obtained and introduced to the study to elicit a large enough sample size. The Jones Area School District (pseudonym) ranges from low to upper income in the western Midlands of South Carolina, with 63 percent of the student population reported to be in poverty as determined by the South Carolina Pupil in Poverty (PIP) indicator (https://ed.sc.gov).

For this study, the sample of participants was 70, which exceeds the minimum requirement when assuming a medium effect size. According to Gall et al. (2007), the minimum sample size requirement for a predictive correlational design is 66 when considering a medium effect size with a statistical power of .7 at the .05 alpha level. The sample came from elementary schools within a specific geographical region in the school district. School district personnel assisted in gathering historical assessment data. Within each school, participants were selected from fourth-grade students who participated in the fall MAP reading assessment for the 2022-2023 school year during their third-grade school year. The sample consisted of 28 females and 42 males. The socioeconomic status of the participants were divided into two groups, yes for PIP indicator and no for not having a PIP indicator. One group was sampled, which was determined

based on criteria for the target population. A stratified sampling was used to ensure that all SES environments and an equal number of students who show SEL deficits and those who do not are represented. The number of participants considered a PIP student was 35. Participants showing SEL deficits at age five was 22, with 11 participants in the "Refer" range, 11 participants in the "Monitor" category, and 48 participants in the "Low to no risk category". 46 participants were in the "High" to "High Average" category for the MAP reading assessment, 10 fell into the "Average" range, and 14 fell into the "Low" to "Low Average" range.

Setting

The participants were limited to fourth-grade students who attended schools in the Jones Area School District located in the western Midlands of South Carolina and participated in the fall MAP reading assessment during their third-grade school year. Elementary schools were found in a specific location to ensure that school demographics were similar. The study excluded any student in the fourth grade who did not meet the criteria for the target population. School administrators were contacted to assist in helping with the recruitment of participants as well as the distribution of the parent questionnaire. Questionnaires were emailed to foster participation. Historical assessment data and SES information was retrieved from each elementary school in correlation to the returned participant's questionnaires.

Instrumentation

Three separate instruments were used in the collection of data for this study. The Ages & Stages Questionnaires: Social-Emotional, Second Edition (ASQ: SE-2; Squires et al., 2015) was used to measure the predictor variable, social-emotional scores, whereas the PIP indicator was used to identify the predictor variable, socioeconomic status. The MAP reading assessment was used to measure the criterion variable for the research question, academic achievement.

ASQ: SE-2

The instrument that was used to measure social-emotional scores was the ASQ: SE-2 questionnaire (Squires et al., 2015). The ASQ: SE-2 is a parent questionnaire consisting of 36 questions that focuses on the social-emotional behaviors of young children. Per an email with Brooks Publishing, Co., permission to electronically program this questionnaire was obtained (see Appendix A). The questionnaire was created to identify behaviors of concern in children as young as two months old to address social-emotional concerns that would allow for appropriate interventions, further testing, or areas needing to be monitored as potential pitfalls in young children (Squires et al., 2015). Similar to a pediatric growth scale in which a child's height and weight are measured to determine physical developmental deficits, the ASQ: SE-2 measures social-emotional behaviors to determine if a child has deficits in SEC. The ASQ questionnaire began in the 1970s to create a screening measure for early childhood developmental delays, later adding on team members who continued research in the 1980s, with the first questionnaire being developed in 1995 (Ages & Stages Questionnaires: Social-Emotional, 2023). The ASQ: SE-2 is a second edition that includes a larger age span for screening, a monitoring zone for parents and childcare givers, a quick start guide for executing and scoring the questionnaire, and new behavior and communication items (Squires et al., 2015). The instrument has been used in numerous studies (Pooch et al., 2019; Squires et al., 2015; Wright & Steed, 2021). Squires et al. (2015) report that the instrument's validity is 84%, with the test-retest reliability at 89% and Cronbach's coefficient alpha for internal consistency ranging from 0.71 to 0.91. The instrument consists of several age-leveled screenings from one month to six years of age and also provides screenings for intervals to allow for screenings throughout a child's developmental years. Responses are measured using a three-point Likert scale that ranges from Always to Never.

Points are given for each response, 0 for Rarely/Never, 5 for Sometimes, and 10 for Often/Always. Parents can also select a response if the skill referred to in the question is a concern for the parent, which is given 5 points as well. Parents can also check if the specific skill is an area of concern, adding points to the overall score. The regions screened consist of self-regulation, compliance, social communication, adaptive functioning, autonomy, affect, and interaction with people (Squires et al., 2015). A point system is used to score the questionnaire, which correlates to a cutoff score appropriate for each age range, as shown in Table 1.

Table 1

Ages & Stages Questionnaires: Social-Emotional, Second Edition cutoff scores

Calculated Score based on responses		ASQ:SE-2 Age Interval	Cutoff Score
Often or Always	0 points	30 months	85
Rarely	5 points	36 months	105
Never	10 points	48 months	85
Area of concern	5 points	60 months	95

When looking at a five-year-old child, a score of 95 or higher would be acceptable, whereas a child falling from 70 to 95 would need to be monitored, and anything below 70 is considered a deficit. The quick start guide provides information on administering and scoring the questionnaire. The researcher will score the questionnaire. The questionnaire takes 10 to 15 minutes to complete and costs about $250.00 to purchase, making the screener a feasible, time-efficient, and cost-effective instrument for the present study. See Appendix B for permission to use the instrument.

PIP Indicator

The Pupils in Poverty (PIP) indicator uses the following indicators to identify students in poverty: Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), Medicaid (within three years), foster child standing, migrant position, and

homeless/runaway status (https://ed.sc.gov). These indicators determine students as a PIP student or not based on encrypted data in PowerSchool, the student information system used by the South Carolina Department of Education, in tandem with government assistance programs (https://ed.sc.gov). According to a memo from M. M. Spearman, state superintendent at the time (personal communication, November 2, 2017), the state legislature uses the PIP indicator to determine a student's free and reduced lunch eligibility and a school's funding eligibility. Likewise, the PIP indicator is used to determine accountability measures for schools and other purposes for school information throughout the state. Using the indicators listed above, a student is either noted as a PIP student or is not.

MAP Reading Assessment

MAP reading assessment is a computer-based adaptive test that helps determine student achievement levels in reading on a state and national level. Permission to obtain assessment data was obtained from the school district (see Appendix C). The MAP assessment was designed in 2000 by the Northwest Evaluation Association (NWEA) in order to provide a norm-referenced measure of student growth in reading over time, providing an individualized plan for growth for each student (https://www.nwea.org). MAP reading assessment is offered during the fall, winter, and spring semesters and is an untimed test. MAP reading scores provide educators with growth and achievement data to target intervention based on individual student needs. Scores are reported as RIT (Rasch Unit) scores that estimate a student's instructional level (https://www.nwea.org). Scores can be tracked to determine student growth from one semester to the next and inform educators, parents, and students regarding growth rates from one school year to the next. Since RIT scores estimate learning level and are not age or grade dependent, a student's score provides quick information on whether a student is falling below grade level and

by how much (https://www.nwea.org). The MAP reading assessment was chosen as the preferred instrument for analyzing academic achievement as students take this assessment three times during the school year, and results have been shown to predict academic achievement on state assessments (Thum & Kuhfeld, 2020). A predictive link report shows that students are 82% to 86% likely to score a "Met Expectations" on the end-of-year South Carolina College and Career Ready (SC Ready) assessment when achieving a "Met" score on the MAP reading assessment in the fall; therefore, the MAP assessment is an appropriate measure for academic achievement (NWEA, 2020). The SC Ready assessment, taken during a student's spring semester, has also been used in other research papers within the South Carolina region to determine students' academic performance (Arman, 2021; Lauffer, 2019; Lawson, 2018). Understanding that MAP reading assessment data have a predictive link toward performance on the SC Ready assessment can assist toward better intervention practices for underperforming students. Students who participate in MAP reading assessments are ranked based on national normative data which is shown as percentile rankings. Five different percentile bands range from "Does Not Meet" to "Exceeds Expectations." MAP reading assessment data are reported in several other formats, including class profiles and student-individualized reports. Information can also be viewed differently to determine specific areas of need for individual students, groups of students, and the whole class. A student's individual profile shows the student's score for each test taken, student comparison percentile rankings, growth goals for future assessments, and SC Ready predictive results. A third-grade student's normative reading range is between 186.62 to 197.12, and math ranges from 188.5 to 201.1. The present study focuses on determining if SEL scores and SES can predict academic achievement, as shown by normative MAP data. Test-retest reliability and validity percentages were not available; however, this is the instrument used within South

Carolina to measure academic achievement and predict end-of-the-year academic achievement expectations.

Procedures

Before data collection, the researcher ensured that the proposed research study aligned with the target school district's policy on research, and permissions were obtained to conduct the study within the school district (see Appendix C). Along with the target school district's approval, the Institutional Review Board (IRB) approval was also gained from the researcher's attended university (see Appendix D).

Identifying participants is a critical first step for the present study. Elementary schools had to be located in the suburban area of the school district. The researcher utilized historical assessment data from the school district personnel to ensure that the participants included students in the fourth grade and took the fall MAP reading assessment during their third-grade year of the 2022-2023 school year. The researcher obtained email contact information of parents who met the criteria. Those parents were then contacted by email and provided with a letter (see Appendix E) explaining the research study, their rights as participants, and informed consent. An explanation of the questionnaire, directions for use, and the researcher's contact information were included. The email will also have a password-protected link to the ASQ: SE-2 questionnaire that will be completed should parents agree to participate. An electronic version of the questionnaire was created and provided to parents meeting the criteria to elicit a high rate of return for the consent and questionnaires.

According to a memo from M. M. Spearman, state superintendent at the time (personal communication, May 24, 2018), the state legislature requires that every child can read on grade level by the end of third grade. Student's third-grade year is also the first year that the MAP

assessments are completed. Because of this, student assessment data was chosen from the student's third-grade school year for the 2022-2023 testing year. The researcher contacted the target district school personnel to obtain fall MAP reading assessment data correlating with students whose parents returned the consent order and ASQ: SE-2 questionnaire. A random number generator was used to make a five-digit code for each participant so that received data could be entered into SPSS without names to ensure anonymity. MAP assessment data and SES information were listed according to the participant's five-digit number to analyze the correlation between questionnaire scores, SES, and academic performance.

The target school district is provided with information from the state of South Carolina showing whether a student is considered a Pupil in Poverty (PIP). A student is marked as "yes" or "no" for PIP. This dichotomous variable will be used as a dummy predictor variable in the multiple regression since it is a categorical variable rather than continuous (Warner, 2013). The researcher contacted the target district school personnel to obtain PIP information in correlation with students whose parents met the criteria for participation in this study. Participants were coded using the five-digit code associated with their questionnaire to enter the information in SPSS.

Once the data was collected, information was inputted into an Excel spreadsheet to organize and manipulate the information. Participants' five-digit codes contained the information to ensure the anonymity of participants, and personal information was removed from the questionnaires as soon as scores were input. Each participant had their row to display historical assessment data for MAP reading; the score received on the ASQ: SE-2 questionnaire, and the PIP label. At all stages of the data collection, information identifiable to participants was stored and secured on a password-protected computer obtainable by the researcher, and computer-based

files were encrypted. The information will be kept in a locked cabinet for five years after the completion of the study.

Data Analysis

There were two analyses conducted for this study. The first analysis was a bivariate linear regression for the first research question. The second analysis was a Mann-Whitney U test for the second research question.

Multiple linear regression would have been the most appropriate analysis to explore the relationship between the predictor variables, early childhood social-emotional scores and SES, and the criterion variable of academic achievement per the MAP assessment; however, a large enough sample size to ensure sufficiency for this type of analysis was not possible (Creswell, 2019). Therefore, a bivariate linear regression was the most appropriate analysis for the first research question. The bivariate linear regression equation for the analysis is

$$Y = \beta 0 + \beta 1X1 + \varepsilon$$

Where β0 is a constant (y-intercept), β1 is the slope for X, and ε represents the errors. X is the value of the predictor variable, where X1 is the early childhood social-emotional score as measured by ASQ: SE-2. Y is the value of the criterion variable, where Y is academic achievement per the MAP assessment. The binomial logistic regression equation for the analysis is

$$\text{Logit}(Y) = \beta 0 + \beta 1X1 + \varepsilon$$

Where β0 is a constant (y-intercept), β1 is the slope for X, and ε represents the errors. X is the value of the predictor variable, where X1 is SES as measured by the PIP Indicator. Y is the value of the criterion variable, where Y is academic achievement per the MAP assessment.

The assumption of the independence of observations was determined by the Durbin-Watson statistic indicating no correlation between residuals with a value of 2. Assumption of a linear relationship was determined by a scatterplot in which the predictor variables (x, x) and the criterion variable (y) were plotted to determine if a cigar shape was obtained (Gall et al., 2007). Partial regression plots were used to determine if there is a linear relationship between the criterion variable and each of the predictor variables.

Next, the assumption of homoscedasticity of residuals was tested by a visual inspection of the scatterplot to determine if the residuals are equally plotted across the predicted values or if no pattern exists. An assumption of non-multicollinearity was used to determine a correlation between two or more predictor variables (x), as they should not be highly correlated. A variance inflation factor (VIF) confirmed that the predictor variables produced different information regarding the criterion variable, which should range from 1 to 5 and not exceed 10 (Gall et al., 2007). The assumption of no significant outliers was determined using Casewise Diagnostics to highlight any significant outliers where the case's standardized residual was greater than ±3 standard deviations. A Normal P-plot was used to test the assumption of normal distribution where the line of fit determined normal distribution.

Since there was no homogeneity of variances for the binomial logistic regression, as assessed by Levene's test for equality of variance (p = .004), a nonparametric test was run to determine if there were differences between the two variables. A Mann-Whitney U test was run to determine if there were differences in engagement scores between PIP status of yes or no. The assumptions that must be met for a Mann-Whitney U test are that the independent variable is continuous, the dependent variable is categorical, there must be independence of observations, and the dependent variable has similarly shaped distributions of the independent variable. A

visual inspection of the descriptive statistics showed that these assumptions were met and this was the appropriate test to conduct. The distribution of engagement scores was similar, as assessed by visual inspections.

CHAPTER FOUR: FINDINGS

Overview

The overall purpose of this quantitative predictive correlational and causal-comparative research study was two-fold. First, the researcher sought to determine if there was a significant predictive relationship between early childhood social-emotional scores and academic achievement. Second, the researcher sought to study the impact of a student's PIP indicators on academic achievement. Academic achievement was determined by using MAP data from the fourth-grade student population who partook in the fall MAP reading assessment during their third-grade semester of the 2022-2023 school year. The first research question addressed the predictability of academic achievement based on early childhood social-emotional scores for elementary school students. The second research question addressed the cause-and-effect relationship between socioeconomic status and academic achievement. The chapter includes the research questions, null hypotheses, data screenings, descriptive statistics, assumption testing, and results.

Research Questions

RQ1: How accurately can academic achievement be predicted by early childhood social-emotional scores for elementary students?

RQ2: Is there a statistically significant difference in MAP scores between PIP students and non-PIP students for elementary students?

Null Hypotheses

$H_0$1: There is no significant predictive relationship between academic achievement and early childhood social-emotional scores for elementary students as measured by MAP reading scores and the ASQ:SE-2 questionnaire.

$H_0$2: There is no statistically significant difference in MAP scores between PIP students and non-PIP students for elementary students.

Descriptive Statistics

Descriptive statistics for the predictor variable for the first research question, social-emotional scores, and the criterion variable, academic achievement, are indicated in Table 1. The sample consisted of 70 participants. Student MAP reading scores determined academic achievement which were obtained from the school district. Social-emotional scores were obtained from the ASQ:SE-2 questionnaires received from participants. Raw data for MAP reading scores were converted to Z-scores to calculate the probability of the score occurring within the normal distribution. Descriptive statistics can be found in Table 2.

Table 2

Descriptive Statistics for Academic Achievement (MAP) and Social-Emotional Scores (ASQ)

	N	*M*	*SD*
ASQ	70	52.64	42.00
MAP	70	194.77	16.85
Valid N (listwise)	70		

Descriptive statistics for the second research question are found in Table 3. The sample consisted of 70 participants. Student MAP reading scores determined academic achievement and student SES status was determined by their PIP indicator, both obtained from the school district. The independent variable in the Mann-Whitney U test is the PIP indicator, and the dependent variable is MAP reading scores.

Table 3

Descriptive Statistics for Academica Achievement (MAP) and PIP

	PIP			Statistic	*SE*
Zscore(MAP)	No (0)	Mean		.40	.10
		95% Confidence Interval for Mean	Lower Bound	.18	
			Upper Bound	.61	
		5% Trimmed Mean		.42	
		Median		.55	
		Variance		.37	
		Std. Deviation		.61	
		Minimum		-1.11	
		Maximum		1.32	
		Range		2.43	
		Interquartile Range		.89	
		Skewness		-.66	.40
		Kurtosis		-.20	.79
	Yes (1)	Mean		-.32	.19
		95% Confidence Interval for Mean	Lower Bound	-.71	
			Upper Bound	.06	
		5% Trimmed Mean		-.30	
		Median		-.28	
		Variance		1.26	
		Std. Deviation		1.12	
		Minimum		-3.0	
		Maximum		1.80	
		Range		4.75	
		Interquartile Range		1.66	
		Skewness		-.33	.40
		Kurtosis		-.02	.78

Results

Two hypotheses were tested in this study. First, the researcher sought to determine if there was a significant predictive relationship between early childhood social-emotional scores

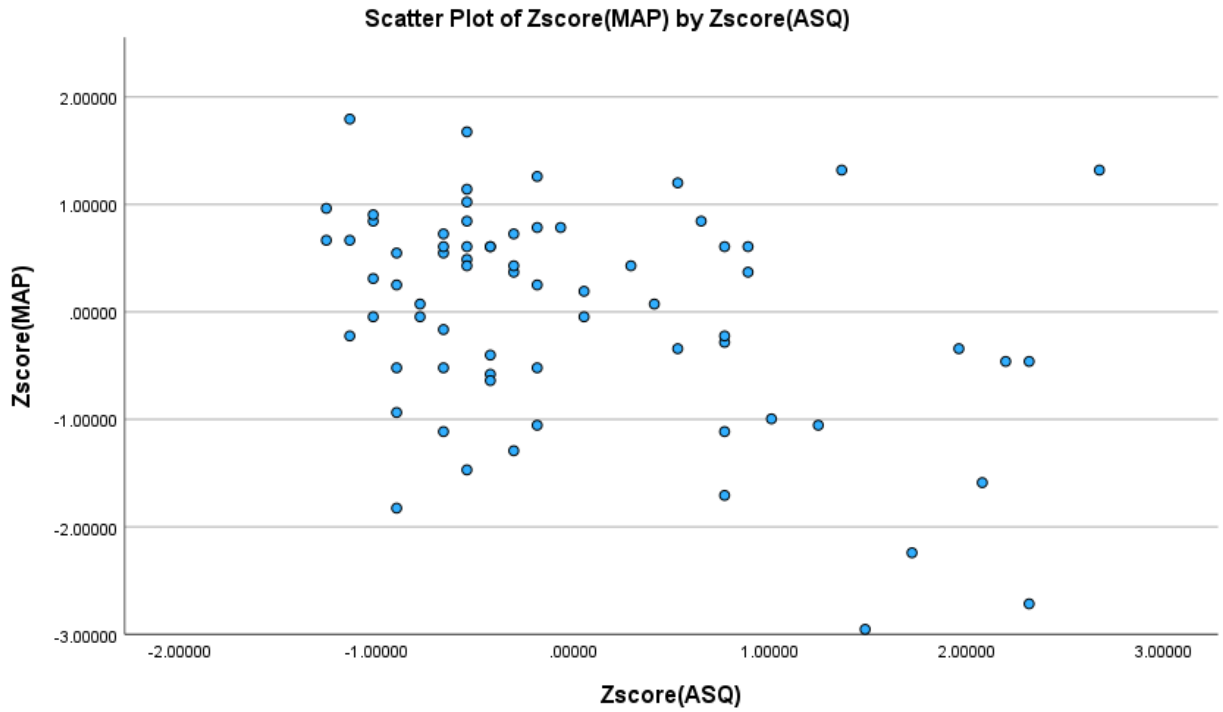
and academic achievement. Second, the researcher sought to study the impact of a student's PIP indicators on academic achievement.

Hypothesis 1

The researcher sorted the data and scanned for inconsistencies in each variable. No data errors or inconsistencies were identified. A scatter plot was used to detect bivariate outliers between the predictor variable and the criterion variable. No significant bivariate outliers were identified. See Figure 1 for the scatter plot.

Figure 1

Linear Relationship Between Academic Achievement (MAP) and Social-Emotional Scores (ASQ)



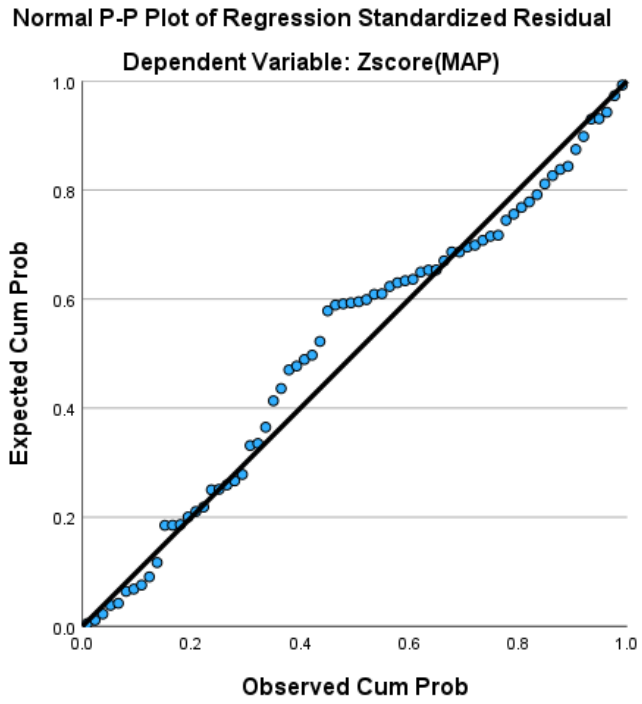
Assumptions for RQ1

A bivariate linear regression was run to determine if early childhood social-emotional scores could predict academic achievement for elementary school students. To assess linearity, a scatterplot of both the criterion and predictor variables was plotted. Visual inspection of these

two plots indicated a negative linear relationship exists. There was homoscedasticity and normality of the residuals as assessed by visual inspection of a normal probability plot (see Figure 2). Casewise diagnostics determined that there were no detected outliers seen in Figure 1 and there was independence of residuals as assessed by a Durbin-Watson statistic of 1.78.

Figure 2

P-Plot for Academic Achievement (MAP) and Social-Emotional Scores (ASQ)



Data Analysis for Hypothesis 1

A bivariate regression was conducted to see if social-emotional scores could predict academic achievement. The predictor variable was social-emotional scores. The criterion variable was academic achievement. The researcher rejected the null hypothesis at the 95% confidence level where $F(1, 68) = 10.04$, $p < .002$ (see Table 4). As such, social-emotional scores statistically significantly predicted academic achievement.

Table 4

Regression Model

ANOVA[a]

Model		*SS*	*df*	MS	*F*	Sig.
1	Regression	8.88	1	8.88	10.04	.002[b]
	Residual	60.12	68	.88		
	Total	69.00	69			

a. Dependent Variable: Zscore(MAP)
b. Predictors: (Constant), Zscore(ASQ)

The model's effect size was medium where $R = .36$. Furthermore, $R^2 = .13$ indicates that social-emotional scores accounted for 12.9% of the variation in academic achievement with adjusted $R^2 = 11.6\%$, a medium size effect according to Cohen (1988), can be explained by the predictor variable. See Table 5 for model summary.

Table 5

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.36[a]	.13	.12	.94	1.78

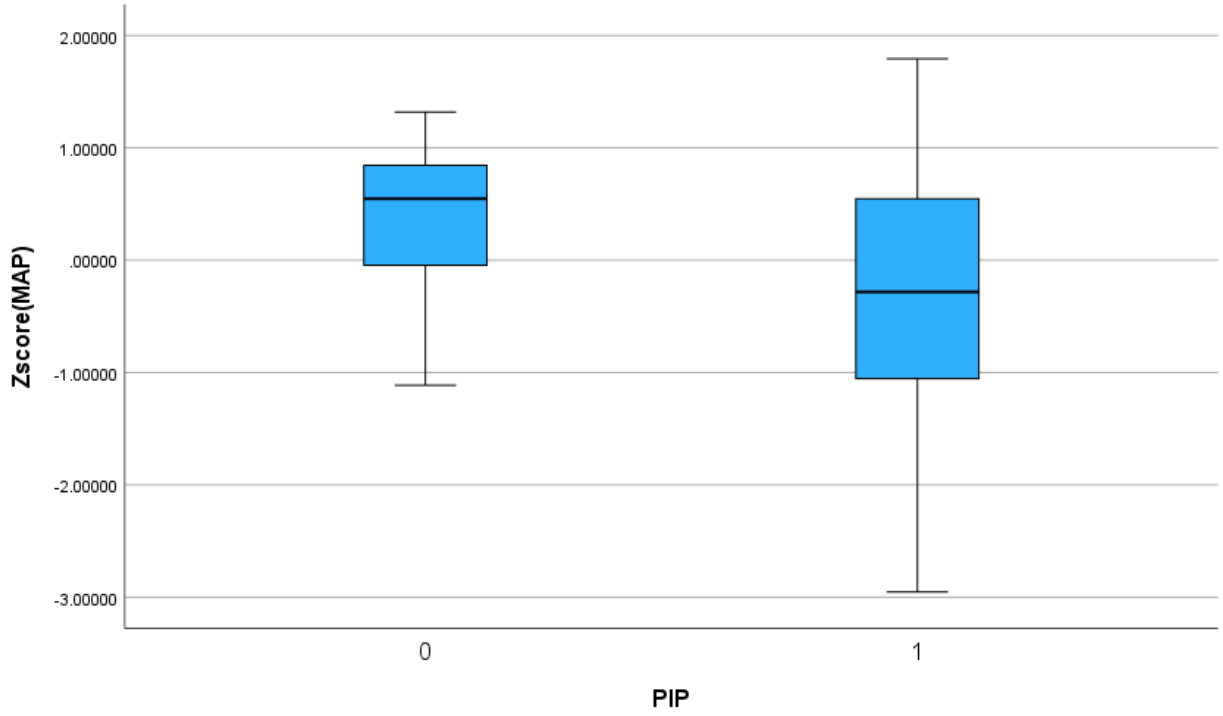
a. Predictors: (Constant), Zscore(ASQ)
b. Dependent Variable: Zscore(MAP)

Hypothesis 2

The researcher sorted the data and scanned for inconsistencies in each variable. No data errors or inconsistencies were identified. A Box and Whisker plot was used to detect outliers between the independent variable and the dependent variable. One extreme outlier was identified, analyzed, and removed as the goal of the research was to generalize the findings to a larger population (Gall et al., 2007). See Figure 3 for the box plot.

Figure 3

Box and Whisker Plot for Academic Achievement (MAP Reading) and SES (PIP indicator)



Assumptions for RQ2

Originally, a bivariate linear regression was run to determine the predictability of PIP status on academic achievement; however, assumptions were not met, and the research design was changed to a causal-comparative for the second research question. Since there was no homogeneity of variances, as assessed by Levene's test for equality of variance (p = .004), a nonparametric test was run to determine if there were differences between the two variables. A point-biserial correlation was also run but did not meet assumptions; therefore, a Mann-Whitney U test was run to determine if there were differences in engagement scores by PIP status. The assumptions that must be met for a Mann-Whitney U test are that the independent variable is continuous, the dependent variable is categorical, there must be independence of observations, and the dependent variable has similarly shaped distributions of the independent variable. A

visual inspection of the descriptive statistics showed that these assumptions were met and this was the appropriate test to conduct. The distribution of engagement scores was similar, as assessed by visual inspections. The researcher rejected the null hypothesis with $U = 385.5$, $z = -2.67$, $p = .004$, using an exact sampling distribution for U (Dineen & Blakesly, 1973). As such, there was a significant difference in academic achievement between the engagement scores for those who did not receive PIP (.55) and those who did (-.28).

CHAPTER FIVE: CONCLUSIONS

Overview

Chapter Five provides a summary of the results as well as a discussion regarding the connections this study has to previous studies and existing literature. The research questions, null hypotheses, and results are discussed in association with previous studies. Likewise, limitations of the present study are identified and provide future research implications. Suggestions for further research based on the findings in this study are also included.

Discussion

The discussion section is divided into two parts. First, the results for RQ1 are discussed. Second, the results for RQ2 are discussed. The purpose of this quantitative predictive correlational research study is to determine if there is a significant predictive relationship between early childhood social-emotional scores as measured by the ASQ:SE-2 questionnaire and academic achievement determined by fall MAP reading scores. The first research question explored the predictive relationship between a fourth-grade students fall MAP reading score taken during the third-grade school year and social-emotional scores. The first null hypothesis stated that there is no significant predictive relationship between academic achievement and early childhood social-emotional scores for elementary students. The researcher rejected the null hypothesis because social-emotional scores statistically significantly predicted academic achievement, $F(1, 68) = 10.04$, $p = .002$. The linear regression showed a negative slope determining that as social-emotional scores increased, MAP reading scores decreased.

The theoretical framework developed by Piaget (1952) and Vygotsky (1978) followed by numerous studies related to the foundations of those theories support the impact a child's normal development ranges and emotional state has on one's learning ability (Kewalramani et al., 2022;

Murano et al., 2020; Saracho, 2023; Schoon et al., 2021). The theory of development (Piaget, 1952) promotes developmental stages of learning that can be impacted by a child's social environment. Social cognitive theory (Vygotsky, 1978) argues that environmental factors like early exposure to either learning experiences or adversity can impact a child's cognitive development. The literature suggests that when either a child's developmental stages or cognitive development are disrupted, deficits form that impact social-emotional competence and academic achievement (Collie, 2020; Pooch et al., 2019; Schneider et al., 2022). The present study supports this framework as a negative correlation exists in which high social-emotional scores on the ASQ:SE-2 questionnaire resulted in lower academic achievement in MAP reading scores. Similarly, students with a PIP indicator scored lower on MAP reading than those students without a PIP indicator.

Like previous studies, this study determined that there was a predictive relationship between social-emotional factors and academic achievement (CASEL, 2024; Murano et al., 2020; Pooch et al., 2019). Learning and development are shaped from an early age and SEC progresses through exposure to cultural experiences or a child's societal norms (Bjorklund, 2022; Cade et al., 2022; Jukes et al., 2021). The present study focused on SEC developed by age five and the predictive relationship this had on academic achievement. A negative slope in linear regression between social-emotional scores and academic achievement found in the present study supports other research findings that social-emotional deficits impact academic achievement (Bjorklund, 2022; Mahoney et al., 2021; Murano et al., 2020).

Some studies have produced different results about social-emotional competence and academic achievement (Hennessey & Humphrey, 2020; Hunter et al., 2020). Hennessey and Humphrey (2020) conducted research utilizing a specific SEL implementation program to

improve academic achievement. Their study focused on the improvement of academic achievement rather than the predictive correlation between SEL and academic achievement. Similarly, the study conducted by Hunter et al. (2020) showed improvement in SEC when exposed to SEL implementation, but this had no significant difference in improving academic achievement. It is important to note that students completed the SEC measurement tool and academic achievement focused on engagement and motivation. This is important to note as the current study obtained SEC information from parents for social-emotional scores and focused on academic testing outcomes using fall MAP reading scores.

The researcher also sought to study the impact of a student's PIP indicators on academic achievement. The second null hypothesis stated that there is no statistically significant median difference in MAP scores between PIP students and non-PIP students for elementary students. The researcher rejected the null hypothesis as median engagement scores for no (204) were significantly higher than for yes (190), $U = 352.5$, $z = -2.912$, $p = .004$, using an exact sampling distribution for U (Dineed & Blakesly, 1973). The results of the study produced similar results to previous studies indicating that there is a statistical relationship between early childhood social-emotional scores, SES, and academic achievement (Armstrong-Carter et al., 2021; Lechner et al., 2021; Murano et al., 2020; Wright & Steed, 2021).

Furthermore, several research studies yielded results supporting the findings in the current study that there is a significant difference in academic achievement between students with lower SES in comparison to students with higher SES (Guhn et al., 2020; Ming et al., 2021). Guhn et al., 2020 determined there was a relationship between a family's SES and birth factors resulting in poor emotional development and low academic achievement. Similarly, Ming et al. (2021) determined that low SES was related to a child's cognitive flexibility and students

with lower SES performed worse in areas of executive functioning than those with higher SES. Like the study conducted by Ming et al. (2021), where low SES resulted in lower executive function and lower cognitive flexibility, the present study concluded that low SES resulted in lower MAP scores.

There are also research studies that focused on the impact SES has on SEL, which has been linked to academic achievement (CASEL, 2024). Research conducted by Ramanathan et al. (2021) showed no statistically significant association between financial stress and socio-emotional skills; however, the study did find that students with lower SES did not perform academically as those with higher SES. The population for this study focused on financial stress brought on by unemployment or job loss rather than a variety of factors. It is important to note this as the present study looked at a student's PIP indicator to determine SES status which includes several determining factors related to socioeconomic status as opposed to just unemployment or job loss. Although much of the literature does not focus on the impact SES has on academic achievement, some studies have linked low SES to SEC deficits in young children which have been shown to impact academic achievement (Jiang et al., 2020; Sánchez-Núñez et al., 2020).

Implications

There are a plethora of studies that focus on intervention programs and implantation strategies to support SEL in older children, but there has been little focus on SEC deficits from an early age to promote prevention (Collie, 2020; Murano et al., 2020; Pooch et al., 2019). Furthermore, there is a heavy focus on school-wide approaches to SEL rather than a targeted approach geared to serving at-risk students who are more likely to develop SEC deficits due to low SES (Blewitt et al., 2021; Justicia-Arráez et al., 2021; Murano et al., 2020). Finally, the

literature suggests that a targeted approach to SEC deficits produces better outcomes and should focus on early diagnosis and prevention as opposed to intervention later in life (Murano et al., 2020). The results of the current study add to the existing literature that supports there is a predictive correlation between academic achievement and early child social-emotional scores. It also supports the existing literature in showing that there is a statistically significant difference in academic achievement between students with SES challenges and those without (Ming et al., 2021; Ramanathan et al., 2021).

Additionally, this study focused on social-emotional scores at an early age to predict future academic achievement outcomes as discussed in Murano et al.'s (2020) meta-analysis of SEL intervention programs. The results of the current study also provided data that coincides with the theoretical framework of Piaget's theory of development and Vygotsky's social cognitive theory (Colliver & Veraksa, 2021; Schunk, 2020; Smith, 2020). Developmental delays and exposure to various social environments have an impact on a child's ability to learn and grow cognitively, yet limited research focused on the impact this has on academic outcomes and the pedagogical needs of young learners (Colliver & Veraksa, 2021; Comaskey & Eith, 2022; Laura & Scarzello, 2021; Singer & Wong, 2021). Reading comprehension has also been shown to be a cognitive learning issue and low academic achievement could be the result of SEC deficits (Blewitt et al., 2021; Hendricks & Fuchs, 2020). Early intervention and a targeted approach to that intervention based on preschool screening measures for SEC deficits could be the catalyst to academic achievement for all students.

Likewise, this study focused on the factors that determine low SES status in the school system and connected those factors to academic achievement as suggested in previous research studies (Heberle & Carter, 2020; Jukes et al., 2021; Schoon et al., 2021). The results of this study

added to the body of literature in connecting SES to academic achievement outcomes by showing that academic achievement was lower for at-risk students who are identified as having a PIP indicator in the school system.

Since this study did not elicit enough participants to conduct a multiple linear regression, an analysis of the contribution early childhood social-emotional scores and SES have on academic performance could not be determined. Similarly, this study did not test the predictive relationship between early childhood social-emotional scores and SES as these were the predictor/independent variables for this study. However, this study provides stakeholders, policymakers, government officials, and educators with information to guide them in evaluating current SEL implementation programs and possible targeted intervention approaches for students with low SES or low academic performance outcomes. Additionally, this study provides possible research topics for future research.

Limitations

Limitations were identified in this study. The limitations include sample size and validity of survey responses. Although six elementary schools were approved by the school district to participate in this study, most of the parent survey respondents came from three out of the six schools. Similarly, the initial sample size was to be 107 participants to complete a multiple regression research design; however, the researcher was only able to collect data from 70 participants. Due to this, the research design changed and resulted in a nonparametric test being run and a change made to the second research question.

The results of this study also question the validity of the ASQ:SE-2 questionnaire as parents filled out the information concerning their child when they were at age five even though their current child was in the fourth grade. This required parents to think back four or five years

which could have been difficult to remember. Likewise, since the questionnaire was filled out online, there is no way to know if parents filled out information for their child at the current age or age five. This could have created inconsistencies in the data resulting in skewed results. Every effort was made to ensure that participants understood that the questionnaire information was to be completed in regard to their child at age five with notes made on every question in the online questionnaire reminding participants of this criteria.

Recommendations for Future Research

- Future research needs to include a larger sample size across multiple schools to run other data analysis tests to determine the strength of the relationship between the variables.
- Future research should look at the correlation between the two independent variables of early childhood socioeconomic scores and SES to determine the predictability of SES on SEC scores.
- Future research should focus on pre-kindergarten social-emotional screeners to determine best practices for SEL interventions.

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APPENDICES

Appendix A

BROOKES PUBLISHING CO

Paul H. Brookes Publishing Co., Inc.
Post Office Box 10624, Baltimore, Maryland 21285-0624

TO: Denise Ashley

RE: Permission to reproduce the 60-month questionnaire from ASQ®:SE-2, for use in research

INVOICE #: [redacted] *(Reference this number in all correspondence and with payment.)*

PERMISSION AGREEMENT

This Permission Agreement ("Agreement") is made this 25th day of September, 2023 by and between Paul H. Brookes Publishing Co., Inc., of P.O. Box 10624, Baltimore, Maryland, 21285, U.S.A., a body corporate, incorporated under the laws of the State of Maryland, U.S.A. ("Brookes"), of the one part, and [redacted], of the other part.

Brookes is in receipt of Ashley's request to electronically program and use in research:

a. the 60-month questionnaires from the **Ages & Stages Questionnaires®: Social-Emotional, Second Edition (ASQ®:SE-2): A Parent-Completed Child Monitoring System for Social-Emotional Behaviors**, Squires, Bricker, and Twombly ("Questionnaire")

The permission granted below and by this Agreement is only for the use of the 1 ASQ:SE-2 Questionnaire, in English, described above, and does not apply or extend to any other ASQ:SE-2 questionnaires and/or Ages & Stages Questionnaires, Third Edition (ASQ®-3) questionnaires or any other items from the Ages & Stages Questionnaires® product line. Ashley must request and receive permission from Brookes to electronically program, translate, adapt, and/or use any other portion or product of ASQ:SE-2 and/or ASQ-3.

Brookes grants Ashley non-exclusive, non-transferable permission to make an electronic format of the Questionnaires for one time, not for profit, limited use in the research study titled "Exploring the Predictive Relationship Between Academic Achievement, Early Childhood Social-Emotional Scores, and Socioeconomic Status" ("Study"), provided that Ashley accepts the following terms and conditions, which also apply to the Study investigators and all staff associated with the Study:

1. OWNERSHIP OF ASQ MATERIALS For this permission to be valid, Ashley must own at least 1 ASQ®:SE-2 Starter Kit (ISBN 978-1-59857-956-7). In fulfillment of this requirement, Ashley provided to Brookes proof of purchase in the form of a receipt from Brookes Publishing dated September 18, 2023, Order #85083. Use of the Kit must follow the Photocopying Release and End User License Agreement that accompany the Kit.

2. PROVISION OF FILES Once this Agreement has been signed by both Ashley and Brookes and upon Brookes's receipt of the permission and provision of files fee (see Paragraph 8), Brookes shall provide to Ashley the electronic files of the ASQ:SE-2 illustrations (see Paragraph 3.b) and logo (see Paragraph 4).

3. ELECTRONIC FORMAT Ashley may make an electronic format of the Questionnaire, specifically and only a secure, password protected Microsoft Forms survey system ("Electronic Format") that only Study investigators, staff, and participants may access.

   Prior to use of the Questionnaire in the Electronic Format, Ashley shall ensure that:

   a. No ASQ:SE-2 content or administration procedures (for illustrative example, but not a comprehensive list, wording of items; instructions for administration and scoring protocols; use of the Information Summary sheet; adjustments for prematurity) are changed in the Electronic Format without Brookes's prior knowledge and written approval.

[redacted]

b. Illustrations will accompany the items in the Electronic Format as they appear in the 60-month Questionnaire.
c. Brookes is under no obligation to any third parties or owners of software that may be used in the creation of the Electronic Format, nor are any third parties granted any rights to ASQ, by granting Ashley the permission described herein.

4. USE OF TRADEMARKS AND LOGO Ashley:
   a. Will use the trademarks and logo shown below ("Trademarks and Logo") in the Electronic Format, to accompany the Questionnaire:

      Ages & Stages Questionnaires® ASQ®:SE-2 ASQ:SE-2

   b. Agrees that using the Trademarks and Logo does not give Ashley any ownership interest.
   c. Will not use the Trademarks and Logo for any purposes other than those described in this Agreement.
   d. May not change, alter, translate, adapt, or replace the Trademarks and Logo in any way.

5. CREDIT LINE Ashley will include the following statement on every screen within the Electronic Format where the Questionnaire is included, as well as on any electronic and/or paper report generated from the Electronic Format in which the Questionnaire is included or referenced, as follows:
   Ages & Stages Questionnaires®: Social-Emotional, Second Edition (ASQ®:SE-2): A Parent-Completed Child Monitoring System for Social-Emotional Behaviors, Squires and Bricker

6. USE OF QUESTIONNAIRE IN STUDY As detailed below, Ashley may use and distribute the Questionnaire in the Electronic Format, only as part of the Study, at seven sites throughout the [redacted] through August 31, 2024, with approximately 107 children.
   a. Ashley may not make any changes to the Questionnaire, except to adapt it from print format to electronic format as described in Paragraph 3 above or with explicit written permission from Brookes.
   b. Ashley may distribute electronic copies of the Questionnaire as follows: approximately 107, but no more than 117, copies of the Questionnaire to be completed during the Study.
   c. Ashley will distribute the electronic copies of the Questionnaire and the Electronic Format to Study participants free of charge.

7. COMPLIANCE Ashley represents that, as may be applicable, the Electronic Format shall be compliant with the Health Insurance Portability and Accountability Act of 1996 (HIPAA), the Health Information Technology for Economic and Clinical Health Act of 2009 (HITECH), the Family Educational Rights and Privacy Act (FERPA), and other relevant national and local laws. Brookes shall not under any circumstances be held liable for any use or misuse of the Electronic Format, intentional or otherwise, by Ashley and/or the Study investigators, staff, and/or participants, that violates HIPAA, HITECH, FERPA, and/or applicable federal, state, and local laws.

8. PERMISSION & PROVISION OF FILES FEE In exchange for the permission granted herein, including the use of the Trademarks and Logo, as well as the provision of files, a non-refundable **fee of US$265.00**. Payment must be made in U.S. dollars, drawn on a U.S. bank and reference the above invoice number.
   a. **The fee must be paid in full by October 31, 2023. If payment is not received by the date indicated, the permission granted herein shall be automatically revoked.**
   b. Make a check payable to Paul H. Brookes Publishing Co., Inc. [redacted]
   c. Or payment may be made by wire transfer; contact [redacted]. If making payment by wire transfer, deductions of any kind are the responsibility of the payee.

9. ADDITIONAL PERMISSION If more time (in other words, beyond August 31, 2024) and/or more electronic copies of the Questionnaires (in other words, more than the number of electronic copies permitted in Paragraph 6.b) is needed to complete the Study, Ashley shall write to Brookes to request additional time and/or electronic copies. Brookes and Ashley shall agree upon the extension needed, and a

fee may be assessed. Otherwise, **this Agreement shall automatically expire after August 31, 2024, or when the number of electronic copies permitted** in Paragraph 6.b are made, whichever comes first.

10. NON-EXCLUSIVE, NON-TRANSFERABLE, ONE-TIME PERMISSION (See Page 1.)
    a. "Non-exclusive" means that Brookes may allow at any time other persons, organizations, and/or companies to make and use electronic versions of part or all of the Questionnaire and/or other items in the ASQ product line.
    b. "Non-transferable" means the permission described in this Agreement is only for Ashley. Ashley may not give this permission to another person, organization, or company unless Brookes provides that approval in writing.
    c. "One-time" means that Ashley may use the Questionnaire in and for the single Study described above.

11. INTELLECTUAL PROPERTY. All intellectual property associated with ASQ:SE-2 and the Questionnaire are held by Brookes. All rights not explicitly described in this Agreement are retained by Brookes; however, Brookes holds no rights to data collected with the Questionnaire and/or the Electronic Format for and during the Study.

To indicate agreement to the terms and conditions outlined above, sign and date below, and return 1 copy to Brookes. Brookes shall review and countersign and provide a copy of the fully executed Agreement.

Appendix B

Permission to Use Instrument

Thu 7/20/2023 9:40 AM

To:Ashley, Denise Ann [redacted]

Cc:[redacted]

[EXTERNAL EMAIL: Do not click any links or open attachments unless you know the sender and trust the content.]

Hi Denise,

Thank you for your email. Purchasers of the ASQ:SE-2 Starter Kit may use paper copies of the questionnaires in accordance with the End User License Agreement and Photocopying release that accompany that questionnaires without any further written permission from Brookes Publishing. If you wish to adapt the questionnaires in any way (including but not limited to translation into another language or programming into a secure survey system such as Qualtrics or REDCap) then written permission from Brookes Publishing is required. Please write to [redacted] if you will need permission to adapt ASQ:SE-2 for use in your study.

At the end of your study, you may publish the data collected with ASQ:SE-2 and the study results. You may not publish Questionnaires or the text of ASQ:SE-2 items (that is, Brookes's intellectual property) without written permission from Brookes Publishing. If you'll need permission, please email [redacted]

Please do not hesitate to reach out with any other questions.

Thank you,

[redacted]

Rights & Licensing Manager

Brookes Publishing Co. [redacted]

Appendix C

School District Approval Notice

July 27, 2023

Ms. Denise Ashley
[redacted]

Research Project: Exploring the predictive relationship between academic achievement, early childhood social emotional scores and socioeconomic status.

Dear Ms. Ashley,

Thank you for your application to conduct research in [redacted]. Your application has been reviewed including your proposal outline, evidence of completion of Human Subjects training, and initial letter of informed consent.

This letter confirms that you are approved to begin your research once you have obtained Institutional Review Board approval.

It will also be necessary to obtain the final consent and cooperation of the Area 1 building level Principals prior to the commencement of your research. These include:

- [redacted]

We look forward to working with you and will help facilitate anything you may need to complete your data collection and research including interim assessment data without personally identifiable information.

Thank you for your patience during the application review process.

Sincerely,

[redacted]
Director
Office of Accountability and Assessment

Appendix D

Date: 9-25-2023

IRB #: IRB-FY23-24-294
Title: Exploring the Predictive Relationship between Academic Achievement, Early Childhood Social-Emotional Scores, and Socioeconomic Status
Creation Date: 8-18-2023
End Date:
Status: Approved
Principal Investigator: [redacted]
Review Board: Research Ethics Office
Sponsor:

Study History

Submission Type	Review Type	Decision
Initial	Exempt	Exempt

Key Study Contacts

Member [redacted]	Role Co-Principal Investigator	Contact [redacted]
Member [redacted]	Role Principal Investigator	Contact [redacted]
Member [redacted]	Role Primary Contact	Contact [redacted]

Appendix E

Information Sheet

Title of the Project: A Predictive Correlation and Causal-Comparative Study on Early Childhood Social-Emotional Scores, Socioeconomic Status, and Academic Achievement
Principal Investigator: _____, Doctoral Candidate, School of Education, Liberty University

Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must have a fourth-grade student enrolled in _____ County Public Schools who has completed both MAP reading assessments during their third-grade school year. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

What is the study about and why is it being done?

The purpose of the study is to explore whether a child's socioeconomic status or social-emotional development during early childhood can predict academic achievement.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following:

1. Take approximately 15-20 minutes to answer questions on the Ages & Stages Questionnaires: Social-Emotional, Second Edition to evaluate your child's social-emotional competence.
2. Allow me to obtain your child's data from the MAP reading and math assessments as well as SC Ready data and PIP information.

How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include addressing the research gap and providing information as to the possible prevention of children's low academic achievement outcomes.

What risks might you experience from being in this study?

The expected risks from participating in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

The records of this study will be kept private. Published reports will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records.

- Participant responses to the online questionnaire will be kept confidential by replacing names with pseudonyms.
- Data may be used in future presentations. If data collected from you is reused or shared, any information that could identify you, if applicable, will be removed beforehand.
- Data will be stored on a password-locked computer and/or in a locked cabinet. After five years, all electronic records will be deleted, and/or all hardcopy records will be shredded.

How will you be compensated for being part of the study?

Participants will not be compensated for participating in this study.

Is the researcher in a position of authority over participants, or does the researcher have a financial conflict of interest?

The researcher serves as a teacher in _____ County School District. To limit potential or perceived conflicts, data collection will be confidentially obtained, and pseudonyms administered so the researcher will not connect specific students to the data received. The researcher will ensure that all data is stripped of identifiers before analyzing the data. This disclosure is made so that you can decide if this relationship will affect your willingness to participate in this study. No action will be taken against an individual based on his or her decision to participate or not participate in this study.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University or _____ County Public School. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study before submission, please exit the survey and close your internet browser. Your responses will not be recorded or included in the study.

If you choose to withdraw from the study after submitting the survey, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you will be destroyed immediately and will not be included in this study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study _____. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at _____. You may also contact the researcher's faculty sponsor, _____, at _____.

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the IRB. Our physical address is Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA, 24515; our phone number is 434-592-5530, and our email address is irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.