7-2020

# Long-Term Impact of Child-Centered Play Therapy on Academic Achievement: A Longitudinal Examination of Academic Success in At-Risk Elementary School Students

Brittany D. Massengale
*University of Arkansas, Fayetteville*

Long-Term Impact of Child-Centered Play Therapy on Academic Achievement: A Longitudinal Examination of Academic Success in At-Risk Elementary School Students

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in Counselor Education

by

Brittany D. Massengale
Rice University
Bachelor of Arts in Kinesiology and Psychology, 2009
Southern Illinois University
Master of Education in Social Psychology of Sport, 2012
University of Arkansas
Master of Science in Counseling, Clinical Mental Health, 2017

July 2020
University of Arkansas

This dissertation is approved for recommendation to the Graduate Council.

_____
Kristi Perryman, Ph.D.
Dissertation Director

_____
Paul Blisard, Ed.D.
Committee Member

_____
Kristin Higgins, Ph.D.
Committee Member

_____
Lisa Bowers, PhD.
Committee Member

_____
Samantha Robinson, Ph.D.
Committee Member

**ABSTRACT**

This study examined the long-term impact of child-centered play therapy (CCPT) implemented through Primary Project on at-risk second-grade elementary school students. The qualifying group received ten 30-minute play therapy sessions during one academic semester during their second-grade year. In a longitudinal analysis for academic growth, MAP testing was used to determine if there was a long-term impact on both the third grade and fourth-grade years for the original qualifying students. The findings reveal implications for identification of and interventions for at-risk elementary students and CCPT as an intervention for academic achievement; specifically, reading and mathematics scores. Recommendations for future research are also included.

# ACKNOWLEDGEMENTS

Many individuals have played significant roles in my education, my growth, my direction, and the completion of this doctoral program. My sincerest thanks, appreciation, and gratefulness cannot be truly conveyed through words for those who have supported me during this journey. To my logical and biological families, thank you for your continued support, encouragement, and listening ears as I externally processed the various aspects of this program and my dissertation, as well as my zealous discussions about the counseling profession. You all helped me find my voice and my passion for the field and my future. E.H. and J.K., people heal the moment they feel heard and accepted. I could not have come this far without your support, acceptance, and integral roles you each played on my healing journey. Thank you.

To my committee: Dr. Blisard, thank you for your teaching and clinical mentorship. You have inspired me to delve deeper into neuroscience and appreciate how it relates to and informs counseling practice both clinically and in the classroom. I believe understanding how the brain develops and works could be the missing link between mental health interventions and academic improvement. Dr. Higgins, thank you for believing in me and my capacity to make a positive impact on this field as a clinician, a researcher, a supervisor, and instructor. You have given me numerous opportunities to further my learning and enhance my experiences that will be of great benefit in my future as a counselor educator. Dr. Robinson, thank you for challenging me to get out of my quantitative research comfort zone and for introducing me to new statistical analyses and research designs. You have helped to build the foundation for my future research agenda and I am grateful for your mentorship. Dr. Bowers, you were the first person I mentioned this dissertation idea to and you helped to foster and nurture it into its completion. Your support and encouragement were invaluable to this process and your excitement for this project was

contagious!  Dr. Perryman, thank you for investing in my personal and professional development throughout my studies. I am a better clinician, supervisor, instructor, and researcher due to working with and learning from you. Thank you for introducing me to play therapy and helping me find my niche in this profession. You believed in me far before I did and you never gave up on me during this journey. I am forever grateful.

I want to express my sincere appreciation for the rest of the CNED faculty at the University of Arkansas. Each of you has positively impacted my growth and development throughout this journey. Thank you for challenging and encouraging me, providing a soft place to land, and allowing me to be genuine and vulnerable along this wild ride.

A special thanks to S.G. and this local elementary school. Your help was invaluable with collecting and organizing data and I am thankful beyond words. Also, you all trusted us to implement Primary Project and provide services to your students. I hope you all feel the positive impact of this endeavor and experience the benefits on a daily basis. M.H. and D.R. – you all provided the CCPT services via Primary Project to these students during the intervention year. The impact you had on these students may never be fully understood; however, I hope you both always remember the incredible impact caring relationships have on children and the power of play. This study would not have been possible without your services to these students in need. Dr. McKenzie, thank you for sharing your MAP assessment expertise, feedback, and excitement about this study and its results.

To my best friend, my confidant, my sunshine, and my partner in all things: Cameron, you provided so much love, encouragement, support, laugher, perspective, and guidance during this process. I am forever grateful for you and the joy you bring to my life. Here's to our next great adventure together!

# DEDICATION

To my father who left this world far too soon: I am thankful that you shared your love and passion for education and teaching others in ways they could best learn with me. Growing up, I never had the desire to teach; however, I have found my niche in the world and now look forward to the opportunity to impact students through counseling services or through counselor education and development each and every day. You have taught me to both plant and nurture seeds for the lifelong growth in others, and it is an honor to carry on your passion for teaching and impacting others through academia and research.

Before almost every race in my swimming career, you encouraged me to "be aggressive" and that message has left a lasting impact on my life. Be aggressive, not toward or in competition to others, but in the betterment of my very being each day. Be aggressive in the pursuit of connection and caring for others, as it is the cornerstone for development and growth for students, clients, supervisees, and those with whom we have the privilege of being in relation. Be aggressive in engagement and belief in others to attain their goals, to mature, to move forward on the path of becoming. Be aggressive in the development of a safe space for others to be vulnerable and genuine on their healing journey. Be aggressive and dedicated to reaching personal goals and dreams while also honoring the struggles and triumphs along the way.

This one is for you, Tmass, my Daddypap, my inspiration. And yes, this graduation will finally be the one where I will get to wear the "funny hat" (i.e., doctoral tam) with my regalia. I love you and miss you more than words can words can convey.

# TABLE OF CONTENTS

## List of Figures

## List of Tables

# CHAPTER 1: INTRODUCTION

The purpose of this initial chapter is to introduce the problem to be addressed by the study and the study's overall purpose. Additionally, the central research questions are outlined, major terms are defined, and a brief overview of the proposed dissertation is provided.

## Statement of the Problem

In 2000, the Surgeon General's report addressing children's mental health stated that over four million children suffer from mental illnesses (U.S. Public Health Service, 2000) and in 2009, the National Health Policy Forum (Frank et al., 2009) indicated that one in five children meet the criteria for a diagnosable disorder for psychological or behavioral issues. One in seven children between two and eight years of age were reported as having a diagnosed developmental, behavioral, or emotional disorder according to the 2011-2012 National Survey of Children's Health from the Center for Disease Control and Prevention (Bitsko et al., 2016). This gives way to concern for reports from the American Academy of Child and Adolescent Psychiatry posit that only 15-25% of children with psychiatric disorders receive the mental health services they need (Martini & Sénéchal, 2012). With understanding the troubling, and often tragic, impact that mental health disorders have on the lives of children and their families, the rate of mental health issues in children has been described as a public health crisis (U.S. Public Health Service, 2000). Therefore, increasing knowledge, research, and recognition of the impact of mental health disorders has on academic outcomes, future social and emotional struggles, substance use, child welfare, and delinquent behavior has resulted in significant attention to children's mental health (Blanco et al., 2019; Mellin, 2009).

Beginning in the late 1970s, educators began to focus on the "education of the whole child" (Elias, 2006, p. 5) and started including aspects of social-emotional learning (SEL) within

the school system. Including character education, service-learning, citizenship education, and emotional intelligence in academic learning, educators captured the balance that children need in school (Elias, 2006). Many SEL programs were implemented into schools across the nation and found success in behavioral issues and academic success. Main themes from educators, administrators, and students highlighted the importance of community, belongingness, forming caring relationships, and feeling valued as a learner (Earl et al., 1996; Elias, 2006; Elias & Arnold, 2006; Kriete & Bechtel, 2002; Lewis et al., 1996; O'Neil, 1997; Osterman, 2000).

Despite the academic success in schools implementing SEL programs from the 1970s to early 2000s, the No Child Left Behind Act (NCLB) grew out of concern that the American education system was no longer internationally competitive (Klein, 2015). Consequently, NCLB was signed into law in 2002 and significantly increased the federal role in holding schools responsible for the academic progress of all students (Klein, 2015). Overall, states were required to bring students to the proficient level and states not making consistent adequate yearly progress (AYP) risked losing federal Title 1 funds (Klein, 2015). Consequently, emphasis was placed on standardized test scores for students and subjects that were not explicitly tested and SEL were no longer pertinent. This shift in the school-system placed children under a great deal of pressure to perform and achieve academically (Blanco et al., 2012). Unfortunately, children suffering from behavioral problems or mental health issues may experience emotional interference with academic learning and therefore, might not be able to attain those academic standards (Blanco, 2009; Elias, 2006). Children may not be able to actively engage in school instruction due to difficulty processing academic information when suffering from mental illness or behavioral problems (Elias, 2006).

Consequently, students are at-risk for school failure when suffering from emotional challenges or mental health issues (Blanco, 2009). However, previous research and advances in neuroscience support the idea that students can increase academic growth and achievement through better understanding and processing of their emotions (Blanco, 2009; Blanco et al., 2019, 2012; Elias, 2004; Zins, Weissberg, Wang, et al., 2004). Therefore, there is a significant need for evidence-based interventions or programs that help improve the behavioral, emotional, and social needs for students due to the strong correlation between emotional development and academic success (Blanco & Ray, 2011; New Freedom Commission on Mental Health, 2003; Perryman & Bowers, 2018).

SEL programs implemented within school systems are beneficial for all students and the school community; however, children identified as at-risk for school failure need additional intervention for school success (Zins & Elias, 2006). Therefore, given the link between emotional development and academic success, it is crucial that schools have effective methods for identifying students who are at-risk for school failure; additionally, implementing evidence-based, developmentally appropriate, preventative programs to assist with student learning is imperative (Perryman et al., 2020; Perryman & Bowers, 2018). Primary Project began in the 1950s and has developed into a national evidence-based program to identify and provide preventative interventions for elementary school students at-risk for academic or other adaptive issues (Cowen & Hightower, 1989). Primary Project focuses on behavioral, social, emotional, and learning needs of the students and has shown positive results in helping children adjust to and succeed in schools; specifically, gaining confidence, increasing social skills, and decreasing negative behaviors (Peabody et al., 2018; Perryman & Bowers, 2018). Primary Project is one of the most researched and longest-standing school-based preventative mental health intervention

for children pre-kindergarten through third grade (Cowen & Hightower, 1989; Peabody et al., 2018).

Emotions, emotional understanding, and emotional processing are critical for academic success; specifically, for information processing, social and written communication, motivation and attention, concentration and memory, critical thinking, creativity, and behavior (Goleman, 1995; Jensen, 1998; Kusche & Greenberg, 1998; Sylwester, 1995). Additionally, it is crucial for educators and mental health providers to understand the integration of behavior, emotions, and cognition for students (Greenberg & Snell, 1997). Neurobiology actively plays a role in a student's ability within the school setting. Memory, concentration, and attention are all powerfully influenced by a child's current emotional state and development (Kusche & Greenberg, 2006). For example, neural components associated with emotion regulation and the components associated with cognitive processes appear to be mutually inhibitory; consequently, when one of these areas is active, functioning in the other is compromised. A child who is emotionally upset or distressed will find it hard or even impossible to pay attention and concentrate cognitively on schoolwork (Kusche & Greenberg, 2006). Therefore, understanding neurodevelopment of children, identification of students at-risk for emotional and behavioral issues, and early preventative programs in school is crucial for student success.

Play therapy is effective in working with children who have emotional and behavioral issues; additionally, advancements in neuroscience support the importance of play and social relationships in healthy brain development for children (Wheeler & Dillman Taylor, 2016). Cognitive development for children happens faster than their language development; therefore, communication of their awareness, views on the world and their environment, along with their experiences take place through their play (Landreth, 2012). Positive relational experiences and

play both influence anatomy and neurobiology of children; specifically, play therapy helps to identify neural disintegration as well as actively aiding neural integration (Gaskill & Perry, 2014; Hudspeth & Matthews, 2016; Wheeler & Dillman Taylor, 2016). Therefore, play therapy is crucial and essential aspect for children's neurodevelopment.

Understanding and incorporating neuroscience to enhance mental health interventions is critical. The right and left hemispheres of the brain have specialized functions; therefore, integration between the two, or bilateral or horizontal integration, is imperative (Badenoch, 2008; Greenberg & Snell, 1997). Bilateral integration is essential to building emotional awareness in children, and mental health professions can utilize play therapy techniques to improve integration between the right and left hemispheres of the brain. Labeling and reflecting feelings during play therapy sessions influences children's verbal identification of feelings which assists in managing their experienced feelings as well as controlling behavior as bilateral integration increases (Kusche & Greenberg, 2006; Wheeler & Dillman Taylor, 2016). Linking and working together of the limbic system and cortex in the brain as well as the body is vertical or executive integration (Badenoch, 2008). Play therapy techniques of thematic responses and reflection of larger meaning enhances children's vertical integration; consequently, increasing their experiences of bodily awareness and attunement (Kusche & Greenberg, 2006; Wheeler & Dillman Taylor, 2016). Increases in vertical integration help children to avoid dysregulation when experiencing and feeling a wide range of emotions (Kusche & Greenberg, 2006; Wheeler & Dillman Taylor, 2016).

Child-centered play therapy (CCPT) is a specific theory or modality of play therapy and is one possibility for providing a mental health intervention in public schools as play allows for children to express themselves emotionally as well as process their experiences (Landreth,

2012); additionally, CCPT is the most developmentally appropriate approach for working with children (Landreth, 2012; Landreth et al., 2009; Perryman, 2016). Numerous studies have highlighted the effectiveness of CCPT for children; specifically, increases in emotional health, improved self-confidence, development of positive interpersonal relationships, increases in self-concept, and an increased sense of autonomy (Blanco & Ray, 2011; Bratton et al., 2005; Ray, 2007; Ray et al., 2015). Landreth (2002) suggested that the unique relationship established in child-centered play therapy between the therapist and the child is a critical component in the success of therapy for the child. Specifically, as the child perceives the therapist and play room as safe, accepting, and nonjudgmental, as well as reflecting the emotional expressions of the child, he or she will become empowered and more accepting of him or herself (Landreth, 2002, 2012). The environment created in child-centered play therapy between the therapist and child, built on understanding, acceptance, and genuine interest, "unleashes the child's potential to move toward self-enhancing ways of being" (Ray et al., 2013, p. 15).

## Purpose of the Study

Previous research suggests that students suffering from mental health issues are often identified as at-risk for school failure (Blanco, 2009). Advances in neuroscience indicate that as children integrate, process, and increase emotional regulation, cognitive aspects of the brain are more available engagement in learning and academics (Kusche & Greenberg, 2006). Additionally, play therapy is an effective intervention for students to cope with mental health issues (Bratton et al., 2005; Ray et al., 2015). However, despite significant research over the previous decade regarding CCPT and short- and medium-term academic success (Blanco, 2009; Blanco et al., 2012, 2019; Blanco & Ray, 2011), mental health interventions have not currently been correlated to or considered evidence-based for academic achievement in children with

emotional needs or identified as at-risk for school failure. Therefore, the purpose of this study is to examine the long-term impact of child-centered play therapy on academic achievement in at-risk elementary school students. This study intends to establish the importance of early identification of at-risk students and implementation of preventative interventions within the school allowing the student to become more fully engaged in the classroom and learning environment (Ray et al., 2015).

An additional purpose to this study is to increase the research and knowledge base regarding the link between CCPT and students' academic success. There are requirements for studies attempting to add to the evidence base practice literature. This study meets requirements as it is an outcome study of quasi-experimental design. Findings are reported at a $p < .05$ level, and practical significance, clinical significance, and interaction effects are explored (Lin & Bratton, 2015).

## Research Questions

The purpose of the study is to evaluate the long-term impact of child-centered play therapy on academic achievement in elementary school children. The following four research questions are posed:

1. Do students previously qualifying for and receiving CCPT services via Primary Project experience academic growth as measured by MAPS assessment scores in reading and mathematics in subsequent years?

2. Are there differences in academic growth, as measured by MAPS assessment scores in reading and mathematics between those students that previously qualified for and received CCPT services via Primary Project and those that did not qualify for services in subsequent years?

3. Are there differences in Conditional Growth Index in reading and mathematics between those students that previously qualified for and received CCPT services via Primary Project and those that did not qualify for services in subsequent years?

4. Are there differences in students' probability of meeting Expected Growth in reading and mathematics between students that previously qualified for and received CCPT services via Primary Project and those that did not qualify for services in subsequent years?

## Definition of Terms

1. *Academic Achievement*: an understood knowledge that fosters the ability to succeed in school, specifically in the areas of general information, reading, mathematics, writing and spoken language (Blanco, 2009, p. 49).

2. *At-risk*: students that had qualifying T-CRS 2.1 scores but were not demonstrated sustained disruptive behaviors in the classrooms, failing grades, and/or significant attendance issues (Perryman et al., 2020).

3. *Child Centered Play Therapy (CCPT)*: a dynamic interpersonal relationship between a child and a therapist trained in play therapy procedures who provides selected play materials and facilitates the development of a safe relationship for the child to fully express and explore self (feelings, thoughts, experiences, behaviors) through play, the child's natural medium of communication, for optimal growth and development (Landreth, 2002, p. 16).

4. *Computerized Adaptive Test (CAT):* an assessment based on the student's performance while responding to items constrained in content to a set of standards or curriculum (Thum & Hauser, 2015).

5. *Conditional Growth Index (CGI):* standardized measure of observed student growth compared to the 2015 NWEA student growth norms; *z*-score; expresses student growth in standard deviation units above or below the growth norms; calculated as (observed growth – expected growth) / observed growth standard deviation (Thum & Hauser, 2015).

6. *Expected Academic Growth:* increases in RIT values on the MAP assessment determined by national norms per grade level and academic testing subject.

7. *Measure of Academic Progress (MAP) Assessment*: uniquely designed assessment designed to align with state standards where scores can be compared to evaluate change over time in three academic domains: reading, mathematics, and language usage (NWEA, 2011b).

8. *Non-Qualifiers*: students not identified as at-risk; students did not receive CCPT services via Primary Project in Perryman and Bower's (2018) study.

9. *Observed Academic Growth*: students' spring MAP assessment scores minus students' fall MAP assessment scores; highlighting the improvement in each MAPS domain via growth throughout the academic year.

10. *Primary Project*: national evidence-based program implemented in public elementary schools over the last 60 years used to identify students at-risk for school maladjustment and potential for school failure as well as provide a preventative intervention (Cowen & Hightower, 1989; Perryman & Bowers, 2018; Perryman et al., 2020).

11. *Qualifiers*: students identified as at-risk; students who did receive CCPT services via Primary Project in Perryman and Bower's (2018) study.

12. *Rasch Unit Score (RIT)*: estimate of a student's instructional level; scale to measure student achievement and educational growth from academic year to year; scores relate directly to the curriculum scale in each subject area; use individual item difficulty to measure student achievement independent of grade level (i.e., across grade level); these scores are expected to increase over time (NWEA, 2011b).

13. *Teacher Child Rating Scale 2.1 (T-CRS 2.1):* brief objective rating scale designed for teachers to complete in order to evaluate school problem behaviors and competencies in their current students (Hightower & Perkins, 2010).

## Brief Dissertation Overview

This study is separated into five distinct chapters: introduction, literature review, methodology, results, and conclusion. Chapter 1 is an introduction to the purpose of the study and research questions. Chapter 2 is a summary of the current literature and research regarding academic achievement, emotional health, child-centered play therapy, and early intervention. Chapter 3 comprises the specific methods and procedures utilized in this study. Chapter 4 discusses details of the data analysis process. Chapter 5 highlights the results of the study, as well as significant implications, limitations, and recommendations.

# CHAPTER 2: LITERATURE REVIEW

The following review of literature and research is divided into four main areas: social-emotional learning, early intervention and preventative measures for primary students, neurodevelopment, and child-centered play therapy.

## Social-Emotional Learning

Education and educational success are a top priority for many nations around the world. Consequently, there are various notions for what children are expected to learn during school. Elias (2006) summarized a list of what students are expected to master:

- be sufficiently literate and able to benefit from and make use of the power of written and spoken language, in various forms and media;
- understand mathematics and science at levels that will prepare them for the world of the future and strengthen their ability to think critically, carefully, and creatively;
- be good problem solvers;
- take responsibility for their health and well-being;
- develop effective social relationships, such as learning how to work in a group and how to understand and relate to others from different cultures and backgrounds;
- be caring individuals with concern and respect for others;
- understand how their society works and be prepared to take on the roles that are necessary for future progress; and
- develop good character and make sound moral decisions. (pp. 4-5)

The last six listed refer to aspects of education that focus on character, service, citizenship development, as well as emotional intelligence (Elias, 2006). Together these aspects can collectively be labeled as social-emotional learning (SEL) (Elias & Arnold, 2006). Romasz et al. (2004) defined SEL as:

> Social and emotional learning refers to the ability to understand, manage, and express social and emotional aspects of one's life in ways that enable the successful management of life tasks such as learning, forming relationships, solving everyday problems, and adapting to the complex demands of growth and development. It includes self-awareness, control of impulsivity, working cooperatively, and caring about oneself and others. (p.92)

Students have varied abilities and motivations for learning academic material within school systems. Some participate enthusiastically and are committed and thriving in the

classroom while others are disengaged and struggle academically (Elias & Arnold, 2006). Additionally, many students exhibit deficits in social-emotional competence and have mental health problems; consequently, these students have increased difficulties in learning and potentially disrupt their peers' educational experiences. Therefore, there has been a growing demand for schools to implement educational approaches that effectively promote academic learning and success, enhance health, and prevent problem behaviors for students. After reviewing previous research, Greenberg et al. (2003) stated that the most beneficial school-based prevention and development interventions both enhanced students' social and personal assets as well as increased the quality of educational environments. Therefore, Greenberg et al. (2003) asserted that education, preschool through high school, should be based on social, emotional, and academic learning.

Being that an overarching goal of education and schools throughout the world is to offer students practical and intellectual tools they can utilize in their classrooms, with their families, within their communities, and for future professions, SEL places emphasis on many of these components. Specifically, SEL focuses on social and emotional processes for students as well as helps students learn skills needed to successfully engage in life tasks such as learning, forming relationships, being sensitive to others' needs, working and getting along with others, and communicating effectively (Elias & Arnold, 2006). SEL is not only interested in the academic progress of students; however, research has found when schools implement high-quality SEL programs effectively, students' academic achievement increases (Elias & Arnold, 2006). Similarly, rate and incidence of problem behavior decrease, climate of classrooms improves, relationships between students, teachers, and administrators are enhanced, and schools change for the better (Elias, 2006).

**SEL Programming**

Elias and Arnold (2006) found that SEL and lasting, effective academic learning are built on warm but challenging, classroom and school environments, as well as on caring relationships between students and with teachers. Previous research purports similar findings; specifically, students respond well to classrooms and schools that are challenging academically, but are neither threatening nor discouraging (Kriete & Bechtel, 2002; Lewis et al., 1996; O'Neil, 1997; Osterman, 2000; Zins, Weissberg, Walberg, et al., 2004). Consequently, students tend to succeed in schools where they feel valued, welcomed, cared about, and are seen as resources, not merely learners. Three SEL programs that were successfully implemented into schools between the 1970s and early 2000s include the School Development Program, the Child Development Project, and Morning Meeting.

*School Development Program*

Dr. James Comer launched the School Development Program (SDP) in 1968 in an attempt to better understand why schools were failing (Panjwani, 2011). Comer proposed that schools were failing academically because they were trying to teach the academic material; however, they were not focusing on the student's development or the life lessons that were necessary for success both school and life outside of the classroom (Panjwani, 2011). Many education improvement programs only focus on academic concerns; specifically, improving students' test scores or teachers' credentials. However, SDP focuses on the whole student (Roach, 2013). Therefore, the program not only encourages higher achievement in school but also emphasizes psychosocial development (Comer, 2013).

There are seven critical components to SDP; specifically, (1) teachers and other school personnel show caring and sensitivity toward children; (2) give each child fair and equal

treatment and equal access to resources; (3) have high expectations for student achievement; (4) be part of collaborative decision-making processes; (5) do not place blame on others; (6) maintain academic focus; and (7) assist in preserving the building's physical appearances. Consequently, these guidelines allow teachers to feel involved, respected, and appreciated (Panjwani, 2011). Similarly, school administration and teachers engage in team-building activities to build and increase trust in one another (Roach, 2013) as well as learning how to listen to actively and respect one another in effort to execute decisions better effectively and efficiently (Comer, 2013). The students engaged in SDP programs also have guiding principles to follow in order to increase not only academic learning but also pro-social skills; specifically, students are expected to maintain order and discipline and to treat one another with respect, trust, and kindness. Consequently, students learn problem-solving strategies, resolve conflicts in appropriate, non-violent ways, and enhance their self-esteem (Comer, 2013). Additionally, it is posited that as students believe they are respected and capable of achieving goals motivates them to become active members of their community (Panjwani, 2011).

Schools that have implemented SDP have noted drastic differences; specifically, higher standardized test scores in math, reading, and language sections. Additionally, higher levels of self-confidence for students' in their academic and social abilities were also found (Panjwani, 2011); similarly, these schools reported higher attendance rates, and teachers observed better student behaviors (Roach, 2013). The climate SDP allows teachers the opportunity to engage and build better relationships with students and other school members; therefore, students reported feeling more comfortable discussing and seeking guidance for both academic and personal issues with teachers (Comer, 2013). Consequently, Comer's focus for SDP was implementing a way for adults within the school system to interact with students in a manner that created a climate where

the children felt comfortable, safe, and protected. This unique environment was one Comer believed that students could both identify with and attach to adults (O'Neil, 1997).

Overall, schools that incorporated the entire SDP model into the school system showed better results in student achievement, school attendance, and better school climate; additionally, more improvement was noted the more prolonged the SDP program was implemented at the school (Panjwani, 2011). Given the success of this program, by the 1990s SDP had trained thousands of teachers and administrators. However, with the development of No Child Left Behind (NCLB) federal legislation and the subsequent emphasis on high-stakes student testing in the early 2000s, school districts retreated from the school reform programs and focused their energies on preparing students for standardized tests that measure yearly progress in reading, writing, and math (Roach, 2013). Despite the emphasis on test scores, Comer has continued to serve on national commissions in effort to continue to positively impact practices of teachers and educational instruction. Comer continues to believe that "…when children are developing well, they will learn well. And that puts development central in education" (Roach, 2013, p.17). Therefore, Comer contends if schools, administrators, parents, and teachers want to improve academic learning, all need to be involved in knowing how to create cultures within the schools and communities that support child development (Roach, 2013).

***Child Development Project***

Lewis et al. (1996) found that when students are motivated by essential and challenging work, as well as when children care about one another, they are more apt to care about learning. The Child Development Project (CDP) has been implemented in schools around the country, and its focus is on creating a community, as it is believed to be a critical component to children's learning and citizenship. Previous research links character development to a sense of community

within a school (Schaps et al., 1993); consequently, at the core of CDP is the idea that values must be experienced as well as taught. Therefore, CDP is a comprehensive program aimed at fostering students' ethical, social, and intellectual development (Schaps et al., 1993).

Within CDP, there are five interdependent principles to practice. The first principle is warm, supportive, and stable relationships; consequently, implementation of CDP involves questioning the types and quality of human relationships being fostered between teachers, staff, and students (Lewis et al., 1996). Additionally, understanding the underlying components of community within CDP, it is imperative to create relationships where all individuals feel known and valued as collaborators in learning. Developing unity, finding shared purposes, setting expectations for how individuals want to be treated by others, and letting students determine what kind of class and environment they want to take place is imperative to CDP (Lewis et al., 1996). Research found that when students feel liked, respected, and accepted by their teachers and peers, they tend to work harder, have higher achievement, and attribute more importance to their classes and school (Lewis et al., 1996).

Building off the foundational relationships within CDP, the second principle is constructive learning (Lewis et al., 1996). This principle focuses on fostering students' efforts to understand while also challenging them to become pursuers of knowledge; specifically, increasing their skillful, reflective, and self-critical abilities. The third principle is implementing an essential and challenging curriculum. Curriculum comprised of textbook learning and standardized testing isolates subskills and basic knowledge; however, CDP suggests that curriculum development should be driven by long-term goals, not short-term knowledge coverage (Schaps et al., 1993). Consequently, curriculum should include children's development as "principled, humane citizens" (Lewis et al., 1996, p. 19).

Intrinsic motivation is the fourth principle; it is posited that administrators and educators need a curriculum that students feel is worthy of learning and teaching strategies that aid students in understanding the worth of the information (Lewis et al., 1996); consequently, focusing on experiential learning (Schaps et al., 1993). By decreasing extrinsic rewards such as prizes, honors, and grades, teachers are then able to increase experiences of working with others, exploring their difficulties, shaping norms of their classrooms and schools, increasing standards of well-being for everyone. This allows students to develop collaborative approaches to resolving conflicts and guiding students to think about the values needed for humane life in a group (Lewis et al., 1996). The last principle is viewing education and school through a lens of social and ethical development. Asking questions regarding values in a democratic society, opportunities to develop and practice qualities such as responsibility, collaboration, tolerance, commitment to the common good, and courage to stand up for their beliefs is critical to CDP (Lewis et al., 1996). When all these principles are implemented, they create an environment where students care about one another and learning (Schaps et al., 1993).

Schools high in community characteristics show a host of positive outcomes for students; specifically, higher expectations for educational and academic performance, increased motivation to learn and liking of school, fewer absences and conduct problems, greater social competence and commitment to democratic values (Lewis et al., 1996). Research has shown that CDP has been successful in increasing a wide range of socio-emotional outcomes through enhancing students' sense of connection to and engagement in school (Schaps et al., 2003). Similarly, effects of CDP implemented within schools have indicated that improvements in the psychosocial environment, community, and school had positive outcomes for student achievement (Durlak et al., 2011).

*Morning Meeting*

Teachers have long understood, and researchers are now confirming, that social skills are intertwined with cognitive growth and intellectual progress (Kriete & Bechtel, 2002). Therefore, it is believed that the student who can listen well, who can frame a good question, who has the assertiveness to pose the question, and who can examine a situation from various perspectives is a reliable and capable learner. However, Kriete and Bechtel (2002) posit all those skills – skills essential to academic achievement – must be modeled, experienced, practiced, extended, and refined in the context of social interaction. Therefore, they developed Morning Meeting: a specific and deliberate way to begin the school day based on the observation that not only is it good for students to be noticed by their teachers, it is critical that students notice and be noticed by each other, as peers, as well.

Morning Meeting is a small gathering for students and teachers and is comprised of four, sequential components each intentionally providing opportunities for students to practice the skills of greeting, listening and responding, group problem solving, and noticing others and anticipating responses (Kriete & Bechtel, 2002). The first component is the greeting. The children greet each other by name, often including handshaking, clapping, singing, and other activities. The second component is sharing; specifically, articulate their ideas, thoughts, and feelings via sharing news of interest to the class and by responding to one another positively. Group activity is the third component. The whole class does a short activity together, building class cohesion through active participation. Lastly, news and announcements are the last activity when students develop language skills and learn about the events in the day ahead by reading and discussing a daily message posted for them. Kriete and Bechtel (2002) highlight that Morning Meeting motivates students by addressing two human needs: the need to feel a sense of

significance and belonging and the need to have fun. Consequently, Morning Meeting merges social, emotional, and intellectual learning into the school setting.

## *Summary*

Voices of many educators and researchers agree that "one of the most fundamental reforms needed in secondary or high school education is to make schools into better communities of caring and support for young people" (Earl et al., 1996, p. 53). A crucial component of building better school communities for students is the ability of teachers, staff, and administrators to be warm, accepting, and caring of students as demonstrated in successful SEL programs. The positive impact of SDP, CDP, and Morning Meeting all rest on the idea of community, or the concept of belongingness (Osterman, 2000). Building community in schools allows members to feel that the group is essential to them and that they are vital to the group. Consequently, members of a shared community feel that the group will satisfy their needs; they will be cared for or supported. Additionally, the community has a shared and emotional sense of connection (Osterman, 2000). Unfortunately, few educational institutions pay attention to the socioemotional needs of students. As indicated by the nation-wide emphasis on standardized achievement tests, academic accomplishment is the main priority, especially in secondary schools. This changes the focus to believe that achievement and mastery are more important than a sense of belonging, belonging is not a precondition for engagement but rather a reward for compliance and achievement, and that personal and emotional needs of students are met at home or in social relationships outside of the classroom (Osterman, 2000). However, many researchers and studies have highlighted the link between emotional health in students and their academic achievement in school.

**Emotional Health and Academic Achievement**

In the education field, the main goal for teachers and administrators is academic progress and achievement for students; however, children with emotional or behavioral challenges are at-risk for school failure (Blanco, 2009). Over the past two decades, many studies have been conducted in order to better understand the link between emotional health and academic achievement. This previous research highlights the importance of emotional learning for future academic success (Caprara et al., 2000; Carlson et al., 1999; Elias et al., 2003; Greenberg et al., 2003; Romasz et al., 2004; Wilson et al., 2001).

*Developmental Trajectories*

Carlson et al. (1999) proposed that failure of students to adjust in high school was a symptom of more basic developmental and educational difficulties such as the inability to maintain participation in academic and social relationships as well as behavioral problems. Consequently, it was hypothesized that school failure could be a part of a developmental cycle of achievement and developmental problems beginning earlier in education; therefore, Carlson et al. (1999) conducted a longitudinal study to assess if early social and emotional support in elementary school students could predict ease of adjustment to high school. Over 17 years for the longitudinal study, Carlson et al. (1999) found strong correlations between measures of emotional health and academic achievement. Similarly, participants scoring higher on measures of support, peer competence, externalizing behavior, and emotional health/self-esteem were correlated significantly with and predicted later high school adjustment. Carlson et al. (1999) highlight the need for early intervention for students as school performance and achievement at an early age increasingly predicts achievement at a later age; consequently, identifying social and emotional influences early in the student's life significantly influences later higher school

20

adjustment. Carlson et al. (1999) highlight that emotional health significantly predicted later adjustment.

Academic development relies heavily on the interpersonal supports and guidance of others; consequently, pro-socialness, as reflected in cooperativeness, helpfulness, sharing, and being empathic, is a significant factor that helps to promote social networks conducive to academic learning (Caprara et al., 2000). Caprara et al. (2000) used a longitudinal design to assess students' developmental trajectories in academic and social domains; consequently, they found that early prosocial behavior strongly predicts the subsequent level of academic achievement. More specifically, changes in achievement around eighth grade could be better predicted from knowing children's social competence five years earlier than from knowing their third-grade academic achievement (Caprara et al., 2000). Therefore, these findings show early pro-socialness impacts the path to later social and academic success. Caprara et al. (2000) stated development of educational programs that create academically supportive communities fostering mutual caring, and social engagement of students in academic pursuits could lead to better developmental outcomes in social, affective, moral, and cognitive domains.

### *SEL Versus Conventional Interventions*

In the comparison of SEL to more conventional school-based interventions, Wilson et al. (2001) conducted a meta-analysis of 165 published studies examining school-based prevention services; including individual counseling and behavior modification programs to change the way schools are managed. In this analysis, the most common grade ranges included in the studies were middle/junior high students, most of the interventions evaluated were presented to a general student population, and the vast majority of the programs were delivered in a group setting, generally in the students' classroom (Wilson et al., 2001). Approximately 32% interventions

included in the meta-analysis included self-control and social competencies, that is, a focus on social and emotional learning. Self-control and social competency promotion instruction showed consistently positive results across all four categories; specifically, delinquency, drug use, dropout/nonattendance, and other problem behaviors. Consequently, results of this study found that those studies and programs focusing on SEL resulted in improved outcomes related to important factors in school success (Wilson et al., 2001).

*Learning Environment*

In efforts to highlight the importance of SEL incorporation into schools as well enrich the understanding of what is required of schools for successful incorporation, Elias et al. (2003) investigated the current literature of educational innovations. They found that students did not show corresponding gains in practical, every day, and higher-order use of their test-linked skills in areas such as mathematical reasoning, reading with real comprehension and writing text that communicates their ideas. Consequently, Elias et al. (2003) stated that evidence is mounting from the field of brain-based research that the process of learning, and especially retention with flexibility needed for application in new contexts, is linked to social and emotional factors in students and the teaching environment. Elias et al. (2003) reported that focusing on standardized test scores in reading and math has disrupted the interrelationship between academics and SEL. Their main argument for inclusion of SEL into academic programs was questioning the implications of having school systems and environments that increase feelings of anxiety and insecurity in students as well as their overall maltreatment. When students feel this way, Elias et al. (2003) stated that relationships within the school change, the environment changes, and then mental health professionals are asked to enter into the system to "fix" students, but not fix the school environment or focus on what is inflicting "social casualties" (p. 305). Therefore, Elias et

al. (2003) stated emphatically that including SEL into schools is an essential part of academic curriculum and is vital for academic success.

Zins, Weissberg, Walberg et al. (2004) also found that the interpersonal and educational climate impacts improved outcomes for students. For example, partnering between teachers and families reinforces learning, engagement, and positive behaviors for students. Similarly, students achieve more when they feel safe in the school and classroom environment. Another component that fosters academic success is caring and engaging relationships between students and teachers, which enhance commitment, connection to school, cooperative learning, and proactive classroom management. Lastly, high expectations and support for quality academic performance and achievement are conveyed through teacher and peer norms within the classroom (Zins, Weissberg, Walberg et al., 2004). Therefore, they purport that SEL has a crucial role in improving not only academic performance but also lifelong learning (Zins, Weissberg, Walberg et al., 2004)). Researchers proposed that positive behavior is liked to enhance intellectual outcomes and that negative behaviors often occur with poor academic performance. Integrating teaching of both emotional and social skills is needed in the classroom (Zins, Weissberg, Wang, et al., 2004).

### *Social-Emotional Needs*

Additionally, Elias et al. (2003) reported, "Children who are hurting cannot learn effectively, and their presence in schools without getting needed attention rains energy, focus, and potential from the learning environment" (p. 304). It is critical to address student's social-emotional needs systematically within the schools. These needs include improving access to care, promoting greater interdisciplinary collaboration in developing intervention and preventative strategies, expand mental health services provided for students and ensure the

services are provided in a culturally sensitive manner, as well as bridging the research-practice gap to provide effective and efficient services (Elias et al., 2003). Consequently, the Collaborative for Academic, Social, and Emotional Learning (CASEL) organization was created to enhance children's opportunities for social, emotional, and academic development in 2003.

CASEL has undertaken a leadership role in assessing the relationship of academic and social-emotional intelligence; they posit that all students have the right to learn and grow knowledgeable in a caring environment and acquire skills to contribute productively to their schools, families, communities, and workplaces (Elias et al., 2003). Additionally, incorporating social and emotional competencies into academic learning is an integral part of academic success; for example, managing emotions, working cooperatively with others, and effective problem-solving. When SEL interventions are incorporated within a supportive learning environment, a more favorable climate is produced for students and teachers. Consequently, opportunities for SEL competencies are created, practiced, and reinforced. These factors, in turn, lead to more risk reduction, asset building, and greater attachment and engagement in school. The outcome is improved performance in school and life. This process is depicted in Figure 1 below from Elias et al. (2003).

Evidence-Based SEL Programming

Opportunities & Rewards for Positive Behavior

Greater Attachment, Engagement, & Commitment to School

Better Academic Performance and Success in School and Life

Safe, Caring, Cooperative, Well-Managed Learning Environments

SEL Competencies
•*Self-awareness*
•*Social awareness*
•*Self-management*
•*Relationship skills*
•*Responsible decision making*

Less Risky Behavior, More Assets & Positive Development

Figure 1. The relationship between social-emotional skills and academic success

*Effectiveness*

Fostering SEL competencies in schools positively impacts students' attitudes, behaviors, and performance; consequently, Zins, Weissberg, Wang, et al. (2004) provided an empirical case for incorporating SEL into school systems. Students who become more confident and self-aware about their learning abilities tend to try harder in school; additionally, students who learn to motivate themselves, manage their stress, organize their approach to work, and set goals tend to perform better academically. Similarly, students who make decisions about studying and completing their homework responsibly, as well as using problem-solving and relationship skills with others often overcome obstacles and achieve more in school. Consequently, SEL competencies improve academic performance (Zins, Weissberg, Wang, et al., 2004).

Although educational systems intend to prepare students with skills such as reading, writing, and performing mathematical computations, research has provided a clear foundational understanding that social and emotional skills are prerequisites needed before academic

information can be learned in the classroom (Romasz et al., 2004). Consequently, Romasz et al. (2004) conducted an evaluation of an SEL program implemented within school systems to improve academic performance and reduce student problem behaviors. They believed that certain groups of students are at higher risk for significant difficulties and are limited in their long-term academic, professional, intrapersonal, and interpersonal capabilities; specifically, those groups where students face higher community and family stressors. These groups are in more need of school interventions that provide structure to help students incorporate SEL and learning positive coping skills and how to access resources for support in order succeed in learning. Therefore, Romasz et al. (2004) determined that comprehensive primary prevention interventions can reduce risk factors for students as well as help develop strengths and healthy coping mechanisms. As a result, mental health should improve, as well as the students' capacity for academic learning. Romasz et al. (2004) claim it is imperative for schools to provide resources for the emotional and social needs of the students in similar ways they meet academic needs within the school system.

The key to success in school and academic achievement is social-emotional competence; additionally, this relationship has been highlighted in previous research. Specifically, emotions affect how and what students learn, the foundation for lasting learning rests in caring relationships been peers and teachers, and crucial SEL skills can be taught to all students and incorporated into all schools (Zins & Elias, 2006). Consequently, academic performance and success can be improved when students learn how to identify their strengths and emotions, which in turn leads to gains in personal confidence (Zins & Elias, 2006).

Emotions can either facilitate or impede students' academic engagement, commitment, work ethic, and school success; additionally, students do not learn alone typically as they work in

collaboration with their peers, teachers, families, and communities (Durlak et al., 2011). Unfortunately, students often lack SEL and become less connected in and to school as they progress from elementary to middle, to high school. This negatively affects their academic success, behavior, and physical and emotional health (Durlak et al., 2011). A meta-analysis examining 213 school-based SEL programs was conducted by Durlak et al. (2011) involving over 250,000 students ranging from kindergarten to high school. Student receiving SEL demonstrated gains in three main areas compared to control group peers; (1) social-emotional competencies and attitudes about self, other, and school; (2) behavioral adjustment and reduced conduct and internalizing problems; and (3) improved academic performance on achievement tests, increased an average of 11-percentile-points, and grades (Durlak et al., 2011). Consequently, the results of this study add to the growing evidence regarding SEL, academic achievement, and overall health.

### *At-Risk Students*

Previous research has shown that students with emotional or behavioral issues often struggle in school or have academic deficits (de Lugt, 2007). Children with emotional and behavioral disorders (EBD) are often found to have poor academic achievement that cannot be explained by sensory, health, or intellectual impairments (Reid et al., 2004). Few studies have focused on academic deficits, and the needs of students with EBD require in order to be successful in the classroom. Therefore, it is believed that this lack of focus exacerbates the existing academic deficits for students with EBD. Consequently, de Lugt (2007) investigated academic achievement research, specifically, achievement in reading, of students with EBD and found reading achievement of these students was significantly lower than their classmates. The discrepancy between students with and without emotional difficulties continued to increase as

students progressed in school; therefore, de Lugt (2007) concluded that there is a strong relationship between academic success and achievement and students' behaviors. Specifically, she found that poor academic achievement led to behavioral problems for students (de Lugt, 2007).

The primary aim of SEL programs is prevention and promotion for all students; specifically, prevention of behavioral problems through promoting emotional and social competencies (Zins, Weissberg, Walberg, et al., 2004). SEL is considered universal as it benefits the general population of students, students who are at-risk, those beginning to exhibit negative behaviors, as well as those already diagnosed or displaying significant problems (Zins & Elias, 2006). However, some students require additional or more intensive treatment to succeed in school. Zins & Elias (2006) created a visual figure to highlight the three systems of support needed to provide SEL services based on the needs of students. This continuum is depicted in Figure 2 below; the number of children served by each system is represented by the size of the circle. Additionally, the interrelationships among the three systems is represented by the overlapping of circles and the bottom box represented the foundation of the school-family-community partnership that promotes the development of all students (Zins & Elias, 2006).
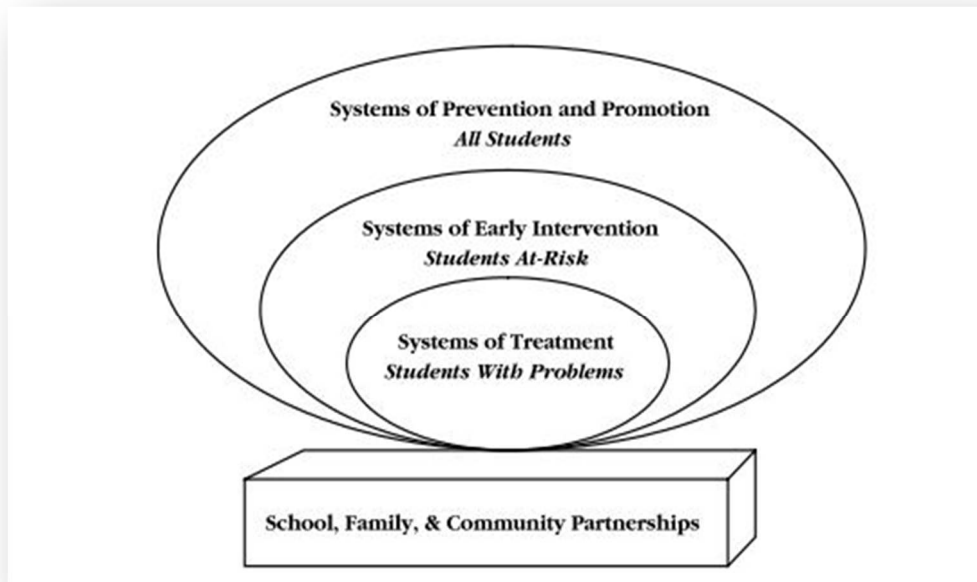
Figure 2. Integrated and coordinated systems to support the development of all students

*Summary*

Previous research has highlighted the connection between students with behavioral and emotional problems and poor academic achievement (Blanco, 2009). These studies have further emphasized the positive correlation between emotional health and academic achievement (Caprara et al., 2000; Carlson et al., 1999; Elias et al., 2003; Wilson et al., 2001). Romasz et al. (2004) evaluated SEL programs and found that student groups facing higher community and family stress experienced significant difficulties in academic, intrapersonal, interpersonal, and professional capabilities. Consequently, they determined that interventions improving students' mental health would also increase their capacity for academic learning (Romasz et al., 2004). SEL programs, all focusing on emotional health, have been positively linked to academic performance (Zins, Weissberg, Wang, et al., 2004); specifically, research studies have shown that all students can and have benefitted academically, socially, and physically from SEL in schools (de Lugt, 2007; Elias et al., 2003).

Unfortunately, at-risk students have been found to need additional intervention (Zins & Elias, 2006). Consequently, identifying and successfully working with at-risk students is a critical aspect for schools. Therefore, research implementing programs focusing on social and emotional components could provide opportunities for children to learn how to manage their emotions in school may help the development of academic achievement, especially those identified as at-risk for school failure.

## Early Intervention: Primary Project

Two clinical observations prompted a small pilot project in 1957. First, classroom teachers reported that problems of two to four children required 40-60% of their time and attention in the classroom. Consequently, the remaining students were not receiving the attention or instruction they needed to be successful, there were resulting detriments to those two to four students with higher classroom needs, and the teachers' sense of well-being and accomplishment was hindered (Cowen & Hightower, 1989). The second observation was the rise in mental health referrals between elementary and high school years. Review of records revealed that students often began exhibiting problems back to their primary grades. Unfortunately, these early exhibited problems did not dissipate or improve without intervention (Cowen & Hightower, 1989). These two observations pointed to the need for proactive alternatives such as systematic early identification and prompt, effective preventative intervention; consequently, the Primary Project (formerly known as Primary Mental Health Project) was developed (Cowen & Hightower, 1989).

Over the next 11 years, Primary Project's basic model began to emerge. The early stage focused on brief and objective methods for identifying students with emotional or adjustment problems to elementary school (Cowen et al., 1966). Main issues found in this group of students

were acting out problems, such as shyness, timidity, and withdrawal, and problems of inadequate academic achievement. Cowen et al. (1966) marked these students as "Red-Tag" (p. 381) or at-risk for academic, emotional, and behavioral adjustment issues at school. Once tagged and identified as at-risk, if left alone, these students continued to decline academically and in their overall adjustment. Cowen et al. (1966) noted that the deficit between the two groups of children was substantial and the "red-tag" or at-risk student "appears to be well rutted on a globally downhill course, which, by that time, is already well accelerated" (p. 386).

During this time, Primary Project began to consider service-delivery pattern changes as few schools were staffed sufficiently to meet the demands of student needs and referrals (Cowen & Hightower, 1989). Therefore, one possibility was suggested; specifically, that human attributes, such as commitment, interest, and life experiences relevant to working with children, could be more important or influential than education or advanced degrees when it came to working with and helping young children in need (Holzberg et al., 1967; Roich, 1967). This suggestion prompted the possibility of selecting and training nonprofessional help agents, specifically homemakers who exhibited specific qualities, for roles as child-aides within the schools (Cowen, Dorr, & Pokracki, 1972; Sandler, 1972; Zax & Cowen, 1967).

Almost 100 women were recruited to determine the attributes for the homemakers that would be chosen as Primary Project child-aides (Cowen, Dorr, & Pokracki, 1972). Interviews with psychologist-social worker teams took place to assess the candidate's current life situation, previous employment, family background, reasons for interest in working with Primary Project, and skills and interests in working with young children (Cowen, Dorr, & Pokracki, 1972). Additionally, after each interview, the psychologist and social worker rated the candidate on specific attributes believed necessary to be effective in working with children. A variety of

personality characteristics were considered; however, empathy and spontaneously favoring the interaction with children were chosen as significant variables hypothesized to be critical to the helping relationship the child-aides form with students (Sandler, 1972). Fifty were chosen to begin working with Primary Project.

The child-aides were carefully selected for their life experiences, interest patterns, and helping reflexes (Cowen, Dorr, & Pokracki, 1972). They began a focused and time-limited training in their roles and duties a child-aides; consequently, they worked under professional supervision to learn how to promote the educational and personal development of students experiencing early school adjustment problems (Cowen & Hightower, 1989). Primary Project research supports the child-aides efficiency as help-agents with young students; often studies found the child-aides were better suited for helping these students in the schools compared to mental health professionals due to their naturalness, warmth, involvement, and belongingness in such helping work (Cowen & Hightower, 1989). Additionally, many child-aides were pleased with their involvement due to the continuing challenge the job afforded them as well as feeling as though they belonged in the helping profession (Cowen & Hightower, 1989).

**Primary Project: Emphases and Practices**

There are four main emphases within the Primary Project structural model. First, Primary Project focuses on young students in primary school grades. This population is believed to be modifiable through intervention before significant behavioral or emotional problems root (Cowen & Hightower, 1989). Second, Primary Project uses active and systematic screening to identify children at-risk with early school adjustment problems. Third, through using carefully selected, trained, and supervised child-aides, Primary Project increases the capacity of early preventative services for students identified as at-risk. By identifying students at-risk for school

maladjustment and potential school failure, Primary Project acts as a preventative intervention. Last, mental health professional roles have two primary purposes; specifically, selecting, training, and supervising nonprofessionals as well as serving as a consultant and resource for school personnel. This change in role increases the reach of preventative services within the schools (Cowen & Hightower, 1989).

Though Primary Project is structured in overarching emphases, the approach is flexible to accommodate school-specific needs and variations (Cowen & Hightower, 1989). Based on their own needs, schools implementing Primary Project determine (1) early detection and screening measures; (2) staffing patterns regarding types and depth of mental health professionals; (3) types of individuals that serve as child-aides (e.g., volunteers, homemakers, students, retired persons, paid nonprofessionals); (4) specific ways of recruiting, training, and supervising child-aides; and (5) how child-aides work with students (e.g., group, individual, relational approach, behavioral approach). Variations to the Primary Project program can be incorporated; therefore, school programs need to understand and adapt to the realities of their own needs. Specific needs to consider are needs, resources, belief systems, and prevailing practices in order to work effectively with their students (Cowen & Hightower, 1989). However, the following step-by-step summary provided by Cowen and Hightower (1989) is, at best, an overall account of how Primary Project works:

1. Brief, objective screening measures provide profiles of young children's school problems and competencies;
2. Most referrals are initiated when the teacher perceives ineffective functioning in the child: aggressive, acting-out, and disruptive behaviors; shy, anxious, withdrawn reactions; learning difficulties; and combinations of the preceding. Other school personnel and parents also make referrals;
3. Screening and referral data are reviewed at an assignment conference involving the principal, school mental health professionals, teachers, and child-aides (i.e., the Primary Project team). This conference seeks to understand the child's situation and

to establish appropriate intervention goals and strategies. Following receipt of parent permissions, aides begin to see referred children regularly;

4. Child-aides seek to establish a warm, trusting relationship with children in an attempt to help them access pertinent problem areas and feelings and to enhance their self-esteem. Aides are supervised by school mental health professionals;

5. Teachers, aides, and Primary Project team members exchange information and coordinate goals. This step provides a formal communication mechanism that helps to increase teachers' sensitivity to relationships between psychological factors and a child's ability to learn. Some teachers translate such learnings into more effective classroom handling, and essential step toward primary prevention;

6. Midyear conferences take stock of children's progress and, when indicated, realign goals and procedures. End of year termination conferences evaluate children's overall progress and formulate recommendations for the next school year.

7. Primary Project consultants visit schools regularly to support professionals, provide enrichment and upgrading of skills for program participants, and consider interesting, challenging cases;

8. The school mental health professional's role in Primary Project differs from the traditional one. Much less time is devoted to direct one-on-one services; much more goes into training, consultative, and resource activities for school personnel and aides. (pp. 228-229)

Primary Project can address problem behaviors earlier for at-risk students by following this flexible structure rather than attempting to intervene when the students are older and believed to be too late (Cowen & Hightower, 1989).

**Foundational Primary Project Research**

Research was vital to the beginnings of Primary Project, and it has continued to be an essential aspect of the program. Consequently, Primary Project is among the most extensively researched school mental health projects (Cowen & Hightower, 1989). Numerous aspects of Primary Project have been assessed; however, prevalent foundational research consists of psychometrics to assess at-risk students (Cowen, Dorr, et al., 1973; Gesten, 1976; Hightower et al., 1987, 1986; Lorion et al., 1975), child-aide characteristics and interactions (Cowen, Dorr, & Pokracki, 1972; Cowen, Gesten, & DeStefano, 1977; Cowen, Gesten, Wilson, et al., 1977; DeStefano et al., 1977; Dorr, Cowen, & Sandler, 1973; McWilliams, 1972) with students, child factors (Boike et al., 1978; Brown & Cowen, 1987; Cowen, Gesten, Wilson, et al., 1977; Cowen

et al., 1984; Felner et al., 1980; Felner et al., 1981a, 1981b; Gallagher & Cowen, 1976, 1977;

Lotyczewski et al., 1986), and Primary Project effectiveness (Cowen, Dorr, Trost, et al., 1972;

Cowen et al., 1974; Cowen et al., 1983; Lorion et al., 1976; Sandler et al., 1975). Each area of

research will be detailed.

*Psychometric*

Considerable time and effort were invested in developing scales that could be used both

in conducting Primary Project but also to evaluate program effectiveness. Primary Project

wanted measures that were brief, understandable, easy to administer and score, and were relevant

to the essential domains for teachers and students (Cowen & Hightower, 1989). Consequently,

Cowen, Dorr, et al. (1973) suggested the use of the Acting Out, Moody, and Learning Behavior

Rating Scale (AML) as it is a brief, 11-item, quick-screening scale. The AML is designed for

teachers to use in identifying primary grade students experiencing early school difficulties or

emotional handicaps. Teachers rate students and their behaviors on a five-point Likert scale;

specifically regarding "aggressive-outgoing," "moody-internalized," and "learning disability" (p.

14). Each student could be assessed in 20-30 seconds, making the AML a viable resource for

Primary Project and teachers (Cowen, Dorr, et al., 1973).

Lorion et al. (1975) completed a factor analysis and other tests of reliability and validity

on the Classroom Adjustment Rating Scale (CARS), a modified version of the Teacher Referral

Form (TRF). The CARS inventory consists of 41-items that assess three main dimensions of

school maladjustment; specifically, learning problems, acting-out, and shy-anxious. Lorion et al.

(1975) found these three areas were significant as each group had unique referral patterns, and

the students responded differently to the Primary Project intervention. The original TRF limited

teacher responses to symptom presence or absence and did not allow for rating of the severity of

the behaviors; consequently, the CARS was adapted to correct those problems. Teachers completed the 41-items describing school adjustment issues for their students; additionally, teacher also rated the "extent to which the behavior interferes with the child's ability to profit from his/her school experience" (p. 294) on a Likert scale (Lorion et al., 1975). Lastly, teachers also completed a section regarding the students' family background items for a better overall picture of the student. Research utilizing the CARS assessment found that the instrument easily discriminated between students referred for Primary Project and those that did not need additional intervention (Lorion et al., 1975).

Many measures during this time focused on dysfunction; however, Gesten (1976) argued that new assessments were needed to focus on psychological health and competence. Consequently, the Health Resources Inventory (HRI) scale was developed; the 54-item scale assessed self-concept, affective expression, classroom response, motivation, interpersonal skills, achievement, and socialization (Gesten, 1976). Teachers rate all items on a Likert scale. Research on the HRI found the scale to be internally consistent, test-retest reliability was high, and discriminant validity measures with the CARS was appropriate; consequently, the HRI was found to be a valid and reliable scale to assess competence in young children (Gesten, 1976). It was determined that the HRI scale was able to discriminate between "clinically disturbed and normal children" (p. 783) and could distinguish levels of competence within the normative sample (Gesten, 1976).

Given the importance of teacher's ratings of their students, as well as understanding the students' strengths and weaknesses, a reliable and valid measure is imperative for planning and evaluating interventions in Primary Project. Therefore, Hightower et al. (1986) developed the Teacher-Child Rating Scale (T-CRS) with one part paralleling the CARS and child problem

areas and the other part paralleling the HRI and child competence items. Specific components from CARS were acting out, shy-anxious, and learning; components from HRI included good student, adaptive assertiveness, peer sociability, follows the rules, and frustration tolerance (Hightower et al., 1986). Additional studies on the developed T-CRS included reliability and validity components. Scale refinement included rearrangement of factors; specifically, reactions to limits and frustration tolerance, assertive social skills, and good student and task orientation (Hightower et al., 1986). Research on the T-CRS found validity from two sources: the scale's ability to discriminate groups known to differ in adjustment, and convergent and divergent validity with other measures of child adjustment and performance (Hightower et al., 1986). Therefore, the T-CRS is a credible measure for screening, assessment, program evaluation, and research for Primary Project (Hightower et al., 1986).

Previous research on appropriate Primary Project psychometric assessments have been teacher report; however, Hightower et al. (1987) suggested a self-report measure as people know their own behaviors best. Consequently, the Child Rating Scale (CRS) was developed as a screening tool to be used by itself or in conjunction with other assessments regarding elementary school student's socio-emotional status and problem behaviors (Hightower et al., 1987). CRS was created to supplement teacher reports of (1) conduct disorder, aggression, acting out, and externalizing behaviors, as well as (2) anxiety, withdrawal, internalizing, shy-anxious behaviors (Hightower et al., 1987), with a self-report measure reflecting those domains from the child's perspective. Adding the self-report measure was believed to more effectively identify students as at-risk when used in conjunction with teacher report (Hightower et al., 1987). Research on the CRS found that it was an effective screening assessment for children; specifically, it was a brief, objective measure that could be administered easily to groups of students (Hightower et al.,

37

1987). Additionally, it reflected the child's perspective of school adjustment and added to practitioners' assessment and clinical judgment regarding intervention strategies (Hightower et al., 1987).

### *Child-Aides*

Given the importance of child-aides in the Primary Project protocol, several studies have been completed to describe the processes and interactions. McWilliams (1972) analyzed the interaction between nonprofessional child-aides and primary grade students with maladaptation problems. Child-aides met with a student twice weekly for approximately 30 to 40 minutes through Primary Project. After observing interactions between the child-aides and students, McWilliams (1972) found much of their interactions consisted of non-directed play and activities where the aide and student jointly interacted; consequently, over 60% of the time was spent in some form of play activity. However, there were some differences found depending on the reason for the students' referral to Primary Project; specifically, higher levels of tutoring and academic work took place with students who were referred for learning disorders compared to problem-centered conversation, play, and feeling expression goals for students with behavioral problems (McWilliams, 1972). Child-aide personalities also played a role in their interactions with students. More introverted aides tended to be more passive and nondirective with students. Aides with strong needs to help others avoided taking an active role when the student was passive and talked less about the student's problems. Aides less interested in scientific pursuits engaged in more friendly conversation in attempt to build relationships with their students. Therefore, aide personality was found to impact how they worked with their students (McWilliams, 1972).

Primary Project utilizes child-aides to provide interventions with the students while the mental health professionals serve as supervisors for the child-aides. Before child-aides begin working with the students, they first complete 12 training sessions and continue working under supervision for the duration of their time in the program (Dorr, Cowen, & Sandler, 1973). Though child-aides were selected due to having positive characteristics and excellent natural helping skills, it was believed that attitude and job-related response styles could change after their training, job experience, and supervision (Dorr, Cowen, & Sandler, 1973). Child-aides selected for this study completed at least 12 training sessions over two and a half months; additionally, child-aides had been working with students via Primary Project and under supervision for at least three and a half months (Dorr, Cowen, & Sandler, 1973). Child-aides completed two assessments; the first reflecting different styles of interactions with a child (i.e., control, nurturance, understanding, and rejection), the second was an evaluating scale reflecting specific attitudes (i.e., elementary school, teacher, school principal, mental health worker, children, emotionally disturbed children, slow-learning children, myself, and homemaking). Dorr, Cowen, and Sandler (1973) found that after training and working under supervision, child-aides increased more than their control group counterpart regarding styles of interactions with children; specifically, child-aides were less impacted by rejection and more understanding in their work with students. Training and working with challenging students did not lessen the child-aides' natural warmth (Dorr, Cowen, & Sandler, 1973).

Cowen et al. (1975) assessed reactions of child-aides when working with at-risk primary grade students. Specifically, researchers considered the frequency and intensity of situations that produced child-aide discomfort, whether there were meaningful patterns of discomfort experienced by child-aides, whether student problems produced differing levels of discomfort, as

well as the relationship between the frequency of discomfort and how connected the child-aide felt with the student (Cowen et al., 1975). Some situations that caused moderate discomfort included the feeling that the child-aide was not helping the student, the student was physically hurting the child-aide, and not being able to control the student (Cowen et al., 1975). There were three broad sections of meaningful pattern discomfort. The first section is child-aides experienced discomfort regarding the child's family difficulties (i.e., death of a family member, parental divorce, or child disclosure of abuse) and the child's aggression (i.e., student saying he/she hates the child-aide, refusing to obey the child-aide, or stealing something in school). These items produced relatively high levels of discomfort (Cowen et al., 1975). The second section was comprised of the student was getting too close to the child-aide (i.e., bringing gifts to the child-aide, wanting to see the child-aide during the summer, or wanting to do a single activity with the child-aide). These items did not produce high levels of child-aide discomfort. The last section, which produced a high level of child-aide discomfort was comprised of student's limit-testing behaviors (i.e., refusing to leave the classroom, running away during session, refusing to leave session, harming the child-aide physically, or asking to see other child-aides) (Cowen et al., 1975). Situations that child-aides had not yet experienced were rated as the most discomforting. That is, a sense of comfort was experienced by child-aides when they experienced challenging situations and were able to handle them; therefore, great feelings of discomfort were exacerbated by the unknown happenings in session (Cowen et al., 1975).

With the use of child-aides providing interventions to students, Cowen, Gesten, Wilson, et al. (1977) evaluated effective delivery components in order to incorporate them more into prevention programs. Therefore, process activity form was developed in order to asses child-aide interactions and how they changed over time, how the interactions compared between groups of

students, student mood throughout the interventions, as well as comparisons of child-aide

qualities and the frequency of interactions (Cowen, Gesten, Wilson, et al., 1977). Consequently,

it was found that students had predominantly positive moods overall; however, the mood became

more positive as the session progressed. It was determined that students both looked forward to

and enjoyed their contact with the child-aides (Cowen, Gesten, Wilson, et al., 1977).

Alternatively, child-aides were more satisfied with sessions that began with a reactive student

(i.e., positive or negative) rather than a neutral child. Additionally, child-aides were not satisfied

with sessions in which the student ended the session in a predominantly negative mood (Cowen,

Gesten, Wilson, et al., 1977). Child-aides were most pleased with interventions in which the

student's end mood was positive, especially if the beginning mood had been negative (Cowen,

Gesten, Wilson, et al., 1977). Regarding specific interventions, shy-anxious students favored

symbolic mode of expression, whereas acting-out students favored a more verbal mode of

expression; child-aides rated higher levels of satisfaction when each group of students' specific

mode was predominant (Cowen, Gesten, Wilson, et al., 1977). Lastly, child-aides reported

satisfaction with sessions that involved "significant happenings" (p. 356) as they felt productive

and satisfying when students' problem behaviors were making progress (Cowen, Gesten, Wilson,

et al., 1977).

Many aspects impact the outcome of helping interventions. Consequently, Cowen,

Gesten, and DeStefano (1977) assessed child-aides' views and treatment expectancies about

students with differing school adjustment problems. Child-aides were asked several questions

regarding their students; specifically, how appropriate was the student for Primary Project , how

difficult or easy is it to work with such a student; how enjoyable is it to work with such a student;

and what kind of outcome or prognosis is likely for the student through Primary Project (Cowen,

Gesten, & DeStefano, 1977). Results showed that child-aides believed the shy-anxious students were the most appropriate for the Primary Project intervention, the easiest and most enjoyable group with which to work and had the most favorable prognosis. Additionally, child-aides did not view the students having learning problems as being appropriate for Primary Project ; specifically, they believed that the program was most appropriate for students with behavioral and emotional issues rather than educational problems Primary Project (Cowen, Gesten, & DeStefano, 1977). Lastly, students with acting-out behaviors were viewed as the most difficult with which to work Primary Project (Cowen, Gesten, & DeStefano, 1977).

Similarly, DeStefano et al. (1977) assessed teacher judgments regarding the treatability and prognosis of students with differing types of school adjustment problems in order to determine if teachers shared similar views as child-aides. Teachers showed similar beliefs regarding students with shy-anxious and acting-out behaviors were more appropriate candidates for Primary Project than students with learning problems (DeStefano et al., 1977). Similarly, teachers viewed children with acting-out behaviors as more difficult and less enjoyable with which to work (DeStefano et al., 1977). Teachers shared the same views regarding the prognosis of shy-anxious students as having the best prognosis for overall treatment. Though teachers' views matched child-aide views overall, teachers beliefs were more polarized; specifically, teachers assessed problem children as less appropriate referral candidates, more difficult, less enjoyable with which to work, and as having less favorable prognoses overall than did the ratings of child-aides (DeStefano et al., 1977).

### Mental Health Professionals

Child-aides are trained and supervised by school psychologists, social workers, and mental health professionals in order to provide direct helping interventions to maladapting

primary students. Dorr, Cowen, and Kraus (1973) assessed mental health professionals'

acceptance and evaluation of nonprofessionals or child-aides. Specific evaluations included the

child-aides' effectiveness with children, ease of working with others, and acceptance of

supervision (Dorr, Cowen, & Kraus, 1973) There was an "overwhelming positiveness" (p. 263)

regarding mental health professionals views and assessment of the child-aides (Dorr, Cowen, &

Kraus, 1973). The aides were seen as doing a good job in all areas of their functioning; therefore,

it is believed that child-aides are effective help agents (Dorr, Cowen, & Kraus, 1973).

Similarly, Ginsberg et al. (1985) assessed mental health professionals' satisfaction with

their supervision of child-aides, specifically regarding change observed in the students receiving

services via Primary Project. Child-aide supervision is provided at two levels. The first level is

comprised of clinical conferences; specifically, an assignment conference to establish

intervention goals and strategies, a mid-year progress conference to evaluate student progress

and potentially modify intervention approaches, and an end of year termination conference to

assess progress and determine a plan for the next school year (Ginsberg et al., 1985). During the

second level, mental health professionals provide individual or group supervision for

approximately three or four hours a month. Overall, Ginsberg et al. (1985) found that students

seen by child-aides whose supervisory experience was judged as satisfactory improved

significantly more on outcome criteria than students whose child-aide supervision was rated less

than satisfactory. However, these results could have been confounded; specifically, mental health

professionals could have judged child-aide supervision relationships more positively in cases

where they believed the student had made progress (Ginsberg et al., 1985).

*Child Factors*

Primary Project has also attempted to identify factors in students, their life situations, their family structure, and experiences that related to good and poor school adjustment. Gallagher and Cowen (1976) found that siblings who developed school adjustment problems had more similar Primary Project referral patterns than unrelated peer pairs. Consequently, it is believed that common environmental pressures within the home impact sibling coping styles. Similarly, Gallagher and Cowen (1977) assessed if birth order affected school adjustment problems and referrals for Primary Project . Students were classified as only, oldest, youngest, or intermediate (middle) children (Gallagher & Cowen, 1977). Main results of this research found that intermediate children had lower acting-out scores than did all other birth order groups; however, intermediate children also tended to score higher than did other groups on the shy-anxious and learning problem aspects (Gallagher & Cowen, 1977). Intermediate children did not have more, or fewer, school adjustment problems than the other groups of sibling order groups, but their referral pattern was less likely to be acting-out behaviors compared to learning problems and shy-anxious behaviors (Gallagher & Cowen, 1977).

In attempt to determine the extent to which indicators of a student's current status differentiates between referred and non-referred to Primary Project, Cowen et al. (1984) assessed four domains for students; specifically, physical and personal characteristics, experienced critical life events, involvement in their school's special services and activities, and aspects of the students' family situations. This study highlighted that referred students to Primary Project were reported to have more frequent health and medical problems, more inadequate coordination, and were judged to be less attractive physically. Additionally, these students had experienced many more recent critical life events than their non-referred peers (Cowen et al., 1984). Cumulative

recent critical life-events related strongly to the likelihood of referral to Primary Project services; similarly, students engaged in special or problem-related services through the school were also more likely to be referred to Primary Project compared to students who engaged in extracurricular activities. Family variables were also analyzed and found that referred students were more likely to have natural fathers absent from the home, unemployed fathers, non-relative adults living in the home, lack of educational stimulation, employed mothers, and more pressure on the students to succeed (Cowen et al., 1984).

Stressful life events have been found to affect individual's adjustment adversely by adding demands that exceed their natural coping resources; however, the nature and context of stressful life events impact both physical and psychological aspects of well-being differently. Consequently, Sterling et al. (1985) analyzed the relationship between stressful life events and the school adjustment of primary grade students. Results of this student found teachers viewed students that experienced one or more recent stressful life events are more maladjusted and less competent than non-crisis peers. Additionally, students that experienced multiple recent stressful life events were judged to be more maladjusted and less competent than those students who had experienced fewer crisis events (Sterling et al., 1985). Consequently, it is believed that recent stressful events are strongly associated with students' school maladjustment.

Previous research purports neglected early school problems have serious later school adjustment in children. Therefore, Lotyczewski et al. (1986) assessed relationships between children's health problems and their school adjustment in hopes to further identify children's risk for school maladjustment. One hundred seventy-nine students, grades one through four, were identified as having significant health-related or medical problems; specifically, acute and chronic illnesses, accidents, and hospitalizations. The Classroom Adjustment Rating Scale

(CARS) and the Health Resource Inventory (HRI) were used to assess students. Lotyczewski et al. (1986) found that children with histories of significant health problems were judged by teachers to have more severe school adjustment problems and fewer competencies than peers with no health problems. Additionally, children with multiple health problems were associated with more serious adjustment problems in school (Lotyczewski et al., 1986). Results are similar to Sterling et al. (1985) highlighting "repeated exposure appears to add cumulatively to the risk of disorder" (Lotyczewski et al., 1986, p. 246).

Previous research has shown that stressful life events have serious adverse effects on children's physical and psychological well-being, and the effects are increased with chronic exposure to stressful events; however, moderating variables can potentially lessen the effects of stressful events. Therefore, Pryor-Brown and Cowen (1989) assessed the relationship between the occurrence of stressful life events or circumstances and maladjustment in children with additional focus on how supportive relationships moderate potential problems experienced in school. Teachers rated adjustment and 503 students, between fourth through sixth grade, self-reported stressful life events, and support measures. Similar to previous findings, Pryor-Brown and Cowen (1989) showed children who experienced many stressful events had more serious school adjustment problems and fewer competencies than their peers who experienced fewer events. Support added significant predictive variance; consequently, greater support relating to better student adjustment (Pryor-Brown & Cowen, 1989).

***Family Factors***

Given that a child's home is the most important influence on how well he/she will do in school, family characteristics were assessed to determine if there are relationships to school maladjustment. Lorion et al. (1977) compared the school maladjustment profiles of referred

children under family pressure to succeed (FPS) academically, and those form environments lacking educational stimulation (LES). Results showed FPS children had significantly more shy-anxious behaviors in school, whereas LES children had more severe learning problems. Additionally, researchers compared adjustment problems with homes perceived as overprotective or rejecting. They found rejected students had more serious acting-out and aggressive problems; alternatively, overprotected students were characterized by heightened anxiety and interpersonal difficulties.

Similarly, Boike et al. (1978) assessed four-family background situations and their impact on non-referred students; specifically, lack of educational stimulation in the home (LES), family pressure to succeed (FPS), economic difficulties in the home (ED), and general family difficulties (FD). Students in LES home situations were more prone to learning problems; additionally, these students were underdeveloped in socialization and rule-following skills. Weaknesses in these competencies were found to increase acting-out problems in these students (Boike et al., 1978). Students experiencing FPS were more consistently associated with increases in anxiety than control peers. Consequently, Boike et al. (1978) found relationship between family and school problems are similar for referred and non-referred students.

Previous research highlighted beliefs regarding family size and potential effects on a child's personality development, characteristics, and problems. Consequently, Searcy-Miller et al. (1977) assessed primary grade children from small (two children) and large (five or more children) families on teacher ratings of school maladjustment. Results of this study found students from small families scored higher on aggression, acting out problems, impulsivity, and fighting compared to students from large families (Searcy-Miller et al., 1977). Additionally, students from large families had significantly more serious learning problems, such as reading

problems and underachievement, than did students from small families (Searcy-Miller et al., 1977). Students from larger families also were more maladjusted on items such as unresponsive and lacking self-confidence than students from small families. Though there were no significant differences in overall adjustment differences between the two groups, each group had specific or prominent type of school adjustment problem (Searcy-Miller et al., 1977).

Felner et al. (1975) assessed referral patterns to Primary Project for students who experienced crises and the effects of parental divorce or death on students. Research results found students experiencing crises such as parental divorce, or parental death show greater school maladjustment than peers without such histories (Felner et al., 1975); however, their referral patterns differed depending on the crises. Students who experienced parental death exhibited heightened shyness, timidity, and withdrawal, whereas students who experienced parental divorce had higher levels of acting-out and aggressive referrals to Primary Project (Felner et al., 1975). Consequently, crisis events experienced by children have negative consequences for school adjustment. Given previous research on educational stimulation in students' homes and the impact on school adjustment, Felner et al. (1980) assessed if children of divorce or parental death experienced more family disorganization than students without similar experiences. Consequently, it was found that students with histories of parental separation/divorce experienced lower levels of educational stimulation from parents as well as greater parental rejection and economic stress compared to homes disrupted by parental death or from intact families (Felner et al., 1980).

Earlier research findings showed children with histories of parental separation/divorce or death experienced school adjustment problems, Felner et al. (1981a) assessed if students experiencing these crises events have different health resource patterns as well as problem

referral profiles. Similar to previous studies, Felner et al. (1981a) found that students with a history of parental divorce/separation showed more significant overall school adjustment issues than children without similar histories; specifically, these students had more serious acting-out problems. Additionally, teachers rated these students as having fewer competencies than non-crisis control groups; that is, students having experienced parental divorce or separation had a more difficult time coping with class rules and showed lower levels of frustration tolerance and peer sociability (Felner et al., 1981a). Felner et al. (1981b) assessed Primary Project interventions and effectiveness for students experiencing parental divorce or death. Study results found that child-aide perceptions of children experiencing these crises events were different from teachers' perceptions; specifically, teachers experienced greater acting-out problems and behaviors than did child-aides working with these students one-on-one (Felner et al., 1981b). Consequently, it is believed that the deficits in coping skills related to following rules and tolerating frustrations could be helped dramatically through accepting and supportive child-aide interventions whereas a more demanding and impersonal classroom interaction could exacerbate the acting-out behaviors (Felner et al., 1981b).

*Effectiveness*

Adaptation to school is a serious challenge for many children; consequently, Primary Project has conducted numerous studies to assess the effectiveness of the program. Therefore, Cowen, Dorr, Trost, et al. (1972) conducted a follow-up study to determine if there were lasting positive effects on students receiving Primary Project interventions. Participants consisted of 36 students who had previously been identified as having school adjustment issues and received Primary Project services through their primary school. The average age was 7.5 years old when the students received Primary Project services, and there was an average of 20 months since last

service (Cowen, Dorr, Trost, et al., 1972). Results of this study showed that mothers and interviewers judged improvement in all areas of the student's functioning; consequently, the area that improved the most was the student's attitude to school. Therefore, it was found that the child-aide interventions, based on connection and human relationship, has the potential for bringing about lasting change in students (Cowen, Dorr, Trost, et al., 1972). Overall, this study was positive as it highlights that Primary Project shows immediate positive effects for students, as well as "enduring positive effects" (Cowen, Dorr, Trost, et al., 1972, p. 238) for both educational and interpersonal needs of students receiving services.

Considering the long-term consequences of early dysfunction and maladaptation to school, Cowen, Pederson et al. (1973) examined psychiatric histories of children 11-13 years after their primary grade years in school. Cowen, Pederson, et al. (1973) found children identified as vulnerable by mental health professionals within their first three years of grade school (i.e., "red tags" p. 444) had higher frequencies in the community-wide psychiatric register. Additionally, researchers found that most children who had noteworthy psychiatric problems were identified at least six or seven years before problems surfaced in the severe form to result in psychiatric registry entry (Cowen, Pederson, et al., 1973). Results highlighted that early screening and preventative programs reduce the likelihood of later, more psychiatric severe casualty.

Early school maladaptation is predictive of later school adjustment problems; consequently, Sandler et al. (1975) adapted Primary Project and implemented the program in an inner-city school. A significant adaptation included implementing an after-school activity group with child-aides and psychologists (Sandler et al., 1975). Overall, results of this study showed the adapted program was effective; specifically, improvement in the students participating in the

50

program was found in both behavioral and emotional adjustment to school. Additionally, improvements were found within the classroom, individual relationships with adults, and group situations with students' peers (Sandler et al., 1975).

The immediate impact has been established for the effectiveness of Primary Project for students that complete the program; however, it is unknown whether completion of the program is necessary for student benefit. Therefore, Lorion et al. (1976) compared students who completed Primary Project (i.e., terminators), students who had participated in Primary Project but did not complete the program (i.e., non-terminators), and students who had no previous Primary Project program contact (i.e., control). At the beginning of the study, all three groups were comparable on ratings of school maladjustment; however, after the study, the terminators were better able to meet the challenges of school adjustment better than the non-terminators and the control group (Lorion et al., 1976). Specifically, the group that completed Primary Project, terminators, had the lowest maladjustment scores across all domains assessed. These research findings highlight the benefit for students completing the Primary Project program as they maintain more positive adjustment (Lorion et al., 1976).

Many schools began implementing Primary Project programs; by 1983, 23 programs were implemented into school districts within New York. Given the implementation of Primary Project programs across the state, Cowen et al. (1983) assessed and summarized program outcomes in order to offer validity generalizability. The Primary Project framework offers flexibility regarding each school's needs; consequently, no two Primary Project programs are identical (Cowen et al., 1983). Therefore, this study's most important contribution was the evidence that each district's Primary Project program is working effectively. Cowen et al. (1983)

51

found that Primary Project offers an alternative for prompt, effective, and preventively oriented services to young students in need.

Given the prolific and extensive research base established with Primary Project, Weissberg et al. (1983) assessed seven consecutive years of program outcome research; specifically, annual cohorts from 1974-75 through 1980-1981. Result findings indicated students utilizing Primary Project services were strongly and consistently judged to have improved in adjustment by teachers, child-aides, and mental health professionals (Weissberg et al., 1983). Overall, Primary Project was found to be the most effective with shy-anxious children compared to those referred for acting-out problems.

The effectiveness of Primary Project has been well established, especially the immediate impact of receiving intervention; however, less is known about the long-term impact on students. Chandler et al. (1984) assessed 61 fourth through sixth-grade students who had received Primary Project services 2-5 years previously. Research questions were comprised of the extent to which Primary Project students maintained the gains evidence at the time the intervention ended as well as how students' current adjustment compared to the adjustment of control groups (Chandler et al., 1984). Student reassessment years after Primary Project intervention found gains established during the initial intervention period were maintained; specifically, teachers' ratings of problem behavior. No significant differences were noted between students receiving Primary Project intervention and control groups on the follow-up assessment. Consequently, this research provides a supporting base for the conclusion that early gains made in Primary Project has long term durability for students (Chandler et al., 1984).

***Summary***

 Primary Project is a highly researched school-based preventative intervention for at-risk primary school students and has been established as an evidence-based practice (Cowen & Hightower, 1989; Substance Abuse and Mental Health Services Administration [SAMHSA], 2017). Through its progress and implementation in schools, many assessments have been developed to measure children's problem behaviors and competencies; specifically through perspectives of teachers, parents, child-aides, and the students (Cowen, Dorr, et al., 1973; Gesten, 1976; Hightower et al., 1987, 1986; Lorion et al., 1975). Additionally, given the importance of the child-aide interaction in Primary Project, several studies were conducted to assess those processes. McWilliams (1972) observed the various types of activity and interventions with child-aides and found differences between referral groups; specifically, academics were most utilized for students with learning problems versus more nondirective or directive play interventions were used with shy-anxious and acting-out behaviors.

Later research found that child-aide satisfaction with interventions was impacted by the students' mood as well as the extent to which significant problems were dealt with during session (Cowen, Gesten, Wilson, et al., 1977). Both child-aides and school mental health professionals judged shy-anxious students to be the easiest and most enjoyable to work with and to have the best prognosis; whereas, students with acting-out problems to be the most difficult and have the poorest prognosis (Cowen, Gesten, & DeStefano, 1977). Additionally, Ginsberg et al. (1985) found that mental health professionals judged higher satisfaction with supervision with child-aides when students showed improvements in their behavioral problems.

Primary Project also sought to identify factors in children and their experiences that related to good and poor school adjustment. Early detection and screening measures found that

students having experienced stressful life events had more serious school adjustment problems and fewer competencies than students not experiencing such events (Cowen et al., 1984; Sterling et al., 1985). Specific crisis events included parental death or divorce; consequently, students having experienced a parental death exhibited more shy-anxious and withdrawn behaviors while those having experienced parental divorce exhibited more acting-out and aggressive behaviors (Boike et al., 1978; Felner et al., 1975, 1980, 1981a, 1981b). Similarly, Sterling et al. (1985) found that children who experience one or more recent stressful life events had more serious school adjustment problems and fewer competencies than students who did not; additionally, the higher stressful life experiences, the more serious the problems and higher the competence decrement. Related studies have shown relationships between family structural characteristics (i.e., birth order, sibling similarity) and family orientations and styles (e.g., parental pressure on child to succeed, lack of educational stimulation, etc.) to the student's school adjustment (Boike et al., 1978; Gallagher & Cowen, 1976; Gesten et al., 1978; Lorion et al., 1977; Searcy-Miller et al., 1977).

Primary Project has conducted over 25 separate program evaluations during its initial years of implementation. Cowen, Pederson, et al. (1973) found students identified as at-risk or "red tags" (p. 444) had higher frequency of later psychiatric issues than did students not identified as at-risk. Consequently, effective intervention is needed for at-risk students for school adjustment and mental health issues later in life. Primary Project has been found to have immediate impact on students' school adjustment (Cowen et al., 1983; Sandler et al., 1975); similarly, students who completed the Primary Project intervention had the lowest school maladjustment scores compared to students who did not complete the Primary Project intervention and control students (Lorion et al., 1976). Most importantly, Primary Project has

been shown to have a lasting positive impact on students who completed the program; specifically, gains have been shown to persist years after students completed the intervention (Chandler et al., 1984; Cowen, Dorr, Trost, et al., 1972). Therefore, the cumulated weigh of the vast Primary Project outcomes studies suggests the program positively impacts young students with school maladjustment issues (Cowen & Hightower, 1989).

**Current Primary Project Literature**

Research has been foundational for Primary Project; consequently, numerous historical studies have highlighted the effectiveness of the program for students at-risk for school adjustment. Many researchers are still assessing the effectiveness of early identification and prevention programs to this day. Quayle (1991) evaluated the effectiveness of Primary Project by assessing the effectiveness of non-directive play therapy with children considered at-risk for school adjustment problems. Fifty-four students in grades kindergarten through third assessed as at-risk participated in the study; consequently, students were randomly assigned to one of three groups: experimental, individual attention control, or no attention control. For the experimental group children received child-centered play therapy while one group received individual time with an adult, and the control group received no treatment for 20 weeks. Quayle (1991) found improvements in the experimental group on learning skills, assertive social skills, task orientation, and peer social skills, as well as increases in initiative, participation, and self-confidence. The individual attention group also made gains; specifically in the acting-out and assertive social skills, initiative and participation, and academic improvement. Quayle (1991) asserted that the primary influence for these two groups could be positive contact with the child-aide. The control group continued to decline in school adjustment.

Nafpaktitis and Perlmutter (1998) evaluated two public schools that adopted Primary Project as their Primary Intervention Program (PIP); specifically, comparing students receiving PIP services with a wait-control population. This research design allowed Nafpaktitis and Perlmutter (1998) to differentiate between treatment effects and improvement occurring due to regularly occurring growth and development as well as from exposure to the school environment in general. Students in grades first through third were screened using a revised measure of the AML; consequently, 40 students at each school were randomly assigned numbers. Students randomly assigned 1 to 20 were assigned to group 1, and those randomly assigned to 21 to 40 were assigned to group 2 (Nafpaktitis & Perlmutter, 1998). Referred students participated in twelve 30-minute individual play sessions once a week with a trained paraprofessional or child-aide. Play sessions were considered nondirective or unstructured allowing the student to select activities with the given play materials and allowing for the child-aide to be a supportive, caring, and available to form a positive, meaningful relationship with the student. Group 1 received PIP services during the first semester while group 2 received services in the following semester (Nafpaktitis & Perlmutter, 1998). Teachers' ratings of students participating in the PIP program were all significantly improved for both groups. Specifically, students improved by becoming more outgoing and confident, getting along better with peers, learning and task orientation; however, the PIP program was not statistically significantly effective at decreasing acting out or increasing frustration tolerance for students as a group (Nafpaktitis & Perlmutter, 1998). Overall, students in both groups made significant gains in school adjustment through the semester they received services; however, students showed some regression in adjustment at the time of follow-up assessment. Though some regression occurred, students did not regress to their baseline levels (Nafpaktitis & Perlmutter, 1998).

Beginning in 2001, Primary Project was implemented into 16 school districts comprised of 21 elementary schools and five preschool sites; consequently, over 7,000 children, preschool to third grade, were screened and over 1,100 children received services through the program (Demanchick & Johnson, 2004). Though many schools and students were impacted, an additional 160 schools in the specific county did not implement the program; therefore, significantly more students could be impacted in a positive manner. Students receiving services through Primary Project improved significantly in task-orientation, behavior control, assertiveness, and peer sociability (Demanchick & Johnson, 2004). Additionally, this study highlights the mental health professionals' satisfaction with the project; specifically, their ability to identify and work with at-risk students indirectly through child-aides that they supervise (Demanchick & Johnson, 2004). Overall, Demanchick and Johnson (2004) found that Primary Project is an effective and cost-efficient program to help at-risk students as well as to avoid more significant problems later.

In 2017, the Children's Institute began a qualitative study to understand the benefits of Primary Project from the view of administrators and teachers within the school system. Specific questions included overall results of the program, success factors that keep schools implementing the program each year, challenges the schools face, as well as essential components of the program (Primary Project, 2017). Interviews were completed at 14 schools that implemented Primary Project and achieved national certification via Children's institute as well as surveys completed by 429 individuals associated with schools that implemented Primary Project. Specific benefits of Primary Project were improved student attendance, better ability to focus and participate in class, improved confidence and social skills, connection with a caring adult, and improved academic achievement (Primary Project, 2017). Five factors were found to be crucial

for Primary Project success; specifically, strong child-aides, support from the school community, teamwork, fidelity to the Primary Project model, and consistency and stability for the school staff. Results of the study also noted challenges and barriers to implementing Primary Project. Respondents shared concerns regarding funding and resource for the program, scheduling and timing conflicts, lack of support from administrators and teachers, family engagement, staff turnover, and space constraints (Primary Project, 2017). Though Primary Project has shown consistently positive results for students, there are barriers to overcome when implementing the program. This study highlights the importance of a committed and consistent staff as well as working and communicating well with school administrators, staff, and teachers in order to implement and maintain a successful Primary Project program (Primary Project, 2017).

Rochester City school district began implementing Primary Project into the schools in 1957. Smith and Lotyczewski (2018) highlight the impact of the program for the 2017-2018 school year. All students in the first and second grades were assessed by their teachers using the T-CRS. Overall, 3,045 students were screened, and services were provided to 598 students across 21 elementary schools (Smith & Lotyczewski, 2018). Approximately 7,500 individual sessions with students were completed, which averaged 13 sessions per student lasting approximately 30 minutes apiece. The T-CRS 2.1 (Hightower & Perkins, 2010) scores indicated positive outcomes for Primary Project and students receiving services. Additionally, child-aide reports indicated positive change in students' initiative and participation, acting-out and responding to limits, shy/anxious behaviors, as well as self-confidence (Smith & Lotyczewski, 2018). School-based supervisors also made recommendations at the end of the school year regarding the students' potential termination from Primary Project services. Only 4% of students were recommended to continue receiving services through the Primary Project intervention

(Smith & Lotyczewski, 2018). This report highlights the significant positive impact Primary Project has on students with school adjustment issues.

Primary Project is one of the most researched and longest-standing school-based mental health intervention and preventive programs in the nation (Cowen & Hightower, 1989; Peabody et al., 2018). Numerous historical and current studies highlight the effectiveness of Primary Project and its positive impact on students' behaviors identified as at-risk. Primary Project programs are imperative in schools to help identify students at-risk as well as implement effective interventions in order to help students succeed behaviorally and academically in their school. Both SEL and Primary Project have been found to positively impact students' behavior and academic processing. Given the recent growth in the field of neuroscience, it is imperative to understand why these programs are effective in helping students integrate information and their emotions in order to succeed academically.

**Neuroscience**

Affective neuroscience posits that emotional processes, specifically subjectively experienced feelings, do play a significant role in behavior and controlling actions in humans (Panksepp, 2004). Panksepp (1992) highlighted seven primary emotional systems; specifically, seeking/expectancy, rage/anger, fear/anxiety, lust, care/nurturing, grief/panic/sadness, and play/social joy. These primal emotions have promoted animal and human survival. Emotions prodded individuals to explore for resources (i.e., seeking), compete for and defend those resources (i.e., rage), escapes from and avoid bodily danger (i.e. fear), and identify potential mates and reproduce (i.e., lust) (Panksepp, 1992, 2004). Then, individuals with their more social orientation acquired the motivational system for nurturing their offspring (i.e., care), the powerful separation distress system for maintaining social contact and social bonding (i.e., grief)

and the complex system stimulating especially young animals to regularly engage in physical

activities like wrestling, running, and chasing each other (i.e., play), which helps them bond

socially and learn social limits (Panksepp, 1992, 2004). Evolution has played a large role in these

primal emotions and individuals' choices made in life. For example, each primal emotion is

either pleasant or aversive; specifically, individuals attempt to approach pleasant ones (i.e.,

seeking, lust, care, play) while trying to avoid aversive ones (i.e., rage, fear, grief). These

primary emotions require no learning; that is, it is not necessary to teach an individual to become

angry, fearful, or panic (Panksepp, 1992, 2004). Similarly, children do not have to be taught how

to play. Additionally, emotional feelings not only sustain certain behavioral tendencies, but also

help guide new behaviors by providing increased and efficient understanding and categorization

of world events (Panksepp, 1992, 2004). Unfortunately, it is not possible to directly measure the

emotional or internal experiences of others at this time; however, study of behavioral actions is

the most direct way to assess and monitor emotions and emotional changes (Panksepp, 2004).

Given the impact emotions have on individuals, their actions, and their behaviors, it is

critical to understand how emotions play a crucial role in daily functioning and throughout life;

especially as emotional processing and integration are imperative for educational and academic

success (Cozolino, 2014; Greenberg & Snell, 1997). Specifically, emotions and integration are

critical for optimal information processing, social and written communication, motivation,

attention, concentration, memory, critical thinking skills, creativity, behavior, and physical health

(Goleman, 1995; Jensen, 1998; Kusche & Greenberg, 1998; Sylwester, 1995). Although

emotional growth takes place throughout life, childhood is a time of especially rapid maturation

(Cozolino, 2014; Schore, 2019b, 2019a). Therefore, understanding neurodevelopment and

integration are critical for teachers, and school administrators to understand to best help students

succeed academically. Similarly, it is imperative for mental health professionals to be informed

neurocounseling clinicians in order to both explain and enhance counseling intervention to best

help clients (Field et al., 2017). Understanding biological effects and neurodevelopment, how

processing and integration take place, as well as the brain's ability to change are all imperative

for neuroscience informed clinicians (Perryman et al., 2019). Play therapy is a common

intervention grounded in neuroscience used when working with children; consequently,

understanding how play and relational experiences impact neural development is fundamental

(Wheeler & Dillman Taylor, 2016).

**Neurodevelopment**

Integration of behavior, emotions, and cognitions during the first decade of development

has critical implications for educators and mental health professionals (Cozolino, 2014;

Greenberg & Snell, 1997; Siegel, 2010). There are several hypotheses on the way the human

brain and its structures are related to each other and how they have developed. Most theories

identify a "hierarchical relationship" (Gaskill & Perry, 2014; Kestly, 2014, p. 40; MacLean,

1990; Panksepp, 2004) where earlier developing regions are embedded and inform the following

developing components. The brain structure developed earliest in evolution is the brain stem; the

next region to develop next is the limbic system (Hudspeth & Matthews, 2016). The limbic

system is comprised of the amygdala, hippocampus, hypothalamus, and the thalamus;

additionally, the limbic system rests next to the brain stem (Hudspeth & Matthews, 2016;

Panksepp, 2004). The last to develop is the neocortex, which is the outer covering that surrounds

the limbic system or the midbrain (Kestly, 2014). Understanding the impact of social experiences

on neurodevelopment is crucial; specifically, the direct impact on structure development and

function (i.e., primary processes) as well as how they shape advanced development (i.e.,

secondary and tertiary processes). Throughout each individual's development, three systems (i.e., brainstem, limbic system, and neocortex) become increasingly interconnected (Badenoch, 2008, 2017).

### *Brainstem*

The innermost and oldest evolutionarily part of the brain is the brainstem, also called the "reptilian brain" (MacLean, 1990; Panksepp, 2004; Siegel, 2010); additionally, the brain stem is the only area of the brain fully prepared for action before birth in full-term infants (Badenoch, 2008). Many vital functions, including those at the necessary level of life maintenance, are performed by the brain stem; specifically, regulating body functions including the immune system, respiration, blood vessel constriction, sleep cycles, as well as reacting to light or sound (Badenoch, 2008; Siegel, 2010). The brainstem directly controls arousal as well as the fight-flight-free array of responses responsible for survival during times of danger (Badenoch, 2008, 2017; Siegel, 2010); specifically, responding to threats by mobilizing energy for fighting off or running away from danger, or by freezing and collapsing in the face of an overwhelming situation (Siegel, 2010). Similarly, the brainstem is also fundamental to the motivational systems utilized to fulfill basic needs of food, shelter, reproduction, and safety (Hudspeth & Matthews, 2016). Therefore, reactivity to threats in order for survival or fulfilling basic needs, the brainstem is playing a significant role (Siegel, 2010). The reptilian brain also stores "innate behavioral knowledge; specifically, basic instinctual action tendencies and habits related to primitive survival issues" (Panksepp, 2004, p. 43). This part of the brain elaborates the basic motor plans animals and humans exhibit each day, as well as primitive emotions such as SEEKING, and some aspects of fear, aggression, and sexuality (Panksepp, 2004). Lastly, information about the functioning of the internal world is transmitted from various parts of the body via the brain stem

62

to be compared with data received from the external environment (Kusche & Greenberg, 1998).

Consequently, the brainstem continuously monitors how one is functioning with the outside

world and all of this takes place at an unconscious level (Greenberg & Snell, 1997).

***Limbic System***

The next layer of the brain is called the limbic system, also called the "mammalian brain"

or "emotional brain" (Badenoch, 2008, 2017; MacLean, 1990; Panksepp, 2004; Siegel, 2010)

and is evolutionarily newer than the brainstem. This area of the brain is not fully mature at birth,

but it develops quickly and is instinctual in its functioning (Kusche & Greenberg, 1998).

Processing multiple aspects of emotion is a critical role of the limbic system. This includes

recognition of emotional expressions on others' faces, action tendencies, as well as storage of

emotional memories (Greenberg & Snell, 1997). This part of the brain increases the

sophistication of basic reptilian emotions such as fear and anger, and elaborates the social

emotions (Panksepp, 2004). Primary emotions are filled with a sense of meaning as the limbic

system attempts to evaluate the current situation; specifically, is this situation safe or not as the

most basic question to be answered. Individuals tend to move toward the safe and away from

situations that are not (Siegel, 2010); consequently, the limbic system motivates individuals to

act in response to the meaning assigned to the specific situation. The mammalian brain also

stores "affective knowledge; specifically, subjective feelings and emotional responses to world

events interacting with innate motivational value systems" (Panksepp, 2004, p. 43).

Additionally, the limbic system plays a critical role in socialization and attachment. At

birth, this region of the brain is comprised mainly of unconnected neurons; however, "these

neurons are primed to form connections through relational experiences" (Badenoch, 2008, p. 15)

with individuals closest. The neural framework formed in these early moments and connections

aid in the development of the limbic system structures. Consequently, the foundation of perception, relationship, and connection relies on early interactions with parents, guardians, or close individuals (Badenoch, 2008). Additionally, the limbic system provides some control over behaviors emitted from the reptilian brain as well as generates basic emotions that mediate basic pro-social behaviors. Emotions elicited from the limbic system that promote pro-social behaviors include maternal nurturance, associated caressive behaviors, separation distress vocalizations, playfulness, and other forms of competition and gregariousness (Panksepp, 2004). Most definitions of the limbic system include the following set of subcortical structures surrounding the brain stem: the amygdala, hippocampus, thalamus, and hypothalamus. All of these structures function at an unconscious level, although individuals become conscious of the results (Greenberg & Snell, 1997).

**Thalamus.** The thalamus is compared to a relay station for incoming information from the environment (Perryman et al., 2019); consequently, the thalamus receives incoming sensory information from the external environment before it is relayed to other areas of the brain (Greenberg & Snell, 1997). Information from the external world, transmitted in the form of energy or chemicals and received through receptors (nerve cells of various types), is carried first to the thalamus; from there, it is sent to other areas of the brain to be decoded, analyzed, stored, or acted on (Greenberg & Snell, 1997). This occurs with data related to sensory modalities such as vision, hearing, touch, and taste; however, not smell (Panksepp, 2004). Alternatively, sensory neurons involving smell are sent directly to the olfactory bulb and cortex (Courtiol & Wilson, 2015). Though there is no direct input from the olfactory sensory neurons or smell to the thalamus, it receives and sends information to primary and secondary olfactory areas (Courtiol & Wilson, 2015). The thalamus has a significant role as a gatekeeper for information; however, it

does not only send information to the cortex.  The thalamus also receives information from the cortex itself, modulates it, and sends it back; consequently, the thalamus plays a role in processing and higher order brain processes such as sleep, wakefulness, consciousness, sensory perception, attention, memory, and cognition (Courtiol & Wilson, 2015).

**Hypothalamus.** The hypothalamus, also compared to a relay station for incoming information, receives signals from the body (Greenberg & Snell, 1997). Together with the pituitary gland, the hypothalamus controls the neuroendocrine system and autonomic functions as well as releasing neurotransmitters and hormones throughout the brain and body in order to maintain homeostasis (Badenoch, 2008, 2017; D. J. Siegel, 2010). Additionally, the hypothalamus is involved in the regulation of drives such as sleep, sexuality, and appetite (Greenberg & Snell, 1997). Last, the hypothalamus translates many social interactions into bodily processes via the hypothalamic-pituitary-adrenal (HPA) axis (Cozolino, 2014).

**Amygdala.** Both the thalamus and hypothalamus relay information to the amygdala, the primary limbic structure involved in the neurobiology of emotion (Greenberg & Snell, 1997) and the home of "initial meaning-making processes" in the brain (Badenoch, 2008, p. 16). The amygdala is a relatively small, almond-shaped structure with multiple connections to other brain regions. The primary function of the amygdala appears to be the interpretation of incoming sensory information in the context of the individual's emotional and survival needs and identifies situations as good or bad in safety terms as well as emotionally related data such as important, interesting, attractive, fearful, distressing, or irritating for example (Badenoch, 2008; Greenberg & Snell, 1997). That is, the amygdala is centrally involved in attention, learning, physiological arousal, and emotion; consequently it specializes in the appraisal of danger and mediates aspects of the fight/flight response and emotional memory (Cozolino, 2014). The amygdala scans

incoming sensory information and experiences to examine minute changes within the internal and external environments; consequently, the amygdala is compared to an alarm system for the body (Greenberg & Snell, 1997; Perryman et al., 2019). The amygdala also mediates anticipatory anxiety and prolonged states of vigilance (Cozolino, 2014).

Another crucial function of the amygdala is assigning emotional meaning to memories. This part of the brain guides decision making and adaptive responses based on past learning and the current situation (Cozolino, 2014). When a powerful emotion is experienced, especially under conditions of emotional stress (i.e., fear), the amygdala imprints the memory with an additional degree of strength or intensity (Greenberg & Snell, 1997). Consequently, individuals tend to have strong memories for experiences that are personal or emotionally. The amygdala is mostly developed by the eighth month of gestation; consequently, individuals can associate a fear response to a stimulus prior to birth (Cozolino, 2014).

Additionally, the amygdala is the seat of implicit memory (Badenoch, 2008, p. 16); that is, emotional memories stored by the amygdala can be evoked and can impact current behavior without ever entering conscious awareness (Greenberg & Snell, 1997; Perryman et al., 2019). In other words, individuals all have unconscious memories, especially for emotionally charged events (e.g., getting hurt, feeling abandoned), that affect their current functioning, without being aware that they have them or that they even realize is a memory (Cozolino, 2014; Greenberg & Snell, 1997). Emotional states and implicit memories can be created without consciousness and individuals can potentially act on them without awareness (Siegel, 2010).

Given that implicit memory is the only form of remembering from birth to approximately 18 months of age (Badenoch, 2008), it is believed that many early childhood experiences, particularly emotionally charged ones (e.g., essential relationships, emotionally traumatic

events), may exert a long-term impact on behavior through this mechanism (Greenberg & Snell, 1997). When an association in the present environment causes an individual to re-experience emotional memories in the present, the person automatically believes that the feelings are occurring in the present, when they are actually associated with memories in the past (Greenberg & Snell, 1997). This phenomenon has a profound effect on relationships in the present, potentially without individuals ever being aware of it (Greenberg & Snell, 1997; Siegel, 2010).

**Hippocampus.** Finally, the hippocampus compiles the information into explicit memories, stores the contextual components of memories, and also transmits the information to the cortex for additional analysis and storage. This aspect of the brain specializes in the organization of spatial, sequential, and emotional learning and memory (Cozolino, 2014). Additionally, the hippocampus plays a critical role in remembering or retrieving information encoded in the past (Badenoch, 2008; Greenberg & Snell, 1997). The nonlinguistic emotional component of memory is stored in the amygdala while the contextual elements are stored in the hippocampus. Therefore, both the hippocampus and amygdala work together in storing memories of meaningful life events (Gaskill & Perry, 2014; Greenberg & Snell, 1997). The hippocampus is believed to mature later in development (Cozolino, 2014), than the amygdala, which may be at least part of the reason why early memories are not available to consciousness (Cozolino, 2014) until approximately three years of age. That is, early in life, the emotional component of specific experiences is stored in the amygdala, but the associated contextual information is not stored in (or possibly stored but later cannot be retrieved from) the hippocampus (Greenberg & Snell, 1997) leading to "childhood amnesia" (Cozolino, 2014, p. 48). Verbal thinking is implicated, in that conscious retrieval of contextual memory in the

hippocampus is enhanced after the development of the ability to think with internal language (on average by the age of five or six) (Greenberg & Snell, 1997).

***Neocortex***

The outermost and evolutionarily newest part of the brain is the neocortex, also called the cerebral cortex or simply the cortex (MacLean, 1990; Panksepp, 2004; Siegel, 2010). Compared to the brain stem and limbic system, the neocortex has much more flexibility in its development and is much more influenced by environmental input; however, it also develops more slowly (Greenberg & Snell, 1997). Additionally, the neocortex is devoted to reasoning and relationship, and it is the most extensively developed aspect of human beings (Badenoch, 2008, 2017; Panksepp, 2004). The neocortex allows individuals to have ideas or concepts and helps give insight into the inner world. This aspect of the brain elaborates propositional logic and cognitive/rational appreciation of the outside world (Panksepp, 2004). Similarly, the neocortex stores "declarative knowledge; specifically, propositional information about world events derived especially from sight, sound, and touch" (Panksepp, 2004, p. 43). This aspect of the brain allows for association a diversity of sensations and innate ideas into perception, concepts, and attributions (Panksepp, 2004).

Similarly, as Siegel (2010) states, the neocortex "allows us to think about thinking" as well as to develop new capacities to think, to imagine, to recombine facts and experiences, and to create. This aspect of the brain also allows for "mind-reading" which is an intrinsic tendency to try to read the minds of significant others around (Panksepp, 2004, p. 72). The cortex allows for secondary processing of emotions at a more refined level than is possible with the limbic system alone, and it also allows for greater (socialized) control over the more instinctual, automatic responses of the limbic system (Greenberg & Snell, 1997). Also, the cortex allows us to

accumulate and combine information over time (from various experiences first processed by the limbic system) to form schemas or templates about the external world. The cortex also contains "association areas" in which sensory data from different modalities can be integrated (tertiary processing), which in turn allows for complex verbal and nonverbal intelligence (Greenberg & Snell, 1997). Additionally, the neocortex not only keeps simpleminded impulses (from reptilian and mammalian brains) under control, it also permits selective and refined expression of primitive tendencies (Panksepp, 2004).

**Neocortex and SEL.** There are many areas of the neocortex that specialize in social, emotional, and attentional processing. The neocortex is comprised of four lobes; specifically, the occipital lobe, parietal lobes, temporal lobes, and the frontal lobe. The occipital lobe integrates bits of visual information into whole or complete pictures (Badenoch, 2008). The parietal lobes process information about touch, pressure, temperature, pain, spatial awareness, sensory comprehension, speech, reading, and visual functions (Badenoch, 2008). The temporal lobes process complex information about smells and sounds as well as plays a role in memory (Badenoch, 2008). The frontal lobes are a part of the cortex that is responsible for the higher-level processing of such functions such as planning, anticipation, attention, concentration, insight, moral conscience, sense of identity, empathy, and altruism (Badenoch, 2008; Greenberg & Snell, 1997). Furthermore, the frontal lobes play an essential role in processing complex information, sustaining attention to relevant versus irrelevant stimuli, and integrating incoming information with prior knowledge (Greenberg & Snell, 1997).

In order to pay attention and concentrate, adequate organization and functioning of the frontal lobe are crucial (Greenberg & Snell, 1997). A well-functioning attentional system must complete several tasks; specifically, identifying essential elements within the environment,

access inactive memories, can rapidly shift attention with the incoming of new information, and ignore irrelevant stimuli while maintaining primary focus of attention. However, attention, concentration, and memory are all powerfully influenced by a child's current emotional state, as well as by the child's overall development (Greenberg & Snell, 1997).

Brain structure and function play a critical role in children's abilities to function and perform well in school. Brain structures associated with regulating emotion, the ventral area of the anterior cingulate, is close to the brain structure responsible for regulating cognitive processes, the dorsal area of the anterior cingulate, such as the maintenance of concentration and attention (Greenberg & Snell, 1997). Beyond being located closely within the brain and prefrontal cortex, these two areas appear to be mutually inhibitory; therefore, when one area is active, the functioning ability of the other area is compromised (Greenberg & Snell, 1997). Consequently, physiologically, students can focus inward on their emotional state or outward on their environment; however, they cannot focus on both at the same time. Thus, a child who is emotionally upset, anxious, depressed, worried, angry, sad, frustrated, traumatized, or otherwise distressed (whose brain is preoccupied with attending to, processing, and managing these painful fillings in the internal world) will find it hard or even impossible to pay attention and concentrate on cognitive schoolwork in the external environment (Greenberg & Snell, 1997). If duress is significant, the amygdala could activate the "freeze response which results in the inhibition of language in highly stressful and traumatic situations" (Cozolino, 2014, p. 21).These dynamics may at least partially explain why poor academic performance and achievement, as well as less than optimal frontal lobe functioning, are frequently found with both internalizing and externalizing types of emotional distress in young school-aged children (Greenberg & Snell, 1997).

70

*Inter-Hemispheric Communication*

The neocortex is also divided into two hemispheres; specifically, the right and left and have specialized functions concerning processing affect (Greenberg & Snell, 1997; Schore, 2019b). Differentiation and specialization within the brain hemispheres allows for diverse functions and higher-level processing (Cozolino, 2014). In the mature brain, coordination between the two hemispheres takes play through the corpus callosum, a bundle of nerve cells that transverse the two sides and allow for communication (Badenoch, 2008, 2017). This is referred to as interhemispheric or horizontal communication. Therefore, the corpus callosum provides a mean for integrating the two hemispheres of the neocortex and two different communication systems; specifically, emotion and language (Cozolino, 2014; Greenberg & Snell, 1997).

Functions mostly mediated by the left hemisphere, or left-mode processing (LMP), include logic, linearity, and literalness (Badenoch, 2008; Cozolino, 2014; Schore, 2019a). Language, linguistic communication, also takes place in the left hemisphere and includes expressive and receptive language, as well as the secondary processing of pleasurable expression of emotions (i.e., happiness, calm, excitement, and love) (Greenberg & Snell, 1997). LMP receives information from the right hemisphere in order to create explanations of events into predictable "cause-and-effect" patterns; additionally, this hemisphere tends to utilize binary system organization isolating information received into "neat packets that give the sensation of yes/no, right/wrong" understanding (Badenoch, 2008, p. 19).

Right-mode processing (RMP) takes in everything at once, is more holistic nonlinear; additionally, it specializes in processing and perceiving spatial and visual information, as well as aspects crucial for social understanding such as sending and receiving nonverbal signals (Badenoch, 2008, 2017; Schore, 2019a). The right brain is responsible for appraising the safety

71

and danger of others and understanding the sense of "emotional self" (Cozolino, 2014, p. 18).

The right hemisphere specializes in the secondary processing of the remaining aspects of

emotional communication; specifically, the sending of unpleasurable emotional signals as well as

receiving of both pleasant and uncomfortable feelings (Greenberg & Snell, 1997). The right

hemisphere responds to negative emotional stimuli prior to conscious awareness (Cozolino,

2014). Consequently, unconscious emotional processing based on past experiences invisibly

guides individuals' thoughts, feelings, and behaviors (Cozolino, 2014). Badenoch (2008) further

highlights specializations within the right hemisphere:

> Mental models of the self, the world, and relationships are generated and experienced via
> the right mode. An integrated map of the body is assembled here, as well as the felt
> reality of our own story – our wordless autobiography as felt in and by our bodies. In
> short, the information necessary for understanding ourselves and others comes as direct
> experiences through RMP. (p. 19)

Additionally, the right hemisphere is more densely connected with subcortical regions than the

left; specifically, the amygdala, and the hypothalamus (Cozolino, 2014; Porges, 2011). Since the

right hemisphere is grounded in bodily and emotional experience, it serves as the foundation for

primitive social brain functioning (Cozolino, 2014).

Linguistic processing, from the left hemisphere, has at least three advantages compared

with nonverbal processing, from the right hemisphere: (1) it permits meta-consciousness, or the

ability to observe and analyze one's thoughts which provide increased ability for self-control; (2)

it allows for sequential thinking; and (3) it provides higher specificity and accuracy (Greenberg

& Snell, 1997). However, nonverbal intelligence has advantages as well; specifically, it allows

for global and holistic thinking, intuition, and faster processing of information (Greenberg &

Snell, 1997). Language requires a relatively long time to learn and is specific to the culture in

which it is used, whereas the emotional communication system unfolds relatively quickly and is

universal. By the end of the first year of life, infants are relatively fluent in sending and receiving messages through emotional communication; however, they are only beginning to speak his or her first words in his or her specific language (Greenberg & Snell, 1997).

Throughout development, there are periods of significant neural growth and organization; this is referred to as critical or sensitive periods (Cozolino, 2014). The right hemisphere has a higher rate of growth during the first 18 months of life. Consequently, vast growth and development of sensory and motor capabilities is noted during this time (Cozolino, 2014). Additionally, attachment and emotional regulation are taking place during this critical period of right brain growth and development. Alternatively, development of the left hemisphere of the brain is slowed during this time. During the second year of life, there is a critical period in the left hemisphere. Language skills and increase locomotion help children extend their exploration of their social and physical worlds (Cozolino, 2014).

Schore (2019a) purports that there are two primary motives of each of the two hemispheres of the human brain; specifically, at a conscious level the left side of the brain concerns itself primarily with power motives while the right is focused in affiliation drives. However, only one perspective can come into conscious focus at a time and as this occurs, the other perspective recedes into the background (pp. 157-158). As a child's right brain is active mostly from birth until two years of age, they thrive on love; consequently, the social, emotional, relational right brain is the foundation for a healthy brain. If this child is adequately cherished, soothes, stimulated, and respected by attunement with an adult ,the right brain becomes a healthy regulator for the motives of the left brain (Schore, 2019a).

Emotions and language are both important for different purposes, and to function in an integrated and optimal way, it is important to coordinate both the right and left hemispheres of

communication (Greenberg & Snell, 1997). Consequently, the corpus callosum is the link

between them to allow a free-flowing passage of information back and forth between the two

domains. Once the communication networks that cross the link have been created, nonverbal

data emanating from the right hemisphere can travel to the left hemisphere; therefore, linguistic

processing allows for meta-consciousness of internal responses to the external environment (i.e.,

emotional awareness) (Greenberg & Snell, 1997). Information from the left hemisphere can also

then travel to the right hemisphere to help clarify, influence, and control emotional processing.

Therefore, to be truly aware of one's emotional experience, he or she must use horizontal inter-

hemisphere communication between the two hemispheres. Badenoch (2008) emphasizes

horizontal integration:

> When the two halves are integrated, meaning that information flows smoothly between
> the differentiated hemispheres via the [corpus callosum], RMP provides the felt context
> for the making-sense activities in the left mode, and LMP provides what we might best
> describe as the calming reassurance of logic and predictability for the right mode. (p. 20)

The corpus callosum begins to develop at the end of the first year of life (Cozolino,

2014). Unfortunately, the development of the corpus callosum in children is relatively slow and

is inter-hemispheric structure and development is heavily dependent upon environmental input

(Greenberg & Snell, 1997). The maturation of the corpus callosum allows for integration of left

hemisphere semantic capabilities with the emotional and somatic networks biased in toward the

right hemisphere (Cozolino, 2014). Verbal identification and labeling of feelings can assist with

horizontal integration; that is, using emotion recognition cues such as feelings of peers by facial

cues mediated by the right hemisphere in conjunction with verbal labels mediated by the left

hemisphere can improve the development of inter-hemispheric communication (Greenberg &

Snell, 1997). Additionally, encouraging children to express emotional experience, at the time

they occurred and retrospectively, also strengthens cortical integration (Greenberg & Snell, 1997).

*Executive Control*

Processing of feelings at a primary level takes place within the limbic system, whereas a more refined, secondary and tertiary levels of processing takes place within the neocortex (Greenberg & Snell, 1997). The limbic system is well prepared to respond quickly as rapid primary processing within the limbic system is crucial for survival; however, secondary and tertiary processing within the neocortex are also vital as they allow individuals to integrate cognitive and emotional data at a more sophisticated level. Secondary and tertiary processing allows individuals to better understand the circumstance and what happened in order to make appropriate plans for further or future action (Greenberg & Snell, 1997).

The rapid speed of the limbic system and primary processing can take place at the expense of detailed accuracy; consequently, then the amygdala becomes activated in a fight-flight-freeze reaction and usurps control without cortical input or awareness, the outcomes can be detrimental (Greenberg & Snell, 1997; Porges, 2011). These situations have been referred to as "emotional hijacking" in situations such as hitting a peer in response to getting hurt on accident. Thus, having executive (prefrontal) control over impulses is important for social adaptation and cultural survival; unfortunately, the neuronal interconnections between the prefrontal cortex and the limbic system develop relatively slowly throughout childhood (Greenberg & Snell, 1997). Therefore, although the frontal cortex plays a role in emotional regulation as early as the first year of life, it takes many more years before it gains executive control over the rapid and impulsive processing of the limbic system (Greenberg & Snell, 1997).

Alternatively, connections between the limbic system and the brain stem, which allow for activation of motor responses without any cortical involvement, develop much earlier in life. Additionally, the sensory and motor areas of the cortex also develop relatively quickly during the first two years (Greenberg & Snell, 1997). Consequently, motor action often follows directly in response to strong feelings in young children (e.g., hitting one's sibling or throwing blocks when angry) (Greenberg & Snell, 1997). These examples of affective and sensorimotor intelligence at work, with no verbal or symbolic mediation needed; unfortunately, when young children experience emotions, they act or react (Greenberg & Snell, 1997).

***Summary***

Neurobiology and neurodevelopment aid in understanding and effectively working with children. There are several hypotheses on the way the human brain and its structures are related to each other and how they have developed. Most theories identify a "hierarchical relationship" (Kestly, 2014, p. 40) where earlier developing regions are embedded and inform the later developing components; consequently, the brainstem, the most reflexive, is the first to develop, then the limbic system develops adding emotional processing, and lastly is the neocortex for higher-level processing. Neurodevelopment impacts children and students in school; specifically, attention, concentration, and memory are all powerfully influenced by a child's current emotional state and development (Cozolino, 2014; Kusche & Greenberg, 2006). For example, neural components associated with emotion regulation and the components associated with cognitive processes appear to be mutually inhibitory; consequently, when one of these areas is active, functioning in the other is compromised. A child who is emotionally upset or distressed will find it hard or even impossible to pay attention and concentrate on cognitive schoolwork (Kusche & Greenberg, 2006). Additionally, inter-hemispheric communication and executive control are

impacted by a child's neurodevelopment (Cozolino, 2014; Greenberg & Snell, 1997). As the corpus callosum develops, the two hemispheres are better able to communicate; consequently, children can integrate both the left and right hemispheres (Hudspeth & Matthews, 2016). Additionally, as neural pathways between the limbic system and neocortex develop, executive control will enhance secondary and tertiary processing.

**Neuroscience and Play Therapy**

Understanding and implementing neuroscience based interventions into therapy is critical. Cozolino (2014, p. 394) outlines common elements are necessary for counseling treatment success; specifically: "a safe and trusting relationship with an attuned therapist, the maintenance of moderate levels of arousal, the activation of cognition and emotion, and the co-construction of narratives that reflect a positive, optimistic self." Integrating brain-based understanding of human development, mental health, mental illness, and behavior is critical for mental health professionals as well as teachers, parents, administrations, and staff in order to better service clients and students (Cozolino, 2014). Similarly, Schore (2019a) stated that "social interactions *between* brains shape emotional circuits *within* brains, especially in early critical periods when brain circuits are maturing" (p. 1). Continuing, he highlighted that emotional interactions reflect right brain-to-right brain affective communication in early development helps shape the individuals' early developing right hemisphere (Schore, 2019a, p. 1). Consequently, communication and interactive regulation involve two-person psychobiological interactions, brain-to-brain social interactions (Schore, 2019a).

As soon as the counseling profession began working with children, play was identified as their natural medium in which to communicate, form relationships, and solve problems (Seymour, 2016); consequently, the symbolic language of self-expression is play. Therefore,

children play out their feelings and experiences. Children engaging in play is dynamic, natural, and self-healing process (Landreth, 1993). Natural play is defined as "not only about personal imagination and self-expression but also about connecting with others and making meaning of one's experience in the social and cultural context. Play is interactional, impacting both the development of the child and the child's environment (Seymour, 2016, p. 10). Therefore, play is a process in which children increase their confidence in dealing with their environment; consequently, self-directed play provides children with an opportunity to be themselves more fully (Landreth, 1993). Children first relate and regulate personal responses to conflict through play; consequently, play impacts children's efforts and handling of conflict through life (Brown & Vaughan, 2010).

Advances in the field of neuroscience highlight that children's cognitive development happens before their language development (Cozolino, 2014; Panksepp, 2004; Schore, 2019b); consequently, children use the medium of play to communicate their awareness of what is happening in their world (Landreth, 1993; Wheeler & Dillman Taylor, 2016). Rather than being able to verbalize their anxieties, fears, fantasies, guilt, and other emotions to others, children use toys to express themselves; consequently, using toys offers safety and distance from their feelings, reactions, experiences, and traumatic events (Landreth, 2012). Play allows children to move toward an "inner resolution" and are then better able to cope with or adjust to problems (Landreth, 1993, p. 18).

Children function primarily through their right brain until the age of five (Ray, 2015; Schore, 2019b) and children under the age of 11 years tend to have difficulty accessing their left brain and communicating about their emotional world through verbal means (Badenoch, 2008, 2017; Landreth, 2012). Consequently, play and play therapy offers a means to connect with and

78

understand a child's inner world. The Association for Play Therapy (APT) defines play therapy as "the systematic use of a theoretical model to establish an interpersonal process wherein trained play therapists use the therapeutic powers of play to help clients prevent or resolve psychosocial difficulties and achieve optimal growth and development." It is believed that through play therapy, children can express outwardly what they are experiencing inwardly (Landreth, 1993).

The field of neuroscience supports the importance of social relationships as well as the power of play to healthy brain development (Schore, 2019a, 2019b; Wheeler & Dillman Taylor, 2016). Previous research has highlighted that play and positive relational experiences impact neurobiology and neurodevelopment; consequently, this research supports the role of play therapy in both identifying disintegration and improving neural integration (Schore, 2019a, 2019b; Wheeler & Dillman Taylor, 2016). Many theories from neuroscience support the power of play and the play therapy process, including (a) encoding of implicit and explicit memory; (b) the polyvagal theory; and (c) neuroplasticity (Wheeler & Dillman Taylor, 2016).

### *Implicit and Explicit Memory*

There are two primary categories of memory; specifically, explicit and implicit memory (Cozolino, 2014). Explicit memories include sensory, semantic, episodic, narrative, and autobiographical memories. Individuals depend on explicit memories for language, remembering and recognizing faces of others, and it plays an important role in emotional regulation, in the formation of cultural identity, and potential for self-awareness (Cozolino, 2014). Implicit memory includes sensory, emotional, and procedural memories, as well as attachment schemas, instincts, inner objects, and transference (Cozolino, 2014). The vast majority of memory is implicit; consequently, these memories impact emotional experiences self-image, and relationships (Cozolino, 2014).

Play allows for implicit learning within social context (Marks-Tarlow, 2012); specifically, preverbal implicit memories are restored or reconsolidated through the process of natural play or play therapy. Children experience the therapeutic relationship established in play therapy as safe; consequently, they are able to engage in right-left-right progression of integration or bilateral integration (Wheeler & Dillman Taylor, 2016). Therefore, by bring implicit memories to the explicit and conscious world, children are able to integrate memories into the autobiographical stories. Often metaphorical play emerges naturally during the play therapy process which allows children to ground their experiences via nonverbal storytelling (Kestly, 2014; Wheeler & Dillman Taylor, 2016). Therapist can then reflect the child's process which in turn helps children begin to find language to express their own experiences. Therapists' reflections, or verbal communication, help integration between the child's right and left-brain hemispheres; consequently, this aides integration between the child's autobiographical and metaphorical understanding of their embodied story (Kestly, 2014; Wheeler & Dillman Taylor, 2016). This process takes place naturally and repeatedly in play therapy as the therapist stays attuned to the child's needs and experiences.

### *Polyvagal Theory*

Porges' (2011) polyvagal theory purports there are three neural systems that continuously assess and match responses to sensory experiences or the environment. The first, and most primitive of responses, is "immobilization" or "freeze" which is the feigning of death in order to survive. This is called the vegetative vagus which controls bodily shutdown ad immobilization (Porges, 2011). The second response is the mobilization system or the fight-or-flight which allows individuals to mobilize and fight or flee from a perceived threat (Porges, 2011). The third is the sympathetic nervous system (SNS) is the smart vagus or social engagement system which

impacts social behavior, communication, and homeostasis when calmed and higher order neural processes are engaged (Porges, 2011). Each system within the polyvagal theory seek safety; consequently, developing and maintaining safety within the therapeutic relationship is crucial (Cozolino, 2014).

Porges' (2011) polyvagal theory explains how the vagal system translates what individuals learn from experience into stable moment-to-moment bodily and emotional reactions in subsequent relationships and situations. Consequently, the vagal system allows for engagement in relationships, co-regulation affect between self and others, as well as internalization to aid in self-regulation (Cozolino, 2014). Vagal tone refers to the system's ability to regulate the heart and other target organs and systems (Porges, 2011). Cozolino (2014) purports:

> Children with poor vagal tone have difficulty in suppressing emotions in situations that demand their attention, making it difficult for them to engage with their parents, sustain a shared focus with playmates, and maintain attention on important material in the classroom. (p. 89)

Lower vagal tone correlates with irritability, behavioral problems, emotional dysregulation, distractibility, reactivity, social withdrawal, impulsivity, insecure attachment depressed mood, and sleep disturbances. Alternatively, higher vagal tone is correlated with ability to self-regulate, emotional regulation, positive social engagement, behavioral organization, secure attachment, higher performance under stress, enhanced attentional capacity, and ability to take in information (Cozolino, 2014). Consequently, enhancing vagal tone can be done through cooperation and emotional regulation derived from ability to regulate with others and their facial gestures, actions, expressions, and vocal communication (Cozolino, 2014). Positive interactions contribute to the building of positive vagal tone, which supports physical health and the ability to engage in sustained and mutually regulating social interactions (Cozolino, 2014; Porges, 2011).

A child's SNS must enter into a calm state in order for the play therapy process to occur; specifically, the child's mind must perceive the play therapy environment to be safe in order to explore and engage. Kestly (2014) refers to this environment as a play sanctuary; that is, an inviting place that is both calm and safe where the child is welcome. Consequently, the play space needs to be stable and predictable for children in order to increase their capacity in which to engage. As children perceive the play space and environment as safe, their SNS begins to calm and engage in "circuitry of play" (Wheeler & Dillman Taylor, 2016, p. 27), which allows them to access their implicit memories and begin integration into their autobiographical stories. Kestly (2014) outlined ways for therapists to create a play sanctuary; specifically, create a space that is inviting to children and that is organized and predictable, incorporate special play areas that include nurturing, aggressive, make-believe, reality, and creativity themes of play, and have flexible boundaries.

*Neuroplasticity*

New experiences and stimuli aid in the development of new connections within the brain and is referred to as neuroplasticity (Wheeler & Dillman Taylor, 2016); consequently, neuroplasticity ensures that neurodevelopment is unique for each individual (Hudspeth & Matthews, 2016). "The foundation for the hope of healing lies in the brain's ability to modify wired-in painful or frightening experiences by [neural] activity" (Badenoch, 2008, p. 11). Neural changes happen through synaptogenesis, the formation of new synaptic connections, as well as through neurogenesis, the differentiation of daughter cells from parental stem cells in the brain (Badenoch, 2008, 2017). Through these processes both structure and function of the brain change; specifically, structure changes happen in response to increased density of synapses that fire repeatedly while function changes as the result of certain kinds of experiences (Badenoch,

2008, 2017). Consequently, great emphasis can be put on positive therapeutic experiences for

when challenging or highly emotional memories surface for clients and then are met with

kindness, empathy, and acceptance, "new synapses carry that particular information throughout

the brain, and blood flow changes course to more soothing paths" (Badenoch, 2008, p. 12).

Therefore, reparative experiences experienced in therapy can enhance neural development and

create positive change. Prior beliefs condemned individuals to certain levels of behavior of

functioning; however, neuroplasticity offers hope for change (Wheeler & Dillman Taylor, 2016).

Through play therapy, children can experience new and safe relationships that begin to alter

previous beliefs about themselves, others, and the world (Wheeler & Dillman Taylor, 2016).

*Summary*

A child's symbolic and natural language of self-expression is play; therefore, children

play out their feelings and experiences. Advances in the field of neuroscience highlight that

children's cognitive development happens before their language development (Cozolino, 2014;

Schore, 2019a, 2019b); consequently, children use the medium of play to communicate their

awareness of what is happening in their world (Landreth, 1993; Wheeler & Dillman Taylor,

2016). Play therapy utilizes children's natural language in order to promote integration,

development, and healing. This takes place in a safe environment or play sanctuary where a child

can calm their SNS and engage as well as their reconnect implicit and explicit memories

(Cozolino, 2014). Additionally, the hope of growth, healing, development, and change lies

within neuroplasticity and individual's ability to alter former neural pathways and develop

healthier views about oneself, others, and the world (Badenoch, 2008, 2017; Wheeler & Dillman

Taylor, 2016). Cozolino (2014) explained this healing process with his work with a client:

> By playing myself, I gave *client* an opportunity to evaluate me in this strange situation.
> Allowing him to save the train gave *client* the chance to demonstrate his competence and

value. He found he could smack me without retaliation and then move closer, testing my safety and acceptance of him. Our play became a dance of bonding, trust building, and attachment. When he finally felt safe, he wanted sustained physical and verbal contact. He showed me what he had lost and what he needed... (p. 9)

**Neural Integration through Play Therapy**

Given the impact of relationships on neuroplasticity, specifically, the potential to inhibit or contribute to integration, corrective experiences via therapeutic relationships are critical as they can facilitate greater levels of regulation, awareness, and integration on numerous levels (Badenoch, 2008; Wheeler & Dillman Taylor, 2016). Kestly (2014) utilizes the "three R's" (pp. 62-63) of recognizing, rely on, and reinforce the tendencies of the brain move toward wholeness or integration through play therapy; consequently, Kestly (2014) does this through Siegel's (2015) nine domains or pathways of integration; specifically, consciousness, bilateral, vertical, memory, narrative, state, interpersonal, temporal, and transpirational or identity integration. First, Kestly (2014) recognizes that clients' play allows for appropriate expression of and processing of emotion. Second, Kestly (2014) relies on the client to move toward wholeness or integration. Lastly, Kestly (2014) reinforces a child's play through therapy by being present and attuned, as well as trusting in the interpersonal sharing and receiving of the other within the relationship as this allows neuroplasticity. Additionally, Kestly (2014) is aware of how the nine pathways of integration are working together for the client.

*Consciousness*

The pathway of integration through consciousness is using awareness to create change and choice (Siegel, 2015). Kestly (2014) purports when the therapist offers an open, accepting, and nonjudgmental space in the play room for a child, that mindfulness within the space is an expression of integrated consciousness. This level of integration involves a felt sense of safety for the client and their brain begins to rewire in patterns similar to the therapist (Kestly, 2014).

The present moment awareness can only be accomplished when the child feels safe and their

SNS is calm. Therefore, it is important to create a playroom that is safe, comfortable for children,

and encourages exploration of the space, the toys, and the therapist (Landreth, 2012; Wheeler &

Dillman Taylor, 2016). Consequently, healthy therapeutic presence can contribute to the safety

within the environment for the child to experience which allows positive change to take place.

Additionally, the therapeutic presence and relationship between child and therapist can also

enable the connection between self and others.

### *Interpersonal*

The pathway of interpersonal integration is connecting intimately in relationship while

retaining one's own sense of identity and freedom (Siegel, 2015). In a safe environment and

therapeutic relationship, play can bring clients' emotional or affective experiences into the

relational space between client and therapist. Kestly (2014) asserts that interpersonal integration

takes place when both the client and therapist are holding the painful or emotional experiences

together as the client feels seen, heard, understood, and comforted; the means of healing.

Consequently, interpersonal connection to a newer depth of intimacy helps the brain integrate

information and input of others by regulating the body, providing balance to emotional states,

and creating self-awareness (Wheeler & Dillman Taylor, 2016). In play therapy, the natural

healing process is encouraged through the interaction between child and therapist as each system

resonates with the other. Facilitative responses communicate trust and belief in the child to make

appropriate and effective decisions as well as to be independent (Landreth, 2012). Additionally,

play therapy interventions such as returning responsibility and allowing the child to lead aide

interpersonal integration as the play therapist provides a nurturing relationship and source of

connection essential for the growing mind and child (Landreth, 2012; Wheeler & Dillman

Taylor, 2016). Therefore, play therapy provides opportunity for deeper understanding of the relational brain and more meaningful connection in relationships.

*Vertical*

The pathway of vertical integration is linking together information from the body proper, the subcortical circuits (i.e., brainstem and limbic areas), and the prefrontal circuits in the right hemisphere and the cognitive awareness of the left hemisphere (Siegel, 2015). Kestly (2014) notes that implicit memories are embodied; consequently, prior to expression, challenging emotions can be trapped in the client's body and subcortical circuitry, unconnected to resources for regulation, and easily triggered. Therefore, physical expression of emotions helps clients move toward vertical integration as it flows out of the body and into conscious awareness (Kestly, 2014). This pathway of integration allows individuals to move from reacting to stressors or triggering events to responding to the experiences from higher order thinking (Wheeler & Dillman Taylor, 2016). Play therapists can provide learning opportunities for clients to begin developing vertical integration through reflections of feeling and content as well as reflections of larger meaning as this combines both emotional and cognitive components allowing for greater levels of awareness of their own bodily sensations (Wheeler & Dillman Taylor, 2016).

*Memory*

The pathway of memory integration is bringing the free-floating puzzle pieces of the past (implicit memories) into explicit awareness (Siegel, 2015). Kestly (2014) highlights that as clients are able to access memories and emotions through vertical integration in the presence of safe therapeutic relationship allows clients to make new connections with the subcortical circuits; consequently, this leads to changes in behavior through memory integration. Therefore, differentiating implicit memories from explicit allows clients to "experience the past as the past,

instead of feeling flooded by emotions, images, sensations, or behavioral patterns" (Wheeler & Dillman Taylor, 2016, p. 30). In play therapy, therapists can use reflection of meaning to increase awareness to an internal struggle that the client is experiencing but cannot recognize cognitively; consequently, this awareness is aiding the implicit memories become explicit (Wheeler & Dillman Taylor, 2016).

*State*

The pathway of state integration is embracing the diverse states of being that embody fundamental drives and needs, such as closeness and solitude, autonomy and dependence, caregiving and mastery, among others (Siegel, 2015). Kestly (2014) asserts that clients store old and painful memories through different states of mind that generally conflict with one another; for example, the mind categorizes a single experience into two or more categories such as abandonment and love. Therefore, state integration refers to how clients resolve these internal conflicts (Wheeler & Dillman Taylor, 2016). Play therapists can reflect the confusion or dissonance experienced through states of disintegration and allows the two (or more) conflicting states to move toward resolution (Kestly, 2014). This development of understanding the conflicting sides validates the child's emotional states through reflections of feeling and reflections of meaning; consequently, this allows fluidity about their experiences (Wheeler & Dillman Taylor, 2016).

*Bilateral*

The pathway of horizontal (or bilateral) integration is linking and balancing the right hemisphere (early developing, rich in the realm of imagery, holistic thinking, nonverbal language, autobiographical memory, and other processes) with the left hemisphere (later developing, responsible for logic, spoken and written language, linearity, lists, and literal

thinking) (Siegel, 2015). Kestly (2014) explains that the state and memory integration taking place in the right hemisphere of the brain begin to naturally move toward words in the left hemisphere; consequently, this movement across hemispheres, either direction, is bilateral integration. When a child is dysregulated bilaterally, there is difficulty in communicating with others as there is a block between emotions and cognitions (Wheeler & Dillman Taylor, 2016). In play therapy, in connecting with the child through the therapeutic relationship, the therapist demonstrates messages of understanding and acceptance (Landreth, 2012). This allows the therapist to connect "right brain to right brain with the child" (Wheeler & Dillman Taylor, 2016, p. 29). Additionally, utilizing reflections of feeling, allow the therapist to label what the child is experiencing in the moment. Therefore, by connecting with the child's right-brain and then reflecting feelings verbally, the therapist is creating opportunities for bilateral integration or connecting the right hemisphere to the left (Wheeler & Dillman Taylor, 2016).

*Narrative*

The pathway of narrative integration is weaving the left hemisphere's narrator function with the autobiographical memory storage of the right hemisphere (Siegel, 2015). Kestly (2014) asserts that as horizontal or bilateral integration takes place, the result is a new narrative that can be spoken. Narrative integration allows individuals to make sense of their experiences as well as moving previous experiences from the present to the past (Wheeler & Dillman Taylor, 2016). Consequently, sharing ones narrative allows for integration of thoughts, sensations, and feelings within the brain. In play therapy, narrative integration or storytelling can take place through art, dance, puppetry, music, or free play (Wheeler & Dillman Taylor, 2016).

*Temporal*

The pathway of temporal integration is finding comforting connections in the face of uncertainty, impermanence, and immorality (Siegel, 2015). Kestly (2014) discusses how a client processing and making sense of a parent's illness and potential death was an aspect of the client's temporal integration. This type of integration allows individuals to embrace and process the dissonance and confusion between the natural desire for certainty along with the natural reality of uncertainty (Wheeler & Dillman Taylor, 2016). In play therapy, children can communicate stories through narrative integration which allows gained awareness of their experiences having a beginning, middle, and end; consequently, as play therapists create a safe and accepting space for children, they can play out events from their past and integrate those into their life story (Wheeler & Dillman Taylor, 2016). Incorporating facilitative responses such as tracking, reflection of meaning, and reflection of content, the child can process internal and external experiences (Landreth, 2012) which aides temporal integration (Wheeler & Dillman Taylor, 2016).

*Transpirational*

The pathway of transpiration integration is the breathing across; awareness of being part of a larger whole (Siegel, 2015). Kestly (2014) states that this domain of integration does not often happen naturally in the play therapy process; however, it can be considered a higher order conceptualization. That is, a larger sense of belonging and understanding through social and community connections (Wheeler & Dillman Taylor, 2016).

*Summary*

The structures and functions of the brain change with experiences within the environment; this includes relationships with others. Therefore, the therapeutic relationship and

safe connections with others can positively influence neuroplasticity and integration (Badenoch, 2008). Play therapy allows for integration within Siegel's (2015) nine pathways through creating a safe environment, reflections of feeling, content, and meaning that aide children in their growth toward wholeness (Kestly, 2014). Consequently, play therapy works directive with advances in neuroscience that highlight the power of relationships to positively impact neural growth and development in children (Wheeler & Dillman Taylor, 2016).

### Child-centered Play Therapy

Children can experience difficulties communicating verbally about their thoughts and feelings; specifically, given advanced in neuroscience, it is now known that children do not have the same developed capacities to communicate as effectively as adults (Blanco, 2009). Specifically, children develop cognitively before they develop verbally (Landreth, 1993). Consequently, the neurodevelopmental delay in language development can hinder communication between children and adults; however, despite the challenges, children are often expected to utilize adult forms of verbal communication (Blanco, 2009). The expectation for children to communicate verbally as effectively as adults is detrimental. Previous research has noted that children express themselves best through the medium of play as it allows for the means of self-expression of feelings, desires, and experiences, connection with others, and eventual self-fulfillment (Schumann, 2005). Therefore, adults and children can communicate through play; specifically, as "toys are children's words and play is their language" (Landreth, 2002, p. 132). There are numerous theories or modalities of play therapy that are effective in working with children. However, child-centered play therapy (CCPT), previously termed non-directive play therapy, has the most robust research support and the most extended history of use (Landreth et al., 2009). Consequently, CCPT will be the main focus.

**CCPT Development and Tenants**

Person-centered therapy, formerly nondirective and client-centered therapy, was founded by Carl Rogers (1942) who theorized an innate desire for individuals to move toward actualization or psychological wellbeing. Rogers (1957) believed that clients could direct themselves to a place of growth, healing, and self-actualization in a trusting and nurturing therapeutic environment; additionally, individuals are most apt to sense their innate drive toward health and wellness when they are accepted unconditionally by others who are genuine and demonstrate empathic understanding (Rogers, 1995). Therefore, when the therapist demonstrated three attributes or core conditions, specifically, congruence (being genuine), empathy, and unconditional positive regard, Rogers (1957) believed that a healing therapeutic environment and relationship was created. Consequently, Rogers (1957) posited six necessary and sufficient conditions for therapeutic change:

1. two persons are in psychological contact;
2. the first, whom we shall term the client, is in a state of incongruence, being vulnerable or anxious;
3. the second person, whom we shall term the therapist, is congruent or integrated in the relationship;
4. the therapist experiences unconditional positive regard for the client;
5. the therapist experiences an empathic understanding of the client's internal frame of reference and endeavors to communicate this experience to the client; and
6. the communication to the client of the therapist's empathic understanding and unconditional positive regard is to a minimal degree achieved. (p. 60)

Consequently, transformation and healing are believed to be nurtured by the quality of the therapeutic relationship that supports clients' natural tendency to actualize, discover, and change (Rogers & Kramer, 1995).

Virginia Axline, a pupil of Rogers, incorporated the concepts and ideals of non-directive therapy (i.e., client-centered, person-centered) to her work with children (Axline, 1947b).

Consequently, Axline (1947b) developed non-directive play therapy comprising of eight basic

principles:

1. the therapist must develop a warm, friendly relationship with the child, in which good rapport is established as soon as possible;
2. the therapist accepts the child exactly as he is;
3. the therapist establishes a feeling of permissiveness in the relationship so that the child feels free to express his feelings completely;
4. the therapist is alert to recognize the feelings the child is expressing and reflects those feelings to him in such a manner that he gains insight into his behavior;
5. the therapist maintains a deep respect for the child's ability to solve his problems if allowed to do so as the responsibility to make choices and to institute change is the child's;
6. the therapist does not attempt to direct the child's action or conversation in any manner as the child leads the way and the therapist follows;
7. the therapist does not attempt to hurt the therapy along as it is a gradual process and is recognized as such by the therapist; and,
8. the therapist establishes only those limitations that are necessary to anchor the therapy to the world of reality and to make the child aware of his responsibility in the relationship. (pp. 75-76)

From 1947 until 1991 nondirective play therapy was being researched and utilized in

work with children (Ray, 2011); however, Landreth (1991) described CCPT in detail, including

an in-depth discussion of the approach. Landreth (1993) argued that CCPT is a "complete

therapeutic system" (p. 19) and not merely basic counseling techniques to be utilized in order to

build rapport with children. Consequently, Landreth (1993) asserted that "child-centered play

therapy is not a cloak of techniques to put on upon entering the playroom, but a way of being

based on a deep commitment to certain beliefs about children and their innate capacity for

growth" (p. 19). CCPT is more than a counseling theory; it is belief or philosophy of a child's

capacity to strive toward growth and be constructively self-directing (Landreth, 2012).

Given the importance of the relationship in CCPT, Landreth (1991, 1993) asserts that

play therapists must see, hear, feel, and experience with the child within the accepting

relationship. These messages are communicated to the child during the session as the therapist lives each message out within the relationship. Specifically,

- I am here. Nothing will distract me. I will be fully present physically, mentally, and emotionally. I am here for the child;
- I hear you. I will listen fully with my ears and eyes to everything about the child, what is expressed, and what is not expressed. I want to hear the child completely;
- I understand you. I want the child to know I understand what he or she is communicating, feeling, experiencing, and playing, and I will work hard to communicate that understanding to the child; and,
- I care about you. I really do care about this little person, and I want the child to know that. If I am successful in communicating fully the first three messages, the child will know I care. (p. 21)

Axline (1947b) and Moustakas (1953) emphasized, and Landreth (1991, 1993) further highlighted, the belief that children internally and innately have the capacity to develop and self-actualize through self-direction when engaged in an atmosphere that is accepting fully of the child. This is an essential component of CCPT; consequently, it is critical that the therapist creates an environment in which the child feels safe and secure (Blanco, 2009). Striving to build and maintain a safe environment can be done through the development of the therapeutic relationship (Landreth, 1991). Incorporating Axline's (1947b) principles, this relationship is marked by empathic responding, limit setting, returning responsibility to the child, and facilitating emotional expression (Ray et al., 2013). Additionally, a play therapist can create a therapeutic environment by providing a fully supplied playroom containing items that the child is not only familiar with, but that also evoke freedom in his or her play (Blanco, 2009). Ray (2011) outlines CCPT principles that include verbal and nonverbal skills; specifically, (a) maintaining a leaning forward, open stance; (b) appearing to be interested; (c) remaining comfortable; (d) having a matching tone with the child's affect; (e) having appropriate affect in responses; (f) frequent interactive responses; (g) behavior tracking responses; (h) responding to verbalizations with paraphrases; (i) reflecting the child's emotions; (j) facilitating empowerment through

93

returning responsibility; (k) encouraging creativity; (l) self-esteem boosting statements; and (m) relational responses. By understanding and accepting the child, the therapist offers an environment that unleashes the child's potential to move toward self-enhancing or self-actualizing, ways of being (Ray et al., 2013).

**Historical CCPT Research and Academic Improvement**

Since the beginning of children's counseling interventions and play therapy, improving academic performance abilities have been emphasized (Blanco, 2009). Historical play therapy research assessed academic improvement in three main areas; specifically, IQ scores, reading measurements, and language development. Consequently, non-directive play therapy was assessed to determine if it could impact a students' ability to learn. Early studies (Axline, 1949; Dulsky, 1942; Leland et al., 1959; Moulin, 1970; Mundy, 1957; Shumaker & Naveh, 1985) attempted to measure the efficacy of play therapy on achievement by placing a high emphasis on changing the child's IQ score over the course of treatment. Several studies (Newcomer & Morrison, 1974; Siegel, 1970) which reported on play therapy with children suffering from language and learning disabilities also demonstrated the use of this treatment modality in academic achievement. The literature also depicts other early experimenters (Axline, 1949; Azar, 1979; Bills, 1950; Elliott & Pumfrey, 1972; Seeman & Edwards, 1954; Winn, 1959; Wishon, 1975) focusing on reading improvement as a measure of academic progress throughout treatment.

*IQ Research*

Early studies investigated the relationship between intelligence and emotion. Dulsky (1942) assessed if it was possible to determine the intelligence of an emotionally disturbed child, questioned if intelligence rating would increase if the emotional adjustment was improved, and

wanted to determine if emotional maladjustment negatively impacted intelligence test

performance. Thirteen children, ages 4-15 years old, participated in the study and presented with

behavioral and personality disorders; specific issues included lying, stealing, cruelty to other

children, destructiveness, enuresis, temper and aggression displays, and fear of other children

(Dulsky, 1942). Participants completed the Stanford-Binet test before counseling interventions

began as well as at the end of treatment. Counseling treatment provided consisted of nondirective

play therapy once a week for approximately one hour. Participants' averaged 17 months in active

treatment. Before treatment, average IQ scores for participants was 99.3; after treatment, IQ

scores increased to an average of 103 (Dulsky, 1942). Overall, participants' scores ranged from a

decrease in 7 points to an increase in 11 points. According to therapist report, all participants

exhibited behavioral improvement throughout treatment (Dulsky, 1942). A small group, eight

participants, were re-examined after an additional year and found an average score of 104.87.

Dulsky (1942) asserted that a functional aspect of intelligence; specifically, intelligence

behavior, or an assessment of present functioning could be useful to assess as intelligence is not

an isolated aspect of a child. That is, intelligence "is a product of the organism's constitution,

health, education or training, culture, emotional adjustment, and personality organization

(Dulsky, 1942, p. 217). Consequently, Dulsky (1942) believed if a significant change took place

in the individual's emotional adjustment, it was logical to expect a change in intelligent behavior.

During this time, standardized tests were often used to determine an individual's

capacity; consequently, once a label of "mental deficiency" (Axline, 1949, p. 313) was attached

to a child's record, the treatment was based on a limited prognosis and opportunities likely

restricted due to limited capacity. Therefore, Axline (1949) wanted to define mental deficiency

and determine interventions that could increase a child's capacity; specifically, assessing if

providing play therapy for children with mental deficiencies would increase their IQ using the Stanford-Binet. Consequently, 15 participants, aged 6-7 years, were referred due to behavior problems, emotional disturbance, and speech problems. Treatment for participants was comprised of 8 to 20 sessions of individual non-directive play therapy (Axline, 1949). Participants were divided into three groups which consisted of children with low IQ scores and children with average range scores. The first group consisted of children whose IQ remained at a low level, the second group comprised of children whose IQ improved, and the third group consisted of children with normal-range intelligence whose IQ scores did not change. The first group, children whose IQ remained at a low level, had mother's expressing shame, disapproval, and rejection of the children, further emphasized by their desire to send away the child. Axline (1949) purported these children were likely victims of extreme emotional deprivation.

Additionally, therapists working with these children felt that therapy was unfinished or incomplete and additional services were needed to have a favorable prognosis. The group whose IQ increased were characterized as rejected children, similar to the first group; however, they engaged in more symbolic expression through the toys and play activity as well as engaged in establishing relationships with the therapists (Axline, 1949). The third group, normal IQ range that did not change, were more verbal than previous groups, which assisted in understanding the relationship between emotions and the child's total behavior. Overall, Axline (1949) found that in all groups, providing play therapy did not lower a child's IQ score and for one group significant increases were reported. Axline (1949) proposed interventions that could help children develop capabilities for emotional tensions, frustration tolerance, conflict resolution, and improvement in deficiencies instead of "anchoring the individual forever in one spot" (p. 327).

At this time in history, it was believed to be inadvisable to conduct psychotherapy with individuals with mental deficiencies due to their limited insight and poor verbal development; however, Mundy (1957) questioned if individual therapy could alleviate emotional disturbance in this population of children. Two groups of children were created; the first comprised of children with mental retardation and reduced functional capacity, while the second was comprised of students with emotional issues but better mental ability (Mundy, 1957). Participants participated in non-directive play therapy for approximately nine to twelve months. It was hypothesized that the crucial factor in therapy was emotional and not intellectual comprehension; that is, emotional processing was more critical in therapy rather than participant verbalization. Overall, results of this study found that client resistance to non-directive play therapy hardly existed with this population of children; consequently, Mundy (1957) hypothesized this was due to the "unnatural life these children lead and their starvation for affective contacts" (p. 8). Client aggression decreased dramatically within their first few sessions; additionally, throughout therapy, temper tantrums, crying, seclusiveness, and aggression ceased. Verbal ability developed in each client; specifically, at the beginning of the study, clients' speech was similar to an 18-month-old infant (i.e., one-word statements), within a few months of therapy, clients started forming whole sentences, and by the end of the study, clients were producing normal speech. Mundy (1957) hypothesized this development in language ability was due to clients' increased desire to communicate and connect within therapy. Mundy (1957) discovered a statistically significant difference of an average increase of seven points between the experimental group IQ scores compared to the control group. Mundy (1957) further reported that with the increase in IQ scores the child's social adjustment scores also increased. Mundy (1957) noted that upon termination

children from the experimental group appeared to be more spontaneous and displayed less anxiety.

Many psychotherapy approaches had previously failed for children with low IQ; however, Leland et al. (1959) questioned if non-directive group play therapy would be an effective treatment for this population. Eight boys between the ages of four and nine were chosen to participate; consequently, each participant was enrolled in special education and had behavioral problems. One group was created and met daily for non-directive group play therapy. This intervention consisted of free play, unstructured games and activities, and limits if necessary. Participants completed the Wechsler Intelligence Scale for Children (WISC) before and after the ninety therapy hours of group play therapy intervention ended (Leland et al., 1959). Results showed an average increase of 3.6 on Verbal IQ, an average increase of 6.5 on Performance IQ, and an average increase of 2.9 on the full WISC IQ scale; additionally, daily incident reports from attendants at the facility found better adjustment and fewer behavioral problems from the participants (Leland et al., 1959). A follow-up study was conducted seven months later found that improvements continued after the intervention concluded. Specifically, one participant was discharged, one was up for discharge, two continued to improve in performance and lessening of behavioral problems, and another made no further gain (Leland et al., 1959). Consequently, Leland et al. (1959) found that non-directive group play therapy "activated intellectual potential" (p. 851) in participants where other psychotherapy approaches had previously failed.

Previous research has highlighted the positive impact of play in children; specifically, increases in levels of imaginative play behavior has shown gains in positive affect, decreased aggression and hyperactivity, increases in social cooperation, interaction, and perspective role-

taking. Additionally, as imaginative play increases, so do scores on IQ tests. Imaginative play is a critical component of non-directive play therapy. Consequently, Shumaker & Naveh (1985) conducted a study assessing structured versus unstructured play therapy with young children. One hundred sixteen children with an average age of 4.7 years were randomly assigned to one of four groups: unstructured experimental intervention, structured experimental condition, attention control group receiving skills training, or a non-intervention control group. Results of this study showed children receiving play therapy interventions increased in imaginative play as well as showed gains in verbal fluency, flexibility and originality, imaginativeness of stories. Additionally, these children had increases in verbal IQ scores, comprehension, and internal locus of control (Shumaker & Naveh, 1985). No differences were found between structured or unstructured play therapy.

***Reading Improvement Research***

Another factor used to measure a child's ability to perform academically is his or her ability to read. Previous research posits that children do not learn how to read until they have "reading readiness" which is comprised of: appropriate mental age, social and emotional maturity, experiences that give meaning to vocabulary, adequate skills to translate symbols into meaningful words, and adequate vision, hearing, and speech (Axline, 1947a, p. 61). In this study, Axline (1947a) helped teachers implement a therapeutic environment, mimicking non-directive play therapy, in order to create a learning environment comprised of respect for the child, ample mediums for self-expression, and acceptance. Consequently, the main objective was to help children develop in a relaxed, supportive, and free environment in the hopes that the children would gain a better understanding of themselves and their capabilities (Axline, 1947a). Thirty-seven second grade students were identified as poor readers and were placed in the therapeutic

class; eight students received weekly individual play therapy sessions. Participants were assessed on reading scores (i.e., words, sentences, and paragraphs) before and after the approximate four-month intervention. Using the Gates Reading Test, average improvement consisted of 4.7 words, 4.3 sentences, and 5.8 paragraph gains after the therapeutic learning environment intervention compared to an average expectation in growth of 3.5 in each area (Axline, 1947a). No additional reading instruction was given in this intervention and reading class attendance in the therapeutic environment was optional for students; however, given the accepting and caring environment created by the teacher, students joined the reading groups regularly. Additionally, Axline (1947a) found that four children had significantly improved IQ scores and all of the children's reading ability increased without the use of traditional remedial reading instruction. Axline (1947a) highlighted the importance of creating an atmosphere that was accepting and that limited the pressure of failure in order to better help students learn to read.

Poor reading in young students was previously thought to be the result of poor teaching or the inability of the child to learn by conventional procedures; however, Bills (1950) hypothesized that nondirective play therapy could help students in changing attitudes toward themselves or in re-evaluating their self-concept which would lead to increases in reading ability. Eight students identified as poor readers participated in the student and received both individual and group non-directive play therapy. Results of this study found significant changes in reading ability occurred as a result of the play therapy experiences; additionally, these changes, both personal and academic, occurred in as little as six individual and three group sessions (Bills, 1950).

If reading disabilities are in part caused or effective by emotional adjustment in children, Fisher (1953) hypothesized that non-directive group play therapy would help alleviate the

100

disability. Twelve participants receiving remedial reading instruction participated in the study. Age range of participants was approximately 10-13 years of age; however, participant reading ability, designated by reading age, ranged from approximately 6-9 years of age.

Given the positive non-directive play therapy effects found by Axline (1947a) and Bills (1950), Seeman and Edwards (1954) hypothesized that a therapeutic approach to teaching will positively impact changes in student personality and in reading performance. Thirty-eight students in the third grade, identified as low in reading achievement were placed with a teacher who had been trained to provide non-directive play therapy within the classroom; additionally, the teacher then met with the identified students in groups for half an hour each day (Seeman & Edwards, 1954). Students engaged in the therapeutic classroom environment showed significant reading gains compared to the control group comprised of a conventional teaching environment; however, no changes in personality were established. Results of this study highlight the finding that therapeutic experiences at school and within the classroom can aid intellectual function (Seeman & Edwards, 1954). Additionally, the effects of students feeling free to learn in a non-directive environment can have a significant impact on academic improvement.

As previous studies found significant increases in reading ability after students participated in non-directive play therapy, the link of personality was of continued interested. Consequently, Winn (1959) assessed personality changes and reading improvement through play therapy interventions. Twenty-six students in the third grade were selected for participation and randomly assigned to an experimental or control group. The Rogers Test of Personality and the California Reading Achievement Test was given to both groups before and after the intervention. Experimental group participants engaged in weekly individual play therapy sessions for approximately 45 minutes per session while the control group did not receive the play therapy

intervention. Results of this study found an average increase of 1.38 on the California

Achievement Tests for the experimental group compared to 0.96 increase for the control group.

Winn (1959) contributed the greater increase in reading ability for the experimental group to

positive changes in personality; specifically, a significant difference between groups shown by

an average increase of 13.1 on the Rogers Test of Personality for the experimental group as

compared to a decrease in 2.0 in the control group. Winn (1959) focused specifically on

personality changes (i.e., self-confidence) and the student-teacher relationship in their impact on

increasing reading ability. Consequently, this research highlights the personality component of

self-concept impacting students' reading abilities.

Continuing to assess the effects of non-directive group play therapy on reading

attainment and improvement, Elliott and Pumfrey (1972) replicated Bills (1950) study. Twenty-

eight boys between the ages of seven to nine years were selected to participate in the study due to

low-average intelligence and poor reading attainment and were randomly assigned to a control or

experimental group. Personality, intelligence, reading ability, and social adjustment were

assessed at the beginning and after the intervention. The experimental group participated in nine

weekly, one-hour sessions of non-directive group play therapy while the control group did not

receive any play therapy intervention. Neither group received additional reading or remedial

tutoring. Short term non-directive group play therapy intervention did not show significant

differences between the experimental and control groups on social adjustment or reading

attainment. Although no statistically significant differences were found, eleven out of the sixteen

participants in the experimental group improved on social adjustment. Elliott and Pumfrey

(1972) later stated, "The more intelligent and emotional children in the experimental group

tended to improve in social adjustment after therapy" (p. 160). This finding may suggest that the impact of play therapy may be present but not measured.

Combining aspects from IQ research and reading behaviors, Wishon (1975) assessed the relationship of a play therapy intervention on reading achievement and certain personal-social developmental aspects of first-grade students. Controlling for IQ scores, thirty students were randomly assigned to a control or experimental group; consequently, the experimental group received 30-minute play therapy sessions twice per week for 16 weeks. Overall, Wishon (1975) found that all participants scores significantly higher on reading achievement, regardless of group; consequently, there were no statistically significant differences between the groups. Similarly, no statistically significant differences between groups were found on the personal-social development measures. The children provided with play therapy scored higher on the reading achievement assessment for word recognition, but it is unclear to what degree the treatment was a factor; specifically, students in the experimental group scored higher but not to a statistically significant degree (Wishon, 1975).

Azar (1979) measured and compared the changes which occurred in the child's self-concept and his or her reading abilities, as a result of participation in play therapy and a reading enrichment "club." Azar (1979) believed

> the more the child is stimulated, encouraged, and enabled to get to know his unique self, becomes free enough to express himself, and proud of that self which is his alone, the greater his improvement must be in the academics as well. (p. 1)

Consequently, Azar (1979) hypothesized that an inability to feel good or comfortable with oneself could interfere with reading skill development. Therefore, forty elementary school students were randomly assigned to one of two treatment groups to assess self-concept and reading abilities. One treatment group received individual play therapy sessions while the other

treatment group received reading enrichment. After three months of treatment, Azar (1979) found the play therapy treatment group showed higher real self-concept and higher ideal self-concept; additionally, this treatment group also scored better on assessments of reading and subtests of the SAT (i.e., reading comprehension, word study skills, and listening comprehension) compared to the reading enrichment treatment group. Consequently, this growth highlights the effect play therapy can have on developing a child's confidence by increasing his or her self-concept. This increased confidence in their academic abilities may have an impact on his or her academic achievement. Azar (1979) concluded, "It appears that play therapy is the necessary vehicle to raise and effect change in a child's self-concept" (p. 103).

*Learning and Language Disabilities Research*

During this time, students identified as having learning disabilities were required to participate in remedial programs in the form of special classes or tutorials; however, no counseling services were required. However, Siegel (1970) assessed the effectiveness of a variety of treatment modalities with children diagnosed with learning disabilities. The primary treatment experience was educational and comprised of special education or tutoring. The secondary treatment experience was psychotherapeutically comprised of play therapy, parental counseling, a combination of play therapy and parental counseling, or none. Consequently, Siegel (1970) investigated the effectiveness of primary and secondary interventions as well as combinations of the two. Forty-eight children in 2nd-5th grade were selected to participate as they met the criteria of having average IQ, negative psychiatric history, presence of psychomotor disability, and a diagnosis of a learning disability. A comparison of the primary intervention effectiveness, students who participated in special classes improved significantly on measures of parent attitude and child achievement interactions compared to students receiving tutoring

intervention. No difference was found between child and parent adjustment between primary

interventions; additionally, the effect of the teacher was not found to be significant in the

remedial process. Regarding secondary intervention, significant improvements were found in all

three areas regardless of audience (i.e., child, parent, both); specifically, (1) parent attitude and

child achievement interaction; (2), child and parent adjustment interaction; and (3) psychomotor

functioning and intelligence interaction. These scores were significantly higher than the group

that did not receive counseling interventions. Additionally, Siegel (1970) found that students

who received play therapy improved more in achievement than those who received tutoring.

Improvements in parental attitude also improved meaning parents noticed improvement in the

functioning of the students. Lastly, Siegel (1970) noted significant improvement of psychomotor

functioning and intelligence in those participating in play therapy compared to special classes

and tutoring.

Moulin (1970) continued the work of previous studies of play therapy on intelligence by

exploring client-centered group play therapy, achievement, and language development. Twenty-

four students in first through third grades were qualified as underachievers academically;

consequently, these students were randomly assigned to the control or experimental group. The

experimental group was then divided into two groups of six students for group play therapy

interventions. Client-centered group counseling using play media was utilized and implemented

for each group one day a week, for one hour, for twelve weeks. The control group did not receive

any intervention. Moulin (1970) found that the subjects receiving treatment made significantly

more significant gains in the assessed mean for non-verbal intelligence than the subjects not

receiving treatment. Moulin (1970) stated

> If under-achieving primary school children interact with other children and a counselor
> over a period of time using client-centered group counseling not only will these children

significantly increase their non-language functioning, but they will significantly increase various aspects of their meaningful language usage. (p.95)

This data revealed that providing play therapy was significant in improving the communication skills of underachieving primary students.

With the previous studies highlighting the impact of non-directive play therapy, Newcomer and Morrison (1974) investigated the impact of non-directive play therapy on developmental levels of individuals with mental deficiencies; specifically, across for domains of intellectual-social functioning: gross motor skills, fine motor-adaptive skills, language skills, and personal-social skills. Both group and individual play sessions were used and compared to a control group that did not receive an intervention. Play therapy interventions took place over three 10-week periods; the first and third blocks were directive play therapy, the second was nondirective. Scores on the Denver Developmental Screening Test showed students receiving individual and group play therapy consistently increased over the 18 weeks of intervention, while the control group remained unchanged (Newcomer & Morrison, 1974). No differences were found between individual and group play therapy sessions or between directive or non-directive play therapy approaches within the experimental group.

*Summary*

From the beginning of children's psychotherapy, improving academic abilities has been prioritized. Historical data suggests that participating in play therapy can increase the IQ scores of children with emotional, physical, cognitive, and learning problems. The early studies of Axline (1949), (Dulsky (1942), Mundy (1957), and Shumaker & Naveh (1985) suggest that providing play therapy to children can help increase their IQ scores and thus their ability to learn in the classroom. Providing play therapy for children with learning disabilities was also significant in improving the academic abilities of children. Improvements in motor functioning

and learning difficulties were reported by Newcomer and Morrison (1974) and Siegel (1970).

Additionally, a link was highlighted between students' self-concept and academic achievement.

Moustakas (1959) emphasizes the relationship between a child's self-concept and his or her

abilities; specifically,

> The disturbed child has been impaired in his growth of self. Somewhere along the line, he began to doubt his own powers for self-development. His faith in himself and his self-reliance have been shattered. He does not trust himself and he does not trust others. He is unable to utilize his potentiality to grow with experience. (p. 27)

Consequently, the link between personality and belief about self were also assessed and found to

be a significant aspect of achievement. Non-directive play therapy has been found to positively

impact IQ scores, reading achievement, and language development.

**Previous CCPT Studies and Academic Success**

Historical studies assessing non-directive play therapy found increases in specific aspects

of IQ score increase, reading improvement, and language development. However, research began

to highlight additional emotional and behavioral components, potentially contributing to those

gains. Consequently, research in the late 1980s, 1990s, and early 2000s began to focus on play

therapy and its impact on academic success; specifically, measuring reading achievement

improvements to link play therapy with academic success (Boehm-Morelli, 1999; Crow, 1989;

Kaplewicz, 1999; Lopez, 2000). Additional studies during this time (Shechtman et al., 1996)

assessed if participating in play therapy increase students' ability to succeed in school

academically.

The ability to read is the foundation for achievement in many areas in academia;

therefore, children who experience failure in reading often experience difficulties in other

academic areas. Lack of academic success, in turn, can lead to social maladjustment and

emotional problems. Unfortunately, failure in reading can contribute to students regarding

themselves as failure; this experience is often one of hopelessness and lack of control (Crow, 1989). Consequently, Crow (1989) attempted to determine the therapeutic effectiveness of play therapy on low achievers in reading, self-concept, and locus of control. Crow (1989) hypothesized that exposing a child to a positive environment provided by play therapy would increase the child's capacity to learn, would improve self-concept, and crease a desire and motivation to read. Twenty-two first grade students participated in the experimental group while twelve participated in the control group. The experimental group received one 30-minute play therapy session per week for ten weeks. Crow (1989) found that students participating in play therapy had significantly higher self-concept and locus of control than those in the control group; however, no significant difference in reading was found between the two groups. Crow (1989) suggested, "Even though numerical data did not indicate that the treatment had a positive effect on reading, anecdotal evidence suggests that behaviors were changing, which may facilitate improvement of reading ability over a period of time" (p. 92). Consequently, ten play therapy sessions might not be sufficient in this study. Crow (1989) highlights the relationship between low self-concept and low achievers in reading; additionally, emphasizing the impact play therapy had on increasing self-concept in these students.

Previous research is highlighting the positive relationship between students' self-concept and achievement; specifically, children who experience difficulties with learning to read begin to identify themselves as nonreaders and then begin to behave in ways that become consistent with that self-concept. Consequently, Boehm-Morelli (1999) attempted to document the efficacy of nondirective play therapy in improving the reading self-concept and reading achievement of remedial readers. Thirty-six students, age 8-9 years, were randomly divided into three groups; specifically, an experimental group receiving play therapy services, an adult playing with

individual students group, and a control that received no treatment. Experimental groups received treatment for 30-40 minutes twice a week for six to eight weeks. Boehm-Morelli (1999) found that although all the participant groups improved significantly in their reading self-concept and reading achievement, no differences were found between groups. That is, students involved in play therapy or play with an adult did not improve significantly over the control group. Limitations discussed included a limited number of sessions and session time could have contributed to no significant differences between groups (Boehm-Morelli, 1999).

Long-term effects of repeated failure in reading consist of frustration, higher dropout rates, decrease in academic success, increases in emotional and behavioral issues. Therefore, implementing effective interventions for young students identified as low acquisition of reading skills is crucial. Consequently, Kaplewicz (1999) also conducted research on the effects of play therapy on reading achievement with remedial readers. Kaplewicz (1999) utilized the same design as Boehm-Morelli except that the children in the experimental group were provided with group play therapy instead of individual play therapy. Forty students, ages 8-10 and identified as remedial readers, participated in this study. Experimental groups received ten sessions of non-directive group play therapy for 30 minutes, the second experimental groups received informal group meetings with an adult at their lunch periods, while the control group received no intervention. Kaplewicz (1999) found that group play therapy was no more effective than placebo activities or control in increasing reading rate of third and fourth-grade remedial reading students. As with Boehm-Morelli (1999), Kaplewicz (1999) concluded sufficient time might not have elapsed to demonstrate the effect of a therapeutic intervention.

Research continued to highlight the effects of play therapy on academic improvement; specifically, students engaging in play therapy may experience the emotional security needed to

become free from threats such as fear of rejection, fear of failure, deficits in self-concept, therefore, being more receptive to reading instruction and reading achievement. Consequently, Lopez (2000) explored the therapeutic effectiveness of a play intervention with Hispanic children who scored low in reading achievement, self-concept and had behavioral problems. Thirty low achieving students were randomly assigned to an experimental or control group. The experimental group received two 30-minute play therapy sessions a week for eight weeks while the control received no intervention. Lopez (2000) found that play therapy intervention had no statistically significant effect on reading achievement. However, the experimental group did score higher on self-concept than did those not participating in play therapy as well as improvements in behavioral issues reported by teachers. Like Azar (1979)and Crow (1989), Lopez (2000) found that although not statistically significant for her study, providing a play intervention helped students to enhance their self-concepts as well as improve control of their internal behaviors.

Children with emotional and social needs often struggle in school due to many experiences of frustration, anxiety, guilt, anger, and depression impede their ability to meet school requirements. School underachievers typically exhibit low trust in themselves and others, suffer from social isolation or rejection, and tend to not take charge of their lives; consequently, these issues negatively impact school performance. Consequently, Shechtman et al. (1996) observed if brief group therapy with low achieving elementary school children would promote positive change. Two elementary schools from the same area in Israel participated in the study; specifically, 60 students, grades 2-6 from one school and 82 students, grades 4-6 from the second. Participants were identified as low achievers based on grades and comparative test scores, and all students were assisted with their learning problems four to six hours per week by

expert teachers in small groups. Participants were randomly assigned to groups; the experimental group participated in group therapy with aspects of non-directive play therapy for 45-minutes a week for 20 weeks, another group received academic enhancement for the same amount of time, and lastly, the control group received no treatment. Shechtman et al. (1996) found consistent and significant progress in both school performance and affective variables in the experimental group. Additionally, the students that participated in group therapy had lasting gains nine months after termination of the intervention.

Given the promising results of play therapy as a positive intervention in education, research continued in order to promote further the impact play therapy could have on academic improvement and success. Early studies (Axline, 1947a; Bills, 1950; Seeman & Edwards, 1954; Winn, 1959) found that play therapy could potentially impact the inner direction of the child and effectively minimize performance anxiety. Though later studies began using more rigorous experimental designs including control groups for intervention comparisons, mixed results were found (Boehm-Morelli, 1999; Crow, 1989; Kaplewicz, 1999; Lopez, 2000; Shechtman et al., 1996). Consequently, the summary of literature on play therapy and academic achievement concludes that the effect of play therapy on academic achievement remains in question due to mixed results.

**Contemporary CCPT Literature and Academic Achievement**

Previous literature supports findings that development of a child's understanding of emotions can improve academic achievement (Zins, Weissberg, Wang, et al., 2004); therefore, it is believed that CCPT is an effective mental health program to be implemented in schools to impact students' academic achievement. Consequently, Blanco and Ray (2011) assessed the impact of CCPT on academic achievement, self-concept, and teacher-child relationship stress.

Forty-three 1st grade students identified as at-risk participated in the student and were randomly assigned to an experimental or to the no treatment waitlist control group. Students in the experimental group completed sixteen 30-minute CCPT sessions over the course of eight weeks while the waitlist control group received no services at that time. Blanco and Ray (2011) found the experimental group had statistically significant gains in academic achievement via the Early Achievement Composite of the Young Children's Achievement Test (YCAT) compared to the waitlist control; additionally, effect sizes indicated a considerable improvement on academic achievement for practical significance. No significant differences were found on self-concept or teacher-child relationship stress. However, results of this study highlight the impact CCPT had on academic achievement with at-risk first-grade students (Blanco & Ray, 2011).

Previous studies regarding the length of time in play therapy determined that maximum benefit happens between 30 to 40 sessions (Bratton et al., 2005; LeBlanc & Ritchie, 2001). Consequently, in a follow-up study, Blanco et al. (2012) assessed the impact of long-term CCPT on academic achievement utilizing participants from the previous study of Blanco and Ray (2011). Participants originally received 16 play therapy sessions over eight weeks (Blanco & Ray, 2011) and received an additional ten sessions over ten weeks in the follow-up study (Blanco et al., 2012). Breaking down the subscales of the YCAT measure of academic achievement, results should that spoken language, general information, reading, mathematics, and writing all showed greater statistically significant gains between time two and time three (following all 26 sessions) than between time one and time two (following original 16 sessions) (Blanco et al., 2012). Additionally, effect sizes were large for each subscale suggesting great practical significance. Therefore, results of this study found continuous improvement throughout

treatment over 26 CCPT sessions. This study suggests that continual use of CCPT results in a gradual increase in overall academic achievement measured by the YCAT (Blanco et al., 2012).

CCPT has been implemented into elementary schools effectively and efficiently; additionally, students are improving academically after participation in services. Consequently, Ray et al. (2015) completed a meta-analysis in order to provide a comprehensive review of the use of CCPT in elementary schools. Studies included in the meta-analysis were published between 1970 and 2011, had at least one experimental group, intervention was conducted within a school setting, CCPT intervention was conducted by a mental health professional, participants between pre-kindergarten and seventh grade, random assignment into experimental or control groups or a quasi-experimental design used, and study had to include data sufficient to calculate effect size (Ray et al., 2015). Twenty-three studies fit the criteria and were included for review. Outcome constructs were coded and collapsed into six categories. Specific categories include: (1) internalizing (i.e., problems within oneself such as anxiety, depression, withdrawal, somatic symptoms); (2) externalizing (i.e., behaviors that conflict with others such as rule-breaking, aggression); (3) total problems (i.e., both internalizing and externalizing behaviors); (4) self-efficacy (i.e., locus of control, self-esteem, self-efficacy); (5) academics (i.e., reading, achievement); and (6) other (i.e., social skills, attitudes toward academia/school, parent-child and/or teacher-child relationships) (Ray et al., 2015). Results of this meta-analysis suggest that CCPT is an effective intervention used in elementary schools; specifically finding effect size range from 0.21 to 0.38 across the six categories suggesting a small to medium effect of practical significance (Tabachnick & Fidell, 2001). In this meta-analysis, academic outcomes produced the most significant effect size of 0.36 highlighting the link between CCPT and academic achievement. Ray et al. (2015) stated

The positive results in the area of academic functioning appears to support Axline's (1949) hypothesis that CCPT releases a child from emotional limitations hindering the child from performing at full potential in learning endeavors. Clearly, CCPT did not directly address the child's reading ability or other academic subjects. By offering the child an environment in which he or she could feel fully understood and accepted, work through those emotional issues that served as limitations, and develop more self-enhancing coping skills, the child is able to fully engage in the learning environment, unhindered by extreme emotional conflict. (pp. 119-120)

Consequently, it may play a crucial role in positively impacting learning abilities at school, help alleviate problem behaviors, increase overall well-being, and self-concept. Additionally, Ray et al. (2015) highlight the importance of investigating both statistical significance between experimental and control groups as well as reporting effect sizes or the practical significance of studies. Previous studies have found mixed results regarding the impact of CCPT on academic improvement; however, reporting effect sizes could indicate higher levels of practical significance between groups.

Previous studies have demonstrated the effectiveness of play therapy for children within the school system; specifically, CCPT increases support for students' emotional health and feelings of academic competence (Blanco & Ray, 2011). Additional research highlights the link between anxiety and academic performance. Consequently, Blanco et al. (2015) investigated the impact of CCPT on academic achievement as well as the effect of CCPT on performance anxiety. Sixty average first grade students participated in the study and were randomly assigned to one of two treatment groups; specifically, a CCPT intervention group or waitlist control. Students in the experimental group received 16 CCPT sessions, approximately 30 minutes in length, over eight weeks. The waitlist control did not receive intervention during this time. Utilizing the YCAT and the Revised Children's Manifest Anxiety Scale, Blanco et al. (2015) found that the CCPT intervention did not have a significant difference in lowering performance anxiety compared to the waitlist control. Regarding academic achievement, results showed a

statistically significant difference via mean increase of 2.7 for the experimental group compared to 0.2 improvement for the waitlist control; Consequently, it appears that CCPT is an effective intervention in increasing student's academic achievement.

In a follow-up study, Blanco et al. (2017) assessed the long-term impact of CCPT on academic achievement in average first-grade students. Utilizing the same sample of 23 students from the previous study (Blanco et al., 2015) who completed an initial 16 CCPT sessions, continued the intervention by receiving an additional 10 CCPT sessions (Blanco et al., 2017). Results of this study found that longer durations of CCPT treatment appear to result in continued improvement in students' academic achievement as measured by the YCAT. Additionally, the growth measured was not uniform for students across the academic domains; specifically, math, reading, and spoken language skills improved statistically significant ways throughout long-term CCPT intervention. A significant change in reading appeared after 16 sessions while math and spoken language appeared after 26 sessions. Consequently, some skills (i.e., math and spoken language) may require more extended periods to respond to the CCPT intervention (Blanco et al., 2017).

Current CCPT literature has explored the effect of CCPT on academic achievement in at-risk first-grade students as well as average or typical first-grade students. Results of these studies have shown a positive impact on academic achievement through CCPT interventions. However, Blanco et al. (2019) examined the impact of CCPT on at-risk kindergarten students in attempt to assess the intervention as a preventative measure. Thirty-six at-risk kindergarten students between the ages of five and six years participated in the study and were randomly assigned to one of two groups; specifically, an experimental group or waitlist control. The experimental group received twelve 30-minute CCPT sessions for six weeks; the waitlist control did not

receive intervention during this time. Utilizing the YCAT, results of this study showed that students in the experimental group improved academically by transitioning from the below-average range (i.e., 80-89) to the average range (90-110) on the Early Achievement Composite of the YCAT on the general information subscale and writing subscale (Blanco et al., 2019). Results of this study support the use of CCPT to positively impact academic achievement.

**Integrating Primary Project and Child Centered Play Therapy**

Both Primary Project and CCPT are considered evidence-based practices for working with children. Specifically, Primary Project is a national evidence-based program that has been implemented in school settings since 1957 (Cowen & Hightower, 1989; Substance Abuse and Mental Health Services Administration [SAMHSA], 2017). Additionally, CCPT is an evidence-based practice for anxiety, disruptive behavior, and domestic/intimate partner violence services for victims and their children (Lin & Bratton, 2015). Currently, vast research is being conducted to continue adding to the evidence-based practice list for CCPT (Blanco & Ray, 2011; Ray, 2011; Ray et al., 2015). Previous literature highlights the imperative need for identifying at-risk students and providing support through developmentally appropriate interventions for school adjustment and academic success (Landreth et al., 2009; Nafpaktitis & Perlmutter, 1998; Peabody et al., 2018). However, few studies to date combine both effective practices of Primary Project and CCPT to best serve elementary school students.

Perryman and Bowers (2018) developed an adapted model of Primary Project. This adapted model utilized master's level counseling interns as opposed to child-aides to provide services to students. These students were all enrolled in an accredited counseling program at a local university (Council for Accreditation of Counseling and Related Educational Programs [CACREP], 2016) and had completed foundational counseling courses (i.e., counseling theories,

foundations of the counseling profession, introduction to play therapy) (Perryman & Bowers,

2018). Master's level interns received weekly supervision from their site supervisor as well as

their doctoral student supervisor and program faculty members. Services provided by master's

level counseling interns too place in specially equipped play rooms following Landreth's (2012)

suggestions. Additionally, counseling interns utilized CCPT principles outlined by Ray (2011) to

convey that the child and their world is understood by the therapist. By following these

principles, the messages sent to the child are, "I am here. I hear you. I understand and I care"

(Landreth, 2002, pp. 205–206). Blanco and Ray (2011) summarize these principles as:

> (a) maintaining a leaning forward, open stance; (b) appearing to be interested; (c) remaining comfortable; (d) having a matching tone with the child's affect; (e) having appropriate affect in responses; (f) using frequent interactive responses; (g) using behavior-tracking responses; (h) responding to verbalizations with paraphrasing; (i) reflecting the child's emotions; (j) facilitating empowerment through returning responsibility; (k) encouraging creativity; (l) using self-esteem boosting statements; and (m) using relational responses. (p. 238)

In this adapted model, Perryman and Bowers (2018) evaluated the impact of Primary

Project for qualifying diverse second-grade students receiving CCPT. Three research questions

were posited; specifically, (1) are there significant differences in behavioral measures of at-risk

students who did not qualify for Primary Project services; (2) does participation in Primary

Project impact behavioral measures of students identified as at-risk; and (3) are there differences

in the behavioral measures for qualifying students who participated in Primary Project in the fall

semester compared to the students that participated in the spring semester (Perryman & Bowers,

2018). The T-CRS 2.1 (Hightower & Perkins, 2010) was utilized to assess four primary domains:

(a) task orientation, students' ability to focus on school-related task; (b) behavior control,

students' skill in tolerating and adapting to limits imposed by the school environment or

students' own limitations; (c) assertiveness, students' interpersonal functioning and confidence

with peers; and (d) peer / social skills, students' liability and popularity among peers (Perryman & Bowers, 2018). At the beginning of the year, the T-CRS 2.1 (Hightower & Perkins, 2010) was completed by teachers for all students enrolled in second grade and qualifying students were identified. All qualifying students received ten weeks of child centered play therapy through counseling intern students following the Primary Project protocol. Students who did not qualify for Primary Project services did not make any significant changes in the behavioral measures; however, students that qualified for services demonstrated significant improvement for the academic year in all behavioral measures (Perryman & Bowers, 2018). In comparing group 1 to group 2, results showed group 2 made significant gains in behavioral measures than did group 1; however, Perryman and Bowers (2018) note that group 1 was comprised of students that were deemed as more severe than students in group 2. Overall, results of this study highlight that play therapy services provided through an adapted Primary Project protocol are useful as a preventative approach for at-risk students.

Students identified as at-risk for school adjustment issues not only have increased risk for behavioral issues, they are also more likely to struggle academically. This further strengthens the necessity for preventative measures such as Primary Project in school systems. Unfortunately, no study previously evaluated the impact of Primary Project on academic success of at-risk students. Therefore, Perryman et al. (2020) utilized their adapted Primary Project model and assessed academic growth for students qualifying for CCPT via the Primary Project intervention. Utilizing their same sample, Perryman et al. (2020) questioned if there were significant baseline differences in academic scores between students that qualified for Primary Project intervention services and those students that did not qualify; additionally, researchers questioned if students participating in Primary Project experience statistically significant academic growth. The

Measure of Academic Progress (MAP) assessment was utilized to assess academic performance in language usage, mathematics, and reading and was completed by all students at the beginning, middle, and end of the school year (Perryman et al., 2020). Results of this study showed that students identified as at-risk had significantly lower MAP assessment scores in reading, mathematics, and language usage at the beginning of the school year compared to non-qualifying peers. Additionally, students receiving play therapy sessions through the adapted Primary Project program had more significant improvements in MAP assessments in mathematics and language usage than their non-qualifying peers (Perryman et al., 2020). Consequently, it is believed that CCPT and the adapted Primary Project model have a positive impact on behavioral as well as academic measures for at-risk students.

## Conclusion

Research over the past six decades has focused on improving the mental health of students in order to promote academic progress and success. Literature has emphasized the importance of social and emotional learning (SEL); specifically, the importance of community, belongingness, forming caring relationships, and feeling valued as a learner (Elias & Arnold, 2006; Kriete & Bechtel, 2002). However, advances in neuroscience support the notion that children may not be able to actively engage in school instruction due to difficulty processing academic information when suffering from mental illness or behavioral problems (Elias, 2006). Consequently, students are at-risk for school failure when suffering from emotional challenges or mental health issues (Blanco, 2009). Therefore, given the link between emotional development and academic success, it is crucial that schools have effective methods for identifying students who are at-risk for school failure; additionally, implementing evidence-based, developmentally

appropriate, preventative programs to assist with student learning is imperative (Perryman et al., 2020; Perryman & Bowers, 2018).

Primary Project successfully identifies at-risk students while focusing on behavioral, social, emotional, and learning needs of the students. Consequently, Primary Project has shown positive results in helping children adjust to and succeed in schools; specifically, gaining confidence, increasing social skills, and decreasing negative behaviors (Peabody et al., 2018). Current Primary Project studies have utilized identification protocol while implementing CCPT intervention with students. These studies have highlighted the need for early identification of at-risk students as well as the positive impact CCPT has on lowering negative behaviors and impacting academic success (Perryman et al., 2020; Perryman & Bowers, 2018). Previous studies have highlighted the positive relationship between self-concept and academic achievement; specifically, students who develop a higher self-confidence have been found to have more fulfilling personal relationships, lower incidence of problem behaviors, and show improvement in their academic achievement.

Child-centered play therapy (CCPT) has been successfully implemented into academia through independent school-based services and preventative programs such as Primary Project (Perryman et al., 2020) and is an effective intervention for students to cope with mental health issues (Bratton et al., 2005; Ray et al., 2015). However, despite significant research over the previous decade regarding CCPT and short- and medium-term academic success (Blanco, 2009; Blanco et al., 2012, 2019; Blanco & Ray, 2011), mental health interventions via CCPT have not currently been correlated to or considered evidence-based for academic achievement in children with emotional needs or identified as at-risk for school failure. Blanco et al. (2019) emphasizes the need for early intervention; specifically, "One assumption held by researchers in primary

education is that early intervention is more effective than later intervention because it attempts to prevent learning deficits and reduces development of socio-emotional problems that would require additional interventions" (p. 140).

Despite the vast and invaluable literature regarding the positive impact of Primary Project and CCPT, only one research group is utilizing these evidence based practices in an integrated way (Perryman et al., 2020; Perryman & Bowers, 2018). Additionally, only one study to date has examined Primary Project 's impact on academic success (Perryman et al., 2020). There is no direct link between play therapy provided via Primary Project intervention and academic improvement; however, previous SEL research highlights the link between emotional health and capacity for academic success (Elias & Arnold, 2006). That is, students suffering from mental health issues and behavioral problems have greater difficulty processing academic information; consequently, these students fall behind and are at higher risk of school failure (Elias, 2006).

Given the previous research, the purpose of this study is to examine the long-term impact of child-centered play therapy on academic achievement in at-risk elementary school students identified through Primary Project. This study intends to establish the importance of early identification of at-risk students and implementation of preventative interventions within the school allowing the student to become more fully engaged in the classroom and learning environment (Ray et al., 2015). Additionally, this study aims to increase the research and knowledge base regarding the link between CCPT and students' academic success.

**CHAPTER 3: METHODOLOGY**

This chapter presents the methods and procedures utilized for this study. Included are research assumptions, participant selection, discussion of instrument descriptions, approach to data collection, description of the treatment, and approach to statistical analysis.

**Statement of the Research Problem**

Previous literature has introduced the relationship between emotional health and academic success; specifically, the impact of child-centered play therapy on academic achievement (Blanco et al., 2019; Perryman et al., 2020). Therefore, the purpose of the study was to evaluate the long-term impact of child-centered play therapy on academic achievement in elementary school children. The following research questions were posed with their respective hypotheses:

1. Do students previously receiving CCPT services via Primary Project experience academic growth as measured by MAP assessment scores in reading and mathematics in subsequent years?

    a. It is hypothesized that students receiving CCPT services via Primary Project will experience academic growth as measured by MAP assessment scores in reading and mathematics in subsequent years.

    b. It is hypothesized that academic growth experienced by students will be in alignment with the academic growth expected via normed RIT values on the MAP assessments.

2. Are there differences in academic growth, as measured by MAP assessment scores in reading and mathematics between those students that previously qualified for and

received CCPT services via Primary Project and those that did not qualify or receive for services in subsequent years?

    a. It is hypothesized that there will be differences between academic growth between students that qualified for and received CCPT services via Primary Project compared to non-qualifying students as measured by MAP assessment scores in reading and mathematics while considering alignment with academic growth expected via normed RIT values on the MAP assessment.

3. Are there differences in Conditional Growth Index in reading and mathematics between those students that previously qualified for and received CCPT services via Primary Project and those that did not qualify for services in subsequent years?

    a. It is hypothesized that there will be differences in Conditional Growth Index between students that qualified for and received CCPT services via Primary Project compared to non-qualifying students as measured by MAP assessment scores in reading and mathematics.

4. Are there differences in students' probability of meeting Expected Growth in reading and mathematics between students that previously qualified for and received CCPT services via Primary Project and those that did not qualify for services in subsequent years?

    a. It is hypothesized that there will be differences in students' probability of meeting expected growth in reading and mathematics between students that qualified for and received CCPT services via Primary Project compared to non-qualifying students as measured by MAP assessment scores.

**Setting**

Data for this study was collected from one school located in the southcentral region of the United States. With 82% of students receiving free or reduced school lunch, it was considered a Title I school (Perryman & Bowers, 2018). Additionally, with 62% of students identifying as Hispanic or Pacific Islander (National Center for Education Statistics, 2016), the school was also considered ethnically diverse (Perryman & Bowers, 2018). The school continued to maintain its status as a Title I school and ethnically diverse as 84% of students received free or reduced school lunch and 70% of students identified as Latinex or Pacific Islander in the most current academic school year (National Center for Education Statistics, 2018)

**Participants**

Perryman & Bowers (2018) conducted a study in which 84 second grade students were assessed with the Teacher Child Rating Scale 2.1 (T-CRS 2.1, Hightower & Perkins, 2010) in accordance to the Primary Project protocol. The elementary school provided standardized MAP scores for all second grade students with identifiable information removed. Participants for the current study were Perryman & Bowers' (2018) original second grade students through archival data. Permission was granted from the school to utilize de-identified MAP scores for students across multiple grade levels. Of the 84 students assessed, 68 students were included in Perryman & Bowers' (2018) study. Demographic information of Perryman & Bowers' (2018) participating students was broken down by race, gender, and intervention group; specifically, 55.9% of students identified as Hispanic, 19.4% as Caucasian, 19.4% as Pacific Islander, and 4.5% as Black. Additionally, 57.4% of students identified as male and 42.6% as female. Lastly, 52.9% of students were identified as at-risk via the Primary Project protocol and received CCPT services while 47.1% of students did not qualify as at-risk.

As this study assessed the impact of CCPT via Primary Project intervention across grades 1st through 4th, participants were only included in the study if all MAP scores across grade levels were available. Of the 68 original participants in Perryman & Bowers' (2018) study, 35 students were included in the longitudinal examination. Of these participants, 57.1% ($N = 20$) were male, 42.9% ($N = 15$) female. Additionally, 65.7% ($N = 23$) identified as Latinex, 20% ($N = 7$) as Caucasian, 11.4% ($N = 4$) as Pacific Islander, and 2.9% ($N = 1$) did not respond. Lastly, 51.4% ($N = 18$) were not identified as at-risk; however, 48.6% ($N = 17$) were identified as at-risk and received CCPT services via Primary Project. Gender and Race did not significantly differ between intervention groups at the $p < .05$ level. Participant demographics can be found in Table 1 and Figure 3 below. Participant demographic by Primary Project intervention group are found in Table 2 and Figure 4 below.

Table 1. Participant demographic information

| Demographic | | N | Percentage |
|---|---|---|---|
| **Gender** | Male | 20 | 57.1 |
| | Female | 15 | 42.9 |
| **Race** | Latinex | 23 | 65.7 |
| | Caucasian | 7 | 20.0 |
| | Pacific Islander | 4 | 11.4 |
| | Not Identified | 1 | 2.9 |
| **Intervention** | Non-Qualifier | 18 | 51.4 |
| | Qualifier | 17 | 48.6 |
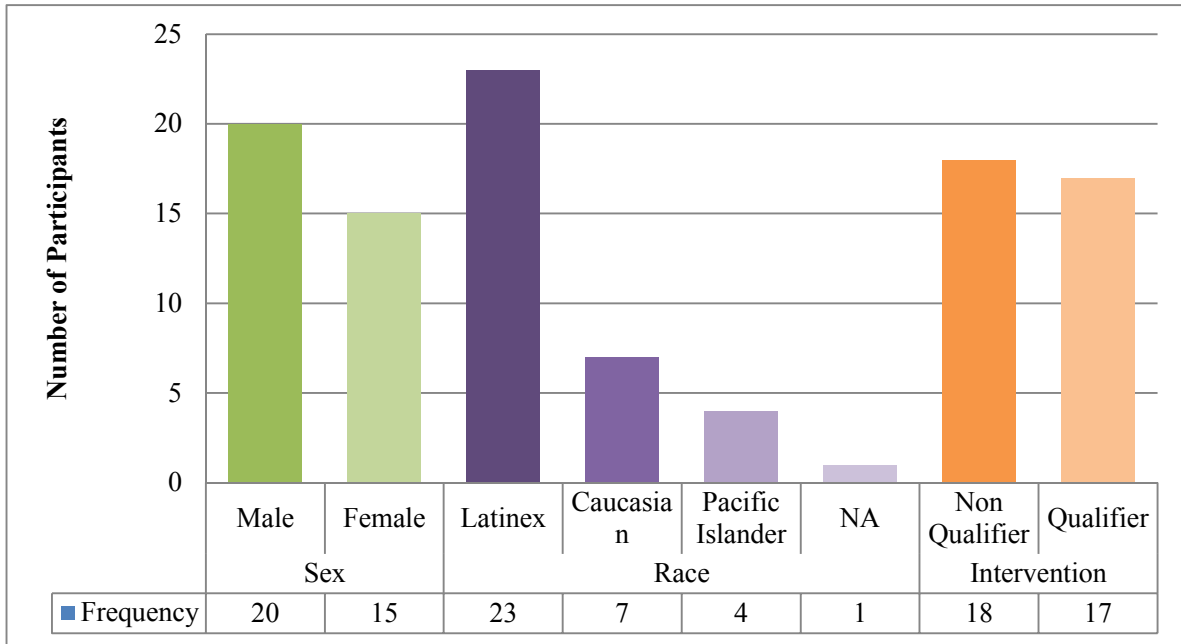
Figure 3. Participant demographic information

Table 2. Demographic information by intervention

| Demographic | | Non-Qualifier | | Qualifier | |
|---|---|---|---|---|---|
| | | *N* | Percentage | *N* | Percentage |
| **Gender** | Male | 12 | 66.7 | 8 | 47.1 |
| | Female | 6 | 33.3 | 9 | 52.9 |
| **Race** | Latinex | 12 | 66.7 | 11 | 64.7 |
| | Caucasian | 4 | 22.2 | 3 | 17.6 |
| | Pacific Islander | 1 | 5.55 | 3 | 17.6 |
| | Not Identified | 1 | 5.55 | 0 | 0 |

| | Male | Female | Latinex | Caucasian | Pacific Islander | NA |
|---|---|---|---|---|---|---|
| ■ Non-Qualifier | 12 | 6 | 12 | 4 | 1 | 1 |
| ■ Qualifier | 8 | 9 | 11 | 3 | 3 | 0 |
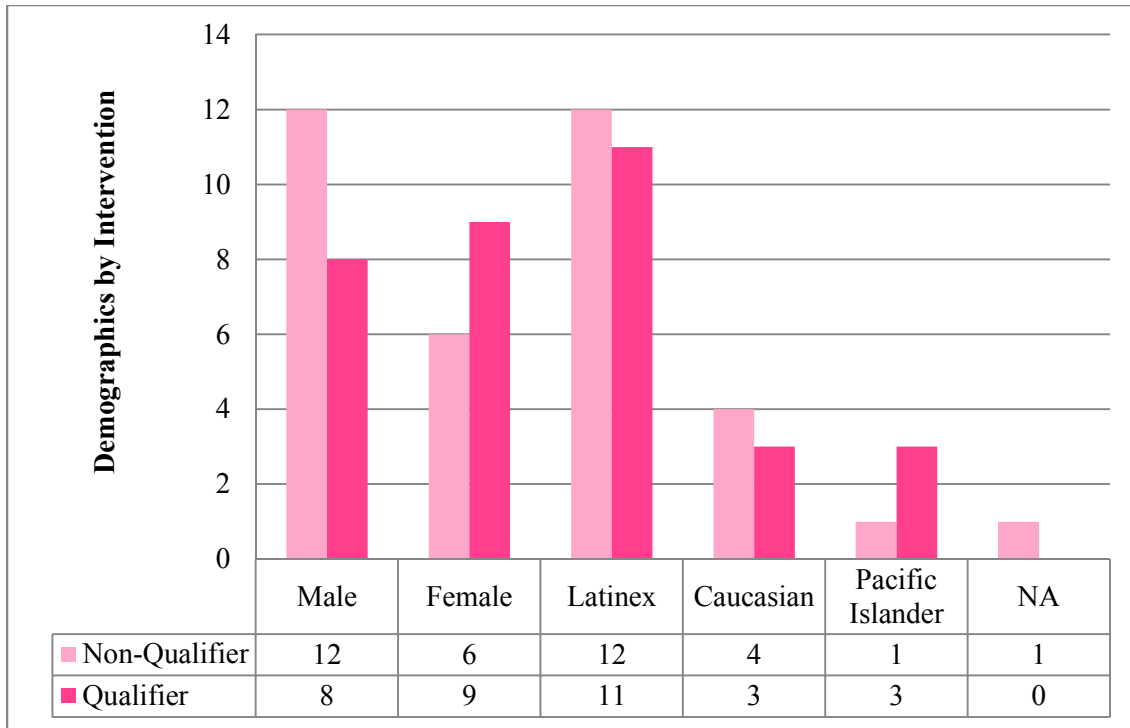
Figure 4. Participant demographic information by intervention

**Instruments**

**Teacher Child Rating Scale 2.1 (T-CRS 2.1)**

According to Primary Project protocol, the TCRS 2.1 (Hightower & Perkins, 2010) is a brief objective rating scale designed for teachers to evaluate school problem behaviors and competencies. The T-CRS 2.1 (Hightower & Perkins, 2010) is comprised of 32 items that assess a child's socio-emotional adjustment across four primary domains (i.e., task orientation, behavior control, assertiveness, and peer social skills) and eight secondary domains (i.e., positive competency behaviors and negative problem behaviors for each primary domain) (Hightower & Perkins, 2010). It is believed that the teacher report is the most reliable source of students' school adjustment as they are most familiar with the student's current school behavior and performance (Hightower & Perkins, 2010).

The T-CRS 2.1 (Hightower & Perkins, 2010) has been impacted by early assessments such as the Classroom Adjustment Rating Scale (CARS; Lorion et al., 1975), Health Resources Inventory (HRI; Gesten, 1976), and Teacher-Child Rating Scale (T-CRS 1.0; Hightower et al., 1987). The T-CRS 2.1 (Hightower & Perkins, 2010) was normed on a random sample of students from the 1998-1999 academic year in 19 American states where the Children's Institute was already established. A total of 700 children were included in the normative sample and ranged in school from prekindergarten to eighth grade. A representative sample was collected regarding school location (i.e., urban, suburban, rural), gender (i.e., male, female), and ethnicity/race (i.e., White/Caucasian, Hispanic, African American, Asian, Native American).

T-CRS 2.1 (Hightower & Perkins, 2010) reliability was assessed by internal consistency and stability. Cronbach α scores (Tabachnick & Fidell, 2001) were calculated for subscales and found that internal consistency is high for each; specifically, Task Orientation, α = 0.94; Behavior Control, α = 0.90; Assertiveness, α = 0.87; Peer Social Skills, α = 0.94. A Cronbach α score can be compared to a criterion of 0.70; thus suggesting that the T-CRS 2.1 primary subscales surpass an acceptable level of internal consistency (Tabachnick & Fidell, 2001). Additionally, long-term stability of the T-CRS 2.1 was determined by the same constructs being measured over long periods of time. Pre- and post- test scores of 113 students were assessed seven months apart. Correlation scores between the pre- and post- test scores were all significant at $p < .001$ levels; specifically, Task Orientation, $r = 0.80$; Behavior Control, $r = 0.70$; Assertiveness, $r = 0.76$; and Peer Social Skills, $r = 0.66$. These results support the reliability of the T-CRS 2.1 (Hightower & Perkins, 2010).

Validity of the T-CRS 2.1 (Hightower & Perkins, 2010) was determined by content, construct, and criterion-related validity assessments. Content validity was established via

teachers, psychologists, measurement specialists, as well as other users of socioemotional adjustment instruments in order to ensure items covered content of school adjustment problems. Additionally, samples of at-risk students and a random sample were compared; results found that at-risk students score significantly ($p < 0.001$) lower than the random sample of students. Results of this comparison highlighted the sensitivity of the T-CRS 2.1 (Hightower & Perkins, 2010) items to problem behaviors and competencies exhibited by at-risk students. Construct validity was measured by a four factor confirmatory factor analysis and convergent/discriminant validity comparison to a similar questionnaire. The confirmatory factor analysis of the T-CRS 2.1 (Hightower & Perkins, 2010) and its 32-items found each item loaded on its specific scale with factor loadings indicative of a good fit and all loadings were significant at $p < 0.05$ levels. The T-CRS 2.1 (Hightower & Perkins, 2010) was compared via convergent/discriminant validity assessment to the Child-Behavior Checklist – Teacher Report Form (TRF; Achenbach, 1991). Correlations between the T-CRS 2.1 and the TRF found high correlations on scales purporting to measure the same constructs as well as low correlations, or not statistically significant, among scales measuring different constructs (Hightower & Perkins, 2010). All correlations were found to be significant at the $p < 0.01$ level. Criterion-related validity was assessed on "whether or not a child was flagged as at-risk or referred for services" (Hightower & Perkins, 2010, p. 26) for discriminatory power of the T-CRS 2.1. Discriminant analysis showed that group membership of students (i.e., at-risk, random) could be predicted based on T-CRS 2.1 scale scores. Therefore, results of validity assessments found the T-CRS 2.1 (Hightower & Perkins, 2010) to be a valid measure of a child's socio-emotional adjustment.

In Perryman & Bowers' (2018) study, 38 of the 84 students screened by the T-CRS 2.1 (Hightower & Perkins, 2010) were deemed at-risk and qualified for participating in CCPT

services. Two students dropped out of the study leaving 36 participants that received the CCPT intervention. Fourteen non-qualifying students also dropped out of the study; consequently, the remaining 32 students, who did not qualify for CCPT services, remained in the non-qualifier group.

**Measure of Academic Progress (MAP) Assessments**

The Measure of Academic Progress (MAP) assessment is published by the Northwest Evaluation Association (NWEA) and is considered a computerized adaptive test (CAT) (Thum & Hauser, 2015). CAT tests are constructed based on the student's performance while responding to items constrained in content to a set of standards or curriculum, usually defined by the state (Thum & Hauser, 2015). MAP assessments differ in their content based on the student. Utilizing the Rasch model, the assessments are all calibrated to the same underlying scale; specifically, item difficulty (Thum & Hauser, 2015). MAP assessments typically include between 40 and 50 multiple choice items; as the student takes the assessment, items are selected from a large pool of Rasch-calibrated items based on the student's interim ability estimate (NWEA, 2011b; Thum & Hauser, 2015). Rasch unit (RIT) scores do not compare students' performance to other students (i.e., percentile scores), rather, they relate students' achievement to the set curriculum; therefore, the RIT scale and MAP assessment can accurately measure progress and academic performance over time (NWEA, 2011a).

MAP assessments are given to students at the beginning, middle, and end of the academic school year (NWEA, 2011b). The MAP assessment is comprised of three main academic domains. The first domain is reading and includes questions from four areas; specifically, word meaning, literal comprehension, interpretive comprehension, and evaluative comprehension (NWEA, 2011b). The second domain is mathematics and includes grade appropriate items

regarding operations and algebraic thinking, numbers and operations, measurement and data, and geometry (NWEA, 2011b). The third domain is language usage and assesses writing strategies, writing composition, mechanics, and grammar (NWEA, 2011b). However, the elementary school only utilized the language usage domain for one academic year; therefore, this study will only be considering the reading and mathematics domains.

Upon completing each MAP assessment, students are provided an updated RIT overall subject score for reading and mathematics (Thum & Hauser, 2015). Normed RIT values broken down by student grade and test administration (NWEA, 2011b) can be found in Table 3 for reading and mathematics. Academic growth is calculated by the increase in RIT values made between the beginning and the end of one academic year (i.e., fall to spring testing) (Thum & Hauser, 2015).

Table 3. Normed RIT mean and standard deviation values by grade and test administration

| Grade | Reading Mean and (SD) Values | | | Mathematics Mean and (SD) Values | | |
|---|---|---|---|---|---|---|
| | Fall | Winter | Spring | Fall | Winter | Spring |
| K | 141.0 (13.54) | 151.3 (12.73) | 158.1 (12.85) | 140.0 (15.06) | 151.5 (13.95) | 159.1 (13.69) |
| 1 | 160.7 (13.08) | 171.5 (13.54) | 177.5 (14.54) | 162.4 (12.87) | 173.8 (12.96) | 180.8 (13.63) |
| 2 | 174.7 (15.52) | 184.2 (14.98) | 188.7 (15.21) | 176.9 (13.22) | 186.4 (13.11) | 192.1 (13.54) |
| 3 | 188.3 (15.85) | 195.6 (15.14) | 198.6 (15.10) | 190.4 (13.10) | 198.2 (13.29) | 203.4 (13.81) |
| 4 | 198.0 (15.53) | 203.6 (14.96) | 205.9 (14.92) | 201.9 (13.76) | 208.7 (14.27) | 213.5 (14.97) |
| 5 | 205.7 (15.13) | 209.8 (14.65) | 211.8 (14.72) | 211.4 (14.68) | 217.2 (15.33) | 221.4 (16.18) |
| 6 | 211.0 (14.94) | 214.2 (14.53) | 215.8 (14.66) | 217.6 (15.53) | 222.1 (16.00) | 225.3 (16.71) |
| 7 | 214.4 (15.31) | 216.9 (14.98) | 218.2 (15.14) | 222.6 (16.59) | 226.1 (17.07) | 228.6 (17.72) |
| 8 | 217.2 (15.72) | 219.1 (15.37) | 220.1 (15.73) | 226.3 (17.85) | 229.1 (18.31) | 230.9 (19.11) |
| 9 | 220.2 (15.68) | 221.3 (15.54) | 221.9 (16.21) | 230.3 (18.13) | 232.2 (18.62) | 233.4 (19.52) |
| 10 | 220.4 (16.85) | 221.0 (16.70) | 221.2 (17.48) | 230.1 (19.60) | 231.5 (20.01) | 232.4 (20.96) |
| 11 | 222.6 (16.75) | 222.7 (16.53) | 222.3 (17.68) | 233.3 (19.95) | 234.4 (20.18) | 235.0 (21.30) |

**Collection of Data**

Perryman & Bowers (2018) utilized the T-CRS 2.1 (Hightower & Perkins, 2010) and (Perryman et al., 2020) utilized MAP scores to assess 68 second grade students. The group qualified to receive CCPT services via Primary Project was comprised of students deemed at-risk on the T-CRS 2.1 (Hightower & Perkins, 2010); consequently, 36 students received 10 sessions of CCPT as a preventative intervention. The group that did not qualify for services was

comprised of the remaining 32 students who were not identified as at-risk. Perryman & Bowers (2018) found significant improvement in students in behavioral, emotional, and social aspects for the students in the qualifying group receiving CCPT services compared to the non-qualifying group that did not receive services. (Perryman et al., 2020) found significant improvement in MAP scores for students who participated in the qualifiying group receiving CCPT services. Therefore, CCPT has been shown to have a positive and immediate impact on a student's academic performance.

The current study assessed the long-term impact of CCPT services on student's academic growth; therefore, this study was a follow-up, longitudinal examination of academic growth. MAP scores for each student that participated in Perryman & Bowers (2018) and Perryman et al. (2020) studies were obtained from the school for first, second, third, and fourth grades. Scores were be coded by student and identifying information was be removed. The university IRB committee's approval was sought regarding the collection and analyses of archival data for this research study.

## Statistical Analyses

Data collected for this study is comprised of MAP assessments for reading and mathematics for Perryman & Bowers (2018) and Perryman et al's (2020) original 68 students for first, second, third, and fourth grades. Therefore, the data collected has two dependent variables (i.e., reading MAP scores, mathematics MAP scores) and two independent variables. The first independent variable was student grade (i.e., 1st, 2nd, 3rd, and 4th) and the second independent variable was qualifying group (i.e., qualifier, non-qualifier). Given the data collected, a multivariate analysis of variance (MANOVA) was considered. A MANOVA tests whether mean differences among independent variable groups on a combination of dependent variables are

likely to have occurred by chance (Tabachnick & Fidell, 2001). Numerous assumptions must be met with data in order to determine the appropriateness of statistical analyses. Assumptions tests were completed and data failed to meet assumptions in two specific areas needed in order to utilize a MANOVA; specifically, the assumption that there should be a linear relationship between dependent variables for each group of independent variable(s) and the assumption that there should be no multicollinearity. Correlations between dependent variables on each independent variable were low; therefore, running separate analysis of variance (ANOVA) for each dependent variable was completed (Tabachnick & Fidell, 2007). Assumption test results for MANOVA can be found in Appendix A.

**Between-Subjects ANOVA**

Multiple between-subjects ANOVA procedures compare mean score differences between groups that are separated on one independent variable; specifically, a between-subjects factor. The between-subjects factor for this data was the independent variable of qualifying for CCPT services via Primary Project (i.e., qualifiers, non-qualifiers). This statistical analysis determined academic differences between the qualifying and non-qualifying groups of students at each of eight time points during the study period. As this data is comprised of two dependent variables (i.e., reading MAP scores, mathematics MAP scores), separate between- subjects ANOVAs were completed at each of the eight time points. These analyses were completed for RIT scores for reading and mathematics and were performed with significance set at the $p = .05$ level.

**Mixed Between-Within-Subjects ANOVA**

A mixed between-within-subjects ANOVA compares mean score differences between groups that are separated on two independent variables; specifically, a between-subjects factor

134

and a within-subjects factor. The between-subjects factor for this data was the independent variable of qualifying for CCPT services via Primary Project (i.e., qualifiers, non-qualifiers) while the within-subjects factor for this data was the independent variable of student grade (i.e., $1^{st}$, $2^{nd}$, $3^{rd}$, $4^{th}$). This statistical analysis determined academic changes over time as well as identified differences between the qualifying and non-qualifying groups of students over the subsequent years of school. As this data is comprised of two dependent variables (i.e., reading MAP scores, mathematics MAP scores), two separate mixed between-within-subjects ANOVAs were completed. These analyses were completed for Conditional Growth Index for reading and mathematics and were performed with significance set at the $p = .05$ level.

## Cochran's Q

In order to assess differences in students' probability of meeting Expected Growth (Fall to Spring) in Reading and Mathematics, Cochran's $Q$ Test was utilized. Analyses were performed with significance set at the $p = .05$ level. This assessment is similar to a one-way repeated measures ANOVA; however, it assesses dichotomous data (i.e., met versus not met) rather than continuous (Cochran, 1950). This assessment is commonly used to assess longitudinal study designs and proportion of success (i.e., meeting expected growth).

## Summary

The purpose of the study was to evaluate the long-term impact of child-centered play therapy on academic achievement in elementary school children. Specific research questions considered were comprised of assessing academic growth, conditional growth index, and probability of meeting expected growth in reading and mathematics. These analyses were compared over four academic years and across two groups of students; specifically, students

identified as at-risk that received CCPT services via Primary Project and those that were not identified as at-risk and did not receive additional services.  Between-subjects ANOVA, mixed between-within-subjects ANOVA, and Cochran's Q analyses were utilized to assess research questions.

# CHAPTER 4: RESULTS

This chapter presents the results of the study. Both inferential and descriptive statistical results are included. Inferential results include those for between-subjects ANOVA procedures for Reading and Math RIT scores, mixed between-within ANOVA procedures for conditional growth index in Reading and Math, as well as Cochran's Q Test for Reading and Math RIT scores. Descriptive results include comparisons of Reading and Math RIT scores to the national norm, differences in Reading and Math percentiles, comparisons of observed and expected growth in Reading and Math RIT scores, and proportion discordance between Primary Project intervention group and grade level.

## Reading

Analysis of data showed that there are two significant outliers across groups for reading; see Figure 5 below. The first outlier was participant number 4 in the Non-Qualifier group in first grade. This student had an observed growth in reading of 37 RIT values that was significantly higher than the student's peers. The second outlier was participant number 14 in the Non-Qualifier group in the fourth grade. This student had an observed growth of -92 RIT values. This was significantly lower than this student's peers. The data for these participants were removed.
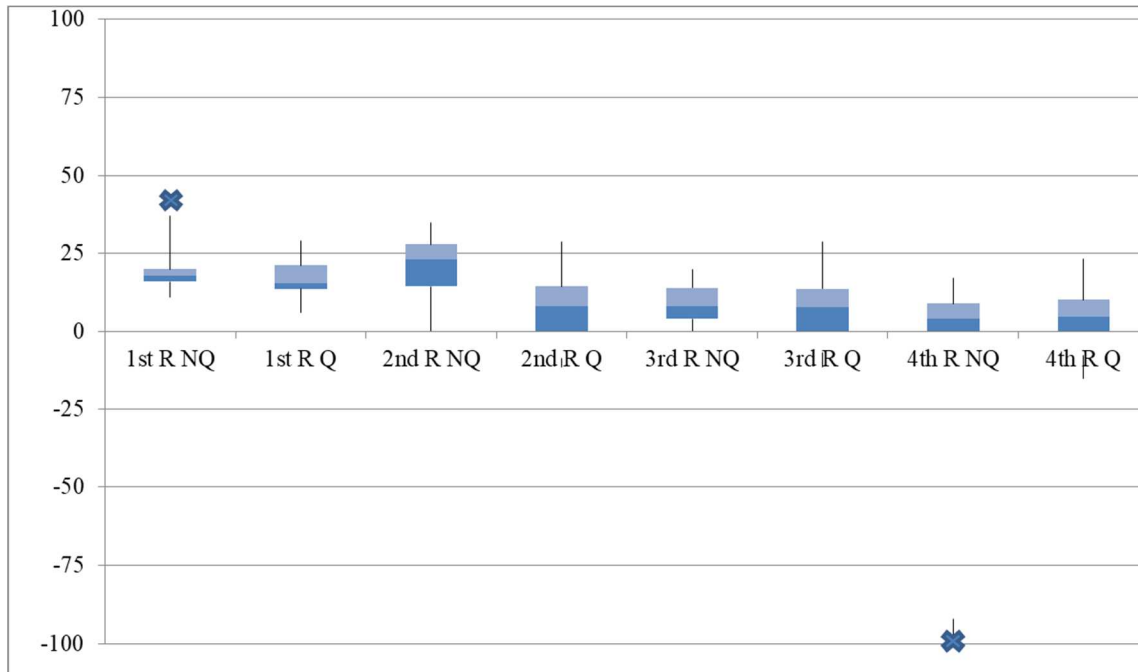
Figure 5. Reading: histogram and data outliers

**RIT Scores**

Differences in Reading RIT scores for Fall and Spring testing times were compared between the non-qualifying and qualifying groups of students. There were statistically significant differences between Primary Project intervention groups on both fall and spring RIT reading scores ($p \leq .05$). Reading RIT score means, standard deviations, *F*-values, and *p*-values are listed in Table 4 below. Similarly, changes in mean Reading RIT scores across time and compared to national norming data is in Figure 6 below. Changes in reading percentile are depicted in Table 5 and Figure 7 below.

138

Table 4. Reading: RIT score means, standard deviations, *F*-values, and *p*-values

| Grade | Semester | Intervention | N | RIT Value M | SD | Diff. | F Value | Sig. |
|---|---|---|---|---|---|---|---|---|
| 1st | Fall | Non-Qualifier | 18 | 162.06 | 12.25 | 8.18 | 4.416 | 0.043 |
| | | Qualifier | 17 | 153.88 | 10.64 | | | |
| | Spring | Non-Qualifier | 18 | 181.22 | 11.31 | 10.04 | 6.029 | 0.020 |
| | | Qualifier | 17 | 171.18 | 12.89 | | | |
| 2nd | Fall | Non-Qualifier | 18 | 173.44 | 17.61 | 11.38 | 4.955 | 0.033 |
| | | Qualifier | 17 | 162.06 | 11.92 | | | |
| | Spring | Non-Qualifier | 18 | 187.00 | 13.09 | 11.71 | 5.619 | 0.024 |
| | | Qualifier | 17 | 175.29 | 16.05 | | | |
| 3rd | Fall | Non-Qualifier | 18 | 186.17 | 13.69 | 11.29 | 5.227 | 0.029 |
| | | Qualifier | 17 | 174.88 | 15.5 | | | |
| | Spring | Non-Qualifier | 18 | 197.89 | 13.23 | 11.65 | 4.671 | 0.038 |
| | | Qualifier | 17 | 186.24 | 18.39 | | | |
| 4th | Fall | Non-Qualifier | 18 | 199.06 | 13.05 | 9.88 | 4.173 | 0.049 |
| | | Qualifier | 17 | 189.18 | 15.52 | | | |
| | Spring | Non-Qualifier | 18 | 204.94 | 13.08 | 9.76 | 4.384 | 0.044 |
| | | Qualifier | 17 | 195.18 | 14.52 | | | |



| | 1st Fall | 1st Spring | | 2nd Fall | 2nd Spring | | 3rd Fall | 3rd Spring | | 4th Fall | 4th Spring |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Non-Qualifiers | 162.06 | 181.22 | | 173.44 | 187 | | 186.17 | 197.89 | | 199.06 | 204.94 |
| Qualifiers | 153.88 | 171.18 | | 162.06 | 175.29 | | 174.88 | 186.24 | | 189.18 | 195.18 |
| National Norm | 161 | 178 | | 175 | 189 | | 188 | 199 | | 198 | 206 |
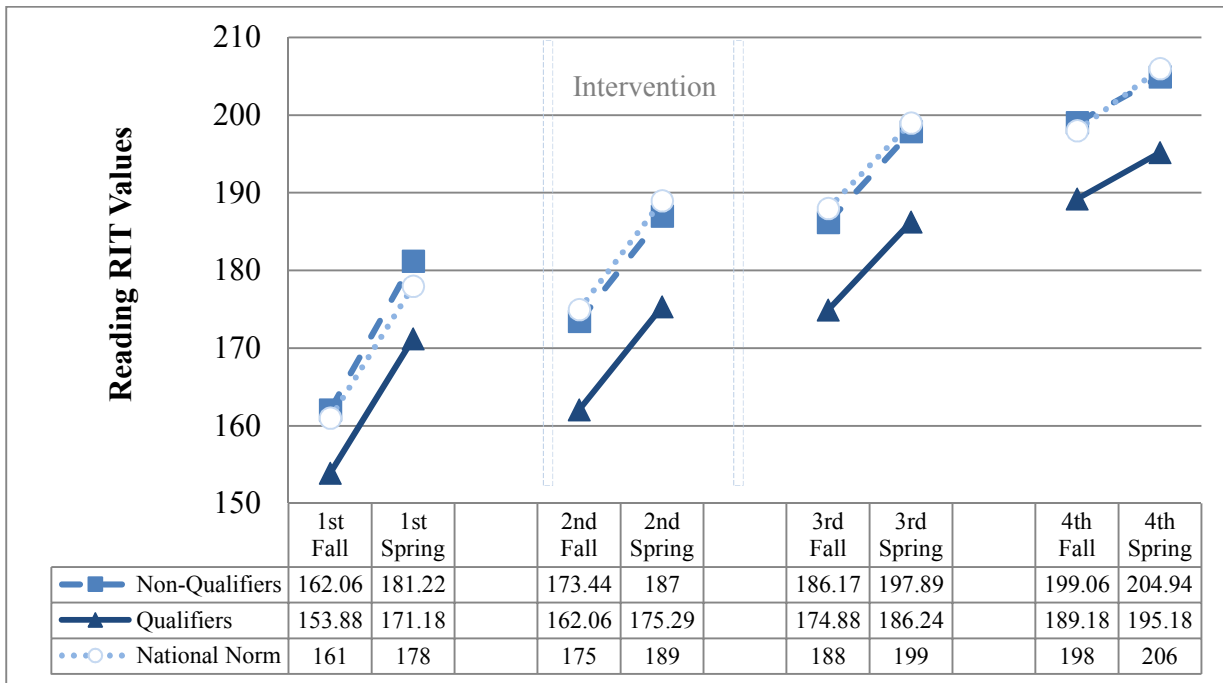
Figure 6. Reading: mean RIT values by intervention group and national norm

Table 5. Reading: mean percentiles by intervention

| Grade | Semester | Intervention | N | Percentile | Diff. |
|-------|----------|--------------|-----|-----------|-------|
| 1st | Fall | Non-Qualifier | 18 | 53rd | 24 |
| | | Qualifier | 17 | 29th | |
| | Spring | Non-Qualifier | 18 | 59th | 27 |
| | | Qualifier | 17 | 32nd | |
| 2nd | Fall | Non-Qualifier | 18 | 44th | 24 |
| | | Qualifier | 17 | 20th | |
| | Spring | Non-Qualifier | 18 | 45th | 27 |
| | | Qualifier | 17 | 18th | |
| 3rd | Fall | Non-Qualifier | 18 | 44th | 25 |
| | | Qualifier | 17 | 19th | |
| | Spring | Non-Qualifier | 18 | 47th | 27 |
| | | Qualifier | 17 | 20th | |
| 4th | Fall | Non-Qualifier | 18 | 51st | 24 |
| | | Qualifier | 17 | 27th | |
| | Spring | Non-Qualifier | 18 | 46th | 23 |
| | | Qualifier | 17 | 23rd | |



| | 1st Fall | 1st Spring | | 2nd Fall | 2nd Spring | | 3rd Fall | 3rd Spring | | 4th Fall | 4th Spring |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Non-Qualifiers | 53% | 59% | | 44% | 45% | | 44% | 47% | | 51% | 46% |
| Qualifiers | 29% | 32% | | 20% | 18% | | 19% | 20% | | 27% | 23% |
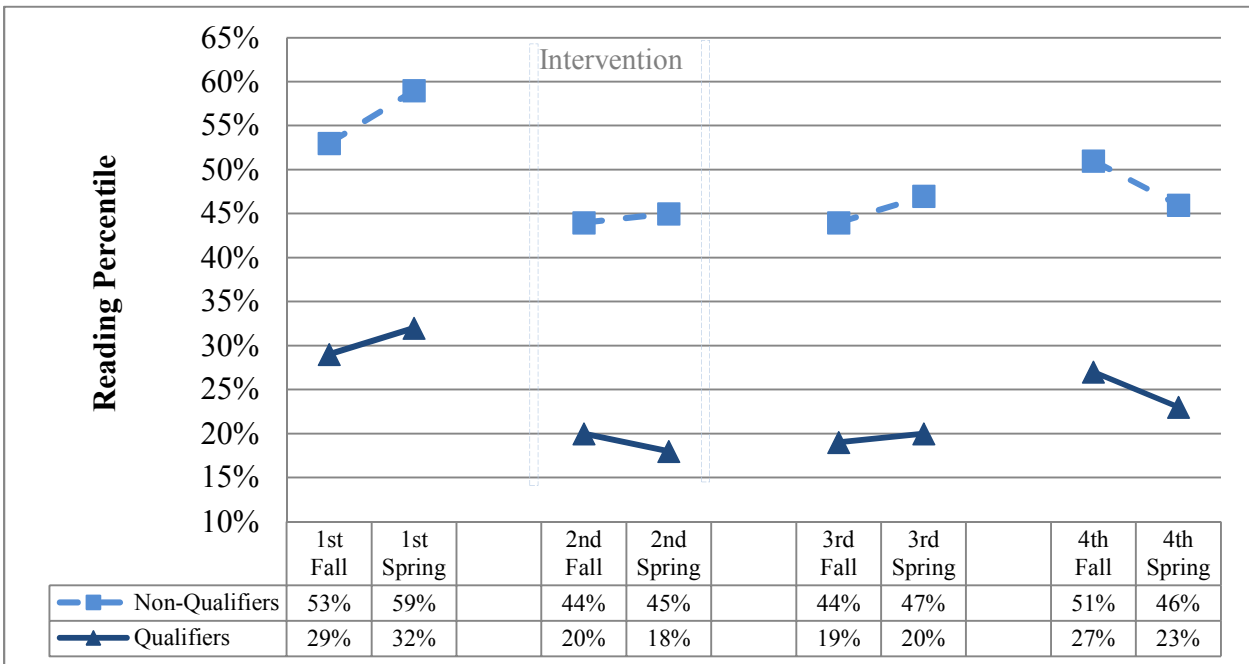
Figure 7. Reading: mean percentiles by intervention

Given the NWEA national norming data (Thum & Hauser, 2015), each student, regardless of RIT value achieved, has listed growth expectations for future MAP assessments. Consequently, observed growth for each intervention group was compared while taking expected growth into consideration. Figure 8 below depicts average observed growth in Reading MAP assessment RIT scores as well as average expected growth for both Primary Project intervention groups.
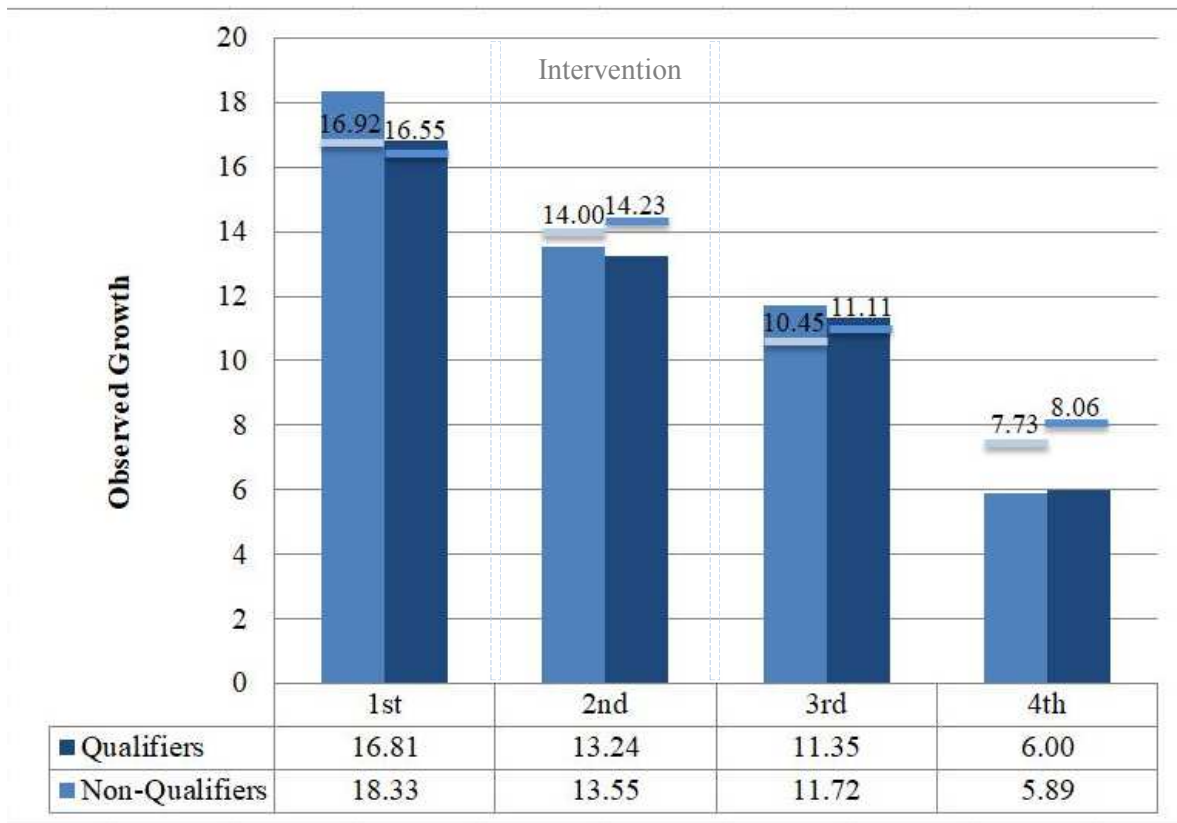


Figure 8. Reading: observed and expected growth by intervention

**Conditional Growth Index**

Conditional Growth Index in Reading RIT values between groups and across grades were normally distributed, as assessed by Shapiro Wilks test ($p > .05$) except for first grade in non-qualifying students ($p = .001$). The assumption of homogeneity of variances was not violated as

assessed by Levene's Test of Homogeneity of Variance ($p > .05$). The assumption of

homogeneity of covariances was not violated, as assessed by Box's Test of Equality of

Covariance matrices ($p = .448$). The assumption of sphericity was not violated, as assessed by

Maulchy's $W$ ($\chi^2$ (5) = 6.32, $p = .277$). Information regarding growth index assumption tests in

reading can be found in Table 6 below.

Table 6. Reading: conditional growth index assumption test results

| Assumption | Test | Statistic | df | Sig. |
|---|---|---|---|---|
| Normality | Shapiro Wilks test | | | |
| | 1st Grade: Non-Qualifiers | $F = 0.784$ | 18 | 0.001 |
| | 2nd Grade: Non-Qualifiers | $F = 0.918$ | 18 | 0.117 |
| | 3rd Grade: Non-Qualifiers | $F = 0.965$ | 18 | 0.695 |
| | 4th Grade: Non-Qualifiers | $F = 0.969$ | 18 | 0.784 |
| | | | | |
| | 1st Grade: Qualifiers | $F = 0.935$ | 17 | 0.269 |
| | 2nd Grade: Qualifiers | $F = 0.888$ | 17 | 0.044 |
| | 3rd Grade: Qualifiers | $F = 0.989$ | 17 | 0.999 |
| | 4th Grade: Qualifiers | $F = 0.941$ | 17 | 0.382 |
| | | | | |
| Homogeneity of Variance | Levene's Test of Equality | | | |
| | 1st Grade | $F = 2.009$ | 1, 33 | 0.166 |
| | 2nd Grade | $F = 0.194$ | 1, 33 | 0.663 |
| | 3rd Grade | $F = 2.892$ | 1, 33 | 0.098 |
| | 4th Grade | $F = 0.023$ | 1, 33 | 0.879 |
| | | | | |
| Homogeneity of Covariance | Box's $M$ Test = 11.430 | $F = 0.992$ | 10, 5163 | 0.448 |
| | | | | |
| Sphericity | Maulchy's $W$ Test = .819 | $\chi^2 = 6.320$ | 5 | 0.277 |

There was no statistically significant interaction between the Primary Project intervention

groups (i.e., non-qualifiers, qualifiers) and grade level, $F$ (3, 99) = 0.049, $p = .986$, partial $\eta^2 =$

.001. The main effect of grade level showed no statistically significant difference in mean

conditional growth index in Reading RIT scores at different grade levels, $F(3, 99) = 1.759$, $p =$ .160, partial $\eta^2 = .051$. Pairwise comparisons found statistically significant differences between first and fourth grade ($p = .013$). The main effect of Primary Project intervention group showed no statistically significant differences in conditional growth index in Reading RIT scores between students in the non-qualifying and qualifying groups, $F(1, 33) = 0.095$, $p = .760$, partial $\eta^2 = .003$. Mean Conditional Growth Index scores for Reading for Primary Project intervention group and across grade levels can be found in Table 7 and Figure 9 below.

Table 7. Reading: mean conditional growth index by intervention

| Grade | Intervention | *N* | Expected Growth *M* | Observed Growth *M* | Fall to Spring Growth *SD* | Conditional Growth Index |
|---|---|---|---|---|---|---|
| 1st | Non-Qualifier | 18 | 16.92 | 19.17 | 8.03 | 0.280 |
| | Qualifier | 17 | 16.55 | 17.29 | 8.03 | 0.093 |
| 2nd | Non-Qualifier | 18 | 14 | 13.56 | 7.82 | -0.057 |
| | Qualifier | 17 | 14.23 | 13.24 | 7.82 | -0.127 |
| 3rd | Non-Qualifier | 18 | 10.45 | 11.72 | 7.15 | 0.178 |
| | Qualifier | 17 | 11.11 | 11.35 | 7.15 | 0.034 |
| 4th | Non-Qualifier | 18 | 7.73 | 5.89 | 6.69 | -0.275 |
| | Qualifier | 17 | 8.06 | 6.00 | 6.69 | -0.308 |

| | 1st | 2nd | 3rd | 4th |
|---|---|---|---|---|
| Non Qualifer | 0.280 | -0.057 | 0.178 | -0.275 |
| Qualifier | 0.093 | -0.127 | 0.034 | -0.308 |
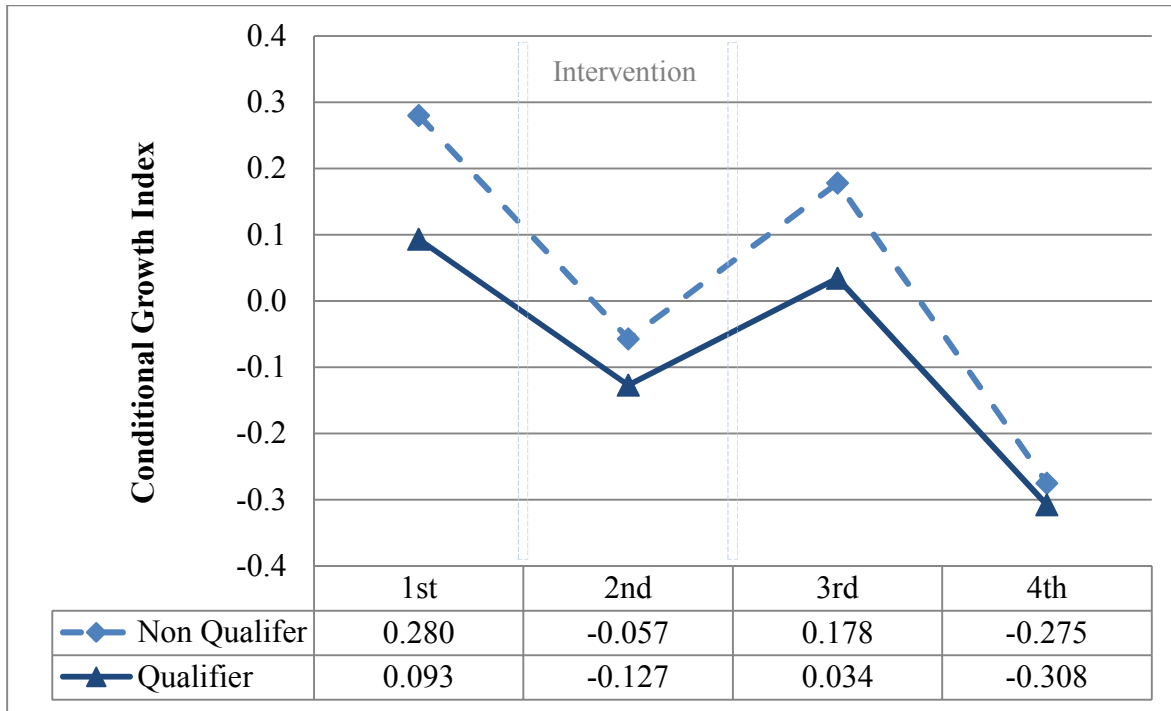
Figure 9. Reading: mean conditional growth index by intervention

**Cochran's $Q$ Test**

In the non-qualifying group, 18 students had Reading RIT scores available for grades 1st through 4th; consequently, these students were included within the Cochran's $Q$ test for those not receiving CCPT services via Primary Project. In 1st grade, 14 students (77.8%) of students met or surpassed their growth expectancy; however, the percentage of meeting or surpassing their growth expectancy decreased each subsequent year. That is, in 2nd grade, 11 students (61.1%), 3rd grade 10 students (55.6%), and 4th grade 6 students (33.3%) met or surpassed their growth expectancy in reading. Eighteen students that did not qualify for services completed the Reading MAP assessments in grades 1st through 4th. Cochran's $Q$ test (Cochran, 1950) was run to determine if the percentage of students meeting or surpassing their expected growth in Reading was different in different grades. An exact sampling distribution was calculated. The percentage

144

of students meeting or surpassing their expected growth in Reading was not statistically significant at different grades, $Q = 7.415$, $p = .060$.

In the qualifying group, 17 students had Reading RIT scores available for grades 1st through 4th; consequently, these students were included within the Cochran's $Q$ test for those receiving CCPT services via Primary Project. In 1st grade, 7 students (41.2%) of students met or surpassed their growth expectancy. The percentage of meeting or surpassing their growth expectancy increased by 23.5 % during 2nd grade. That is, in 2nd grade, 11 students (64.7%) met or surpassed their growth expectancy in Reading. However, percentage of students meeting or surpassing their growth expectancy decrease the subsequent years. In 3rd grade 10 students (58.8%), and 4th grade 5 students (29.4%) met or surpassed their growth expectancy in reading. Seventeen students that did qualify for services completed the Reading MAP assessments in grades 1st through 4th. Cochran's $Q$ test (Cochran, 1950) was run to determine if the percentage of students meeting or surpassing their expected growth in Reading was different in different grades. An exact sampling distribution was calculated. The percentage of students meeting or surpassing their expected growth in Reading was not statistically significant at different grades, $Q = 6.067$, $p = .108$. Percentage of Reading growth expectancy met or surpassed for both Primary Project intervention groups across grades 1-4 are graphed below in Figure 10.

| | 1st | 2nd | 3rd | 4th |
|---|---|---|---|---|
| Non-Qualifier | 77.80% | 61.10% | 55.60% | 33.30% |
| Qualifier | 41.20% | 64.70% | 58.80% | 29.40% |
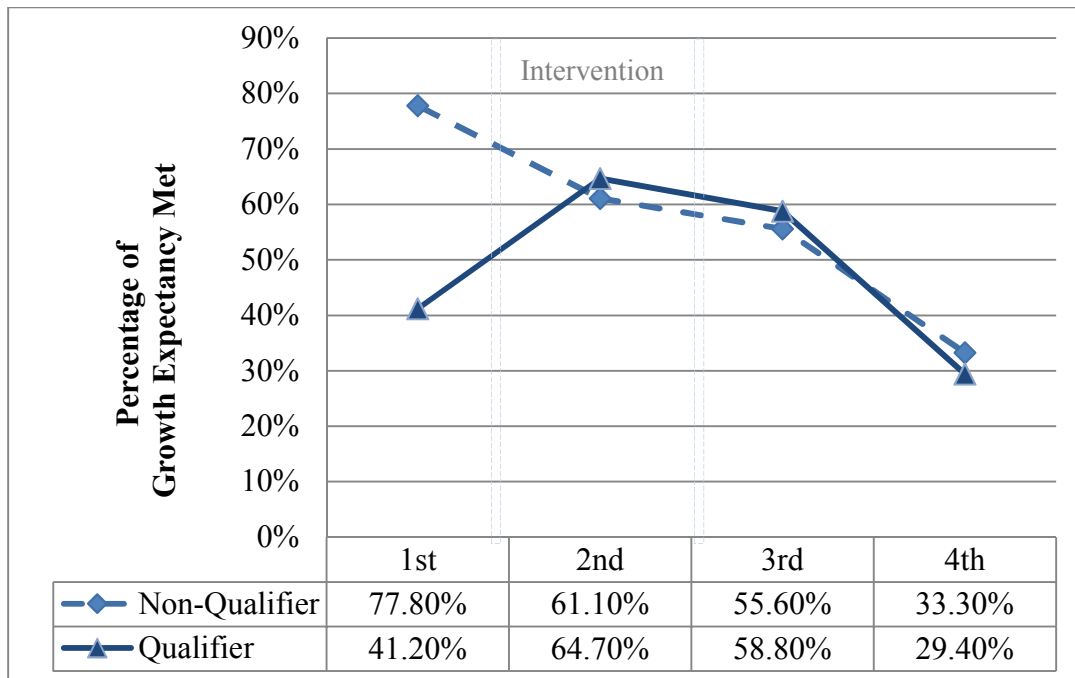
Figure 10. Reading: percentage of students meeting or surpassing expected growth

**Mathematics**

Analysis of data showed that there are two significant outliers across groups for mathematics as well; see Figure 11 below. The first outlier was participant number 39 in the Qualifier group in second grade. This student had an observed growth in reading of 134 RIT values that was significantly higher than the student's peers. The second outlier was participant number 14 in the Non-Qualifier group in the fourth grade. This student had an observed growth of -26 RIT values. This was significantly lower than this student's peers. The data for these two participants were removed.
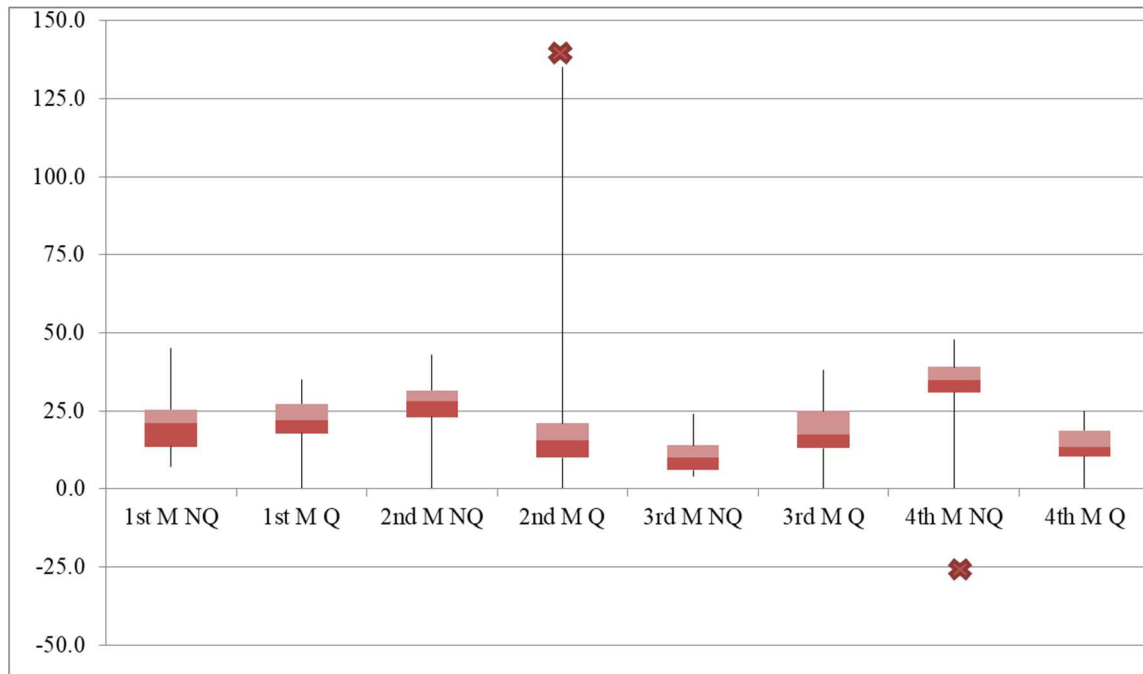
Figure 11. Mathematics: histogram and data outliers for mathematics

**RIT Scores**

Differences in Mathematics RIT scores for Fall and Spring testing times were compared between the non-qualifying and qualifying groups of students. During the fall semester, there were statistically significant differences between the non-qualifying and qualifying students in second, third, and fourth grades ($p < .05$); however, there was no statistically significant differences in first grade between the Primary Project intervention groups ($p = 0.151$). Alternatively, in the spring semester, there were statistically significant differences between Primary Project intervention groups in first grade and third grades ($p \leq 0.050$); however, there were not statistically significant differences between non-qualifying and qualifying students in second and fourth grades ($p = 0.054$, $p = 0.058$, respectively). Mathematics RIT score means, standard deviations, $F$-values, and $p$-values are listed in Table 8 below. Similarly, changes in

147

mean mathematics RIT scores across time and compared to national norming data is in Figure 12

below. Changes in mathematics percentile are depicted in Table 9 and Figure 13 below.

Table 8. Mathematics: RIT score means, standard deviations, *F*-values, and *p*-values

| Grade | Semester | Intervention | N | RIT Value M | SD | Diff. | F Value | Sig. |
|-------|----------|--------------|---|-------------|-----|-------|---------|------|
| 1st | Fall | Non-Qualifier | 18 | 162.78 | 12.86 | 6.6 | 2.16 | 0.151 |
| | | Qualifier | 17 | 156.18 | 13.72 | | | |
| | Spring | Non-Qualifier | 18 | 184.83 | 14.54 | 9.48 | 4.138 | 0.050 |
| | | Qualifier | 17 | 175.35 | 12.93 | | | |
| 2nd | Fall | Non-Qualifier | 18 | 178.67 | 12.03 | 9.31 | 5.245 | 0.029 |
| | | Qualifier | 17 | 169.35 | 12.02 | | | |
| | Spring | Non-Qualifier | 18 | 188.89 | 10.8 | 8.3 | 3.981 | 0.054 |
| | | Qualifier | 17 | 180.59 | 13.72 | | | |
| 3rd | Fall | Non-Qualifier | 18 | 191.44 | 10.03 | 12.03 | 9.029 | 0.005 |
| | | Qualifier | 17 | 179.41 | 13.5 | | | |
| | Spring | Non-Qualifier | 18 | 201.67 | 11.5 | 9.49 | 4.555 | 0.040 |
| | | Qualifier | 17 | 192.18 | 14.7 | | | |
| 4th | Fall | Non-Qualifier | 18 | 202.28 | 10.69 | 9.57 | 6.474 | 0.016 |
| | | Qualifier | 17 | 192.71 | 11.57 | | | |
| | Spring | Non-Qualifier | 18 | 210.22 | 13.93 | 8.58 | 3.844 | 0.058 |
| | | Qualifier | 17 | 201.76 | 11.38 | | | |
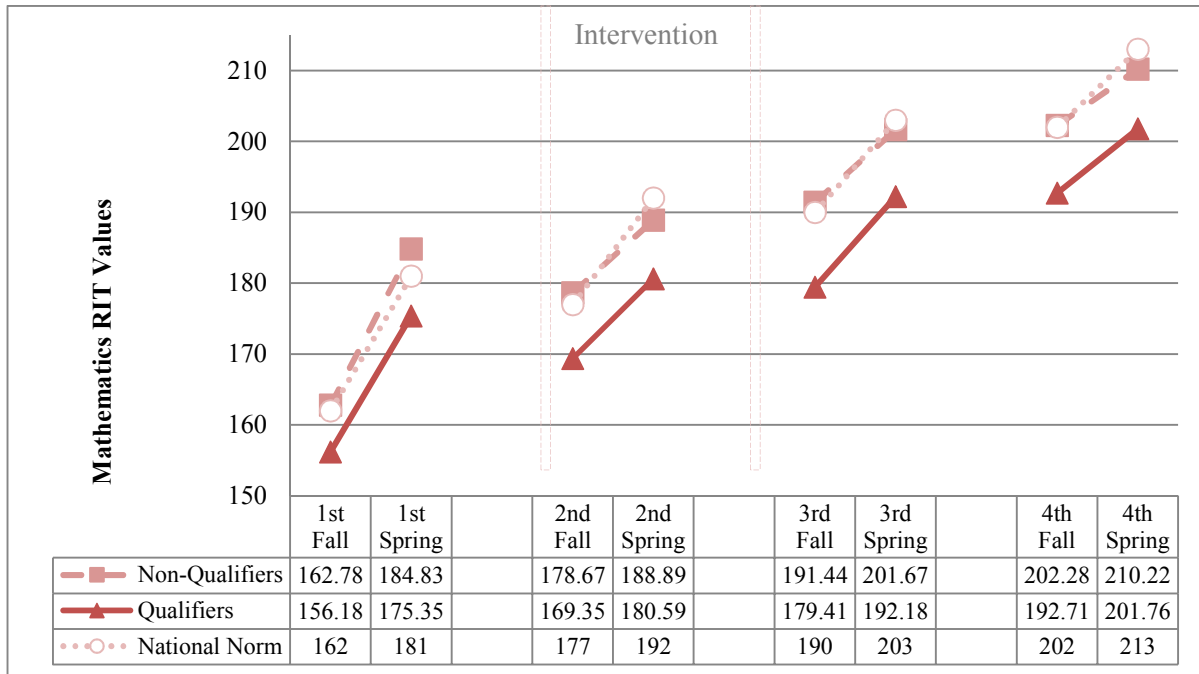
Figure 12. Mathematics: mean RIT values by intervention group and national norm

| | 1st Fall | 1st Spring | | 2nd Fall | 2nd Spring | | 3rd Fall | 3rd Spring | | 4th Fall | 4th Spring |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Non-Qualifiers | 162.78 | 184.83 | | 178.67 | 188.89 | | 191.44 | 201.67 | | 202.28 | 210.22 |
| Qualifiers | 156.18 | 175.35 | | 169.35 | 180.59 | | 179.41 | 192.18 | | 192.71 | 201.76 |
| National Norm | 162 | 181 | | 177 | 192 | | 190 | 203 | | 202 | 213 |

Table 9. Mathematics: mean percentiles by intervention

| Grade | Semester | Intervention | N | Percentile | Diff. |
|---|---|---|---|---|---|
| 1st | Fall | Non-Qualifier | 18 | 50th | 20 |
| | | Qualifier | 17 | 30th | |
| | Spring | Non-Qualifier | 18 | 60th | 27 |
| | | Qualifier | 17 | 33rd | |
| 2nd | Fall | Non-Qualifier | 18 | 52nd | 25 |
| | | Qualifier | 17 | 27th | |
| | Spring | Non-Qualifier | 18 | 39th | 20 |
| | | Qualifier | 17 | 19th | |
| 3rd | Fall | Non-Qualifier | 18 | 52nd | 32 |
| | | Qualifier | 17 | 20th | |
| | Spring | Non-Qualifier | 18 | 44th | 24 |
| | | Qualifier | 17 | 20th | |
| 4th | Fall | Non-Qualifier | 18 | 49th | 25 |
| | | Qualifier | 17 | 24th | |
| | Spring | Non-Qualifier | 18 | 40th | 19 |
| | | Qualifier | 17 | 21st | |

| | 1st Fall | 1st Spring | | 2nd Fall | 2nd Spring | | 3rd Fall | 3rd Spring | | 4th Fall | 4th Spring |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Non-Qualifiers | 50% | 60% | | 52% | 39% | | 52% | 44% | | 49% | 40% |
| Qualifiers | 30% | 33% | | 27% | 19% | | 20% | 20% | | 24% | 21% |
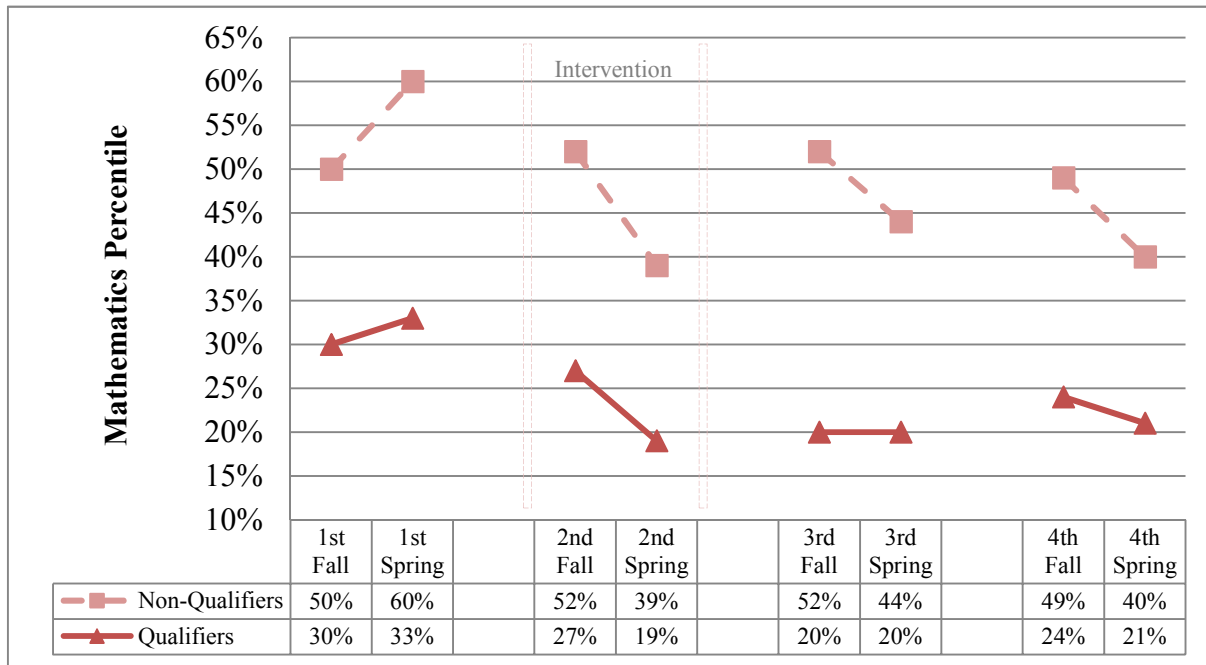
Figure 13. Mathematics: mean percentiles by intervention

Given the NWEA national norming data (Thum & Hauser, 2015), each student, regardless of RIT value achieved, has listed growth expectations for future MAP assessments. Consequently, observed growth for each intervention group was compared while taking expected growth into consideration. Figure 14 below depicts average observed growth in Reading MAP assessment RIT scores as well as average expected growth for both Primary Project intervention groups.
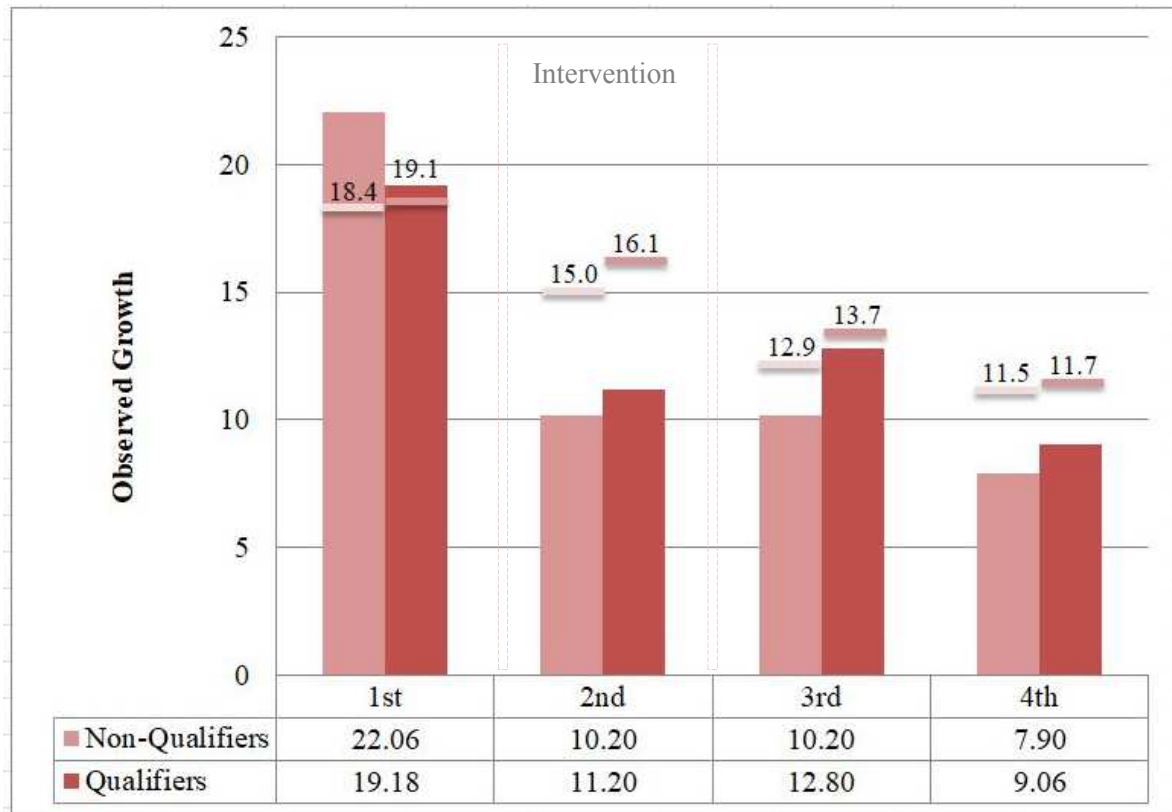
Figure 14. Mathematics: observed and expected growth by intervention

**Conditional Growth Index**

Conditional Growth Index in Mathematics RIT values between groups and across grades were normally distributed, as assessed by Shapiro Wilks test ($p > .05$) for all groups other than fourth grade non-qualifiers ($p = .001$). The assumption of homogeneity of variances was not violated as assessed by Levene's Test of Homogeneity of Variance ($p > .05$) for grades second, third, and fourth; however, there was not homogeneity of variances, assessed by Levene's Test of Homogeneity of Variance ($p = .041$) for first grade. The assumption of homogeneity of covariances was violated, as assessed by Box's Test of Equality of Covariance matrices ($p = .047$). The assumption of sphericity was not violated, as assessed by Maulchy's $W$ ($\chi^2 (5) = 2.257$, $p > .05$). Information regarding conditional growth index assumption tests in mathematics can be found in Table 10 below.

Table 10. Mathematics: conditional growth index assumption test results

| Assumption | Test | Statistic | df | Sig. |
|---|---|---|---|---|
| **Normality** | Shapiro Wilks test | | | |
| | 1st Grade: Non-Qualifiers | $F = 0.952$ | 18 | 0.460 |
| | 2nd Grade: Non-Qualifiers | $F = 0.963$ | 18 | 0.651 |
| | 3rd Grade: Non-Qualifiers | $F = 0.906$ | 18 | 0.074 |
| | 4th Grade: Non-Qualifiers | $F = 0.776$ | 18 | 0.001 |
| | | | | |
| | 1st Grade: Qualifiers | $F = 0.979$ | 17 | 0.942 |
| | 2nd Grade: Qualifiers | $F = 0.926$ | 17 | 0.187 |
| | 3rd Grade: Qualifiers | $F = 0.961$ | 17 | 0.659 |
| | 4th Grade: Qualifiers | $F = 0.978$ | 17 | 0.936 |
| | | | | |
| **Homogeneity of Variance** | Levene's Test of Equality | | | |
| | 1st Grade | $F = 4.518$ | 1, 33 | 0.041 |
| | 2nd Grade | $F = 0.554$ | 1, 33 | 0.462 |
| | 3rd Grade | $F = 1.371$ | 1, 33 | 0.250 |
| | 4th Grade | $F = 0.047$ | 1, 33 | 0.830 |
| | | | | |
| **Homogeneity of Covariance** | Box's $M$ Test = 21.352 | $F = 1.853$ | 10, 5163 | 0.047 |
| | | | | |
| **Sphericity** | Maulchy's $W$ test = .931 | $\chi^2 = 2.257$ | 5 | 0.813 |

There was no statistically significant interaction between the Primary Project intervention groups (i.e., non-qualifiers, qualifiers) and grade level, $F(3, 99) = 0.748$, $p = .526$, partial $\eta^2 = .022$. The main effect of grade level showed statistically significant difference in mean conditional growth index in Mathematics RIT scores at different grade levels, $F(3, 99) = 4.440$, $p = .006$, partial $\eta^2 = .119$. The main effect of Primary Project intervention group showed no statistically significant differences in conditional growth index in Mathematics RIT scores between students in the non-qualifying and qualifying groups, $F(1, 33) = 0.008$, $p = .950$, partial $\eta^2 < .001$. Mean Conditional Growth Index scores for Mathematics for Primary Project intervention group and across grade levels can be found in Table 11 and Figure 15 below.

Table 11. Mathematics: mean conditional growth index by intervention

| Grade | Intervention | N | Expected Growth M | Observed Growth M | Fall to Spring Growth SD | Conditional Growth Index |
|-------|-------------|---|-------------------|-------------------|--------------------------|--------------------------|
| 1st | Non-Qualifier | 18 | 18.4 | 22.06 | 7.32 | 0.499 |
| | Qualifier | 17 | 19.1 | 19.18 | 7.32 | 0.010 |
| 2nd | Non-Qualifier | 18 | 15 | 10.22 | 6.93 | -0.689 |
| | Qualifier | 17 | 16.1 | 11.24 | 6.93 | -0.702 |
| 3rd | Non-Qualifier | 18 | 12.9 | 10.22 | 6.41 | -0.418 |
| | Qualifier | 17 | 13.7 | 12.76 | 6.41 | -0.146 |
| 4th | Non-Qualifier | 18 | 11.5 | 7.94 | 6.41 | -0.555 |
| | Qualifier | 17 | 11.7 | 9.06 | 6.41 | -0.412 |



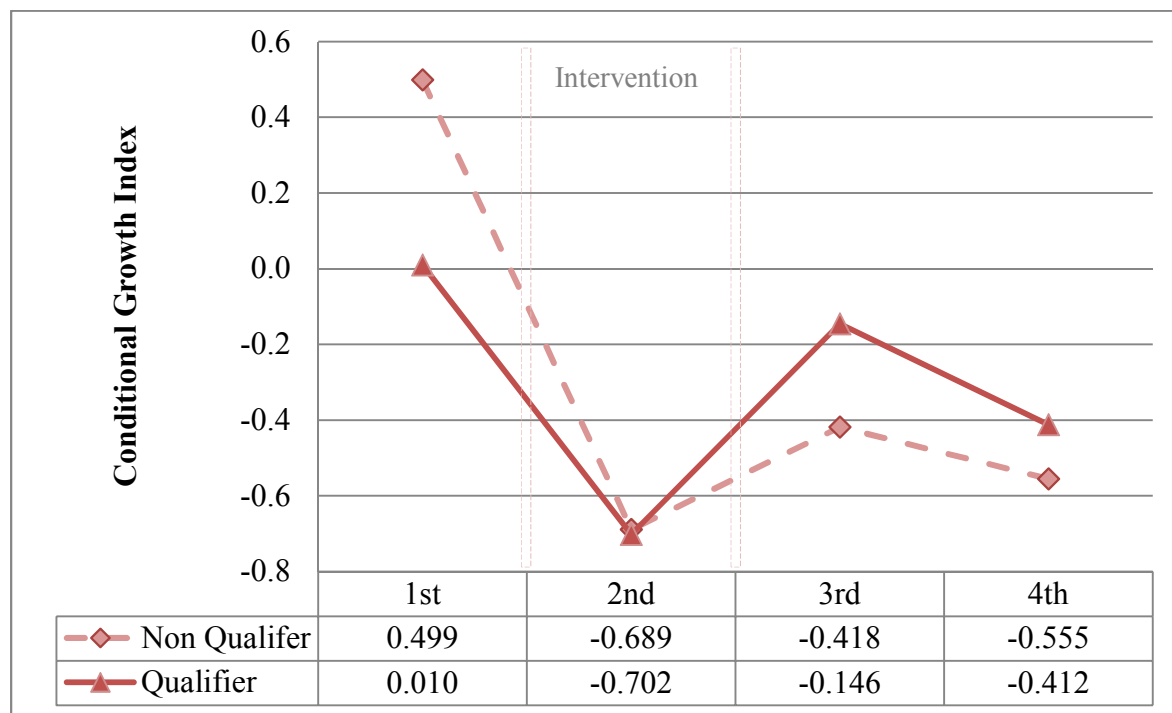| | 1st | 2nd | 3rd | 4th |
|--------------|-------|--------|--------|--------|
| Non Qualifer | 0.499 | -0.689 | -0.418 | -0.555 |
| Qualifier | 0.010 | -0.702 | -0.146 | -0.412 |

Figure 15. Mathematics: mean conditional growth index by intervention

**Cochran's *Q* Test**

In the non-qualifying group, 18 students had Mathematics RIT scores available for grades 1st through 4th; consequently, these students were included within the Cochran's *Q* test for those not receiving CCPT services via Primary Project. In 1st grade, 11 students (61.1%) of students met or surpassed their growth expectancy; however, the percentage of meeting or surpassing their growth expectancy decreased in second and third grades yet increased again in the fourth grade. That is, in 2nd grade, 6 students (33.3%) and in 3rd grade 5 students (27.8%) met or surpassed their growth expectancy in Mathematics. Alternatively, there was an increase in 4th grade as 6 students (33.3%). Eighteen students that did not qualify for services completed the Mathematics MAP assessments in grades 1st through 4th. Cochran's *Q* test (Cochran, 1950) was run to determine if the percentage of students meeting or surpassing their expected growth in Mathematics was different in different grades. An exact sampling distribution was calculated. The percentage of students meeting or surpassing their expected growth in Mathematics was not statistically significant at different grades, $Q = 4.889$, $p = .180$.

In the qualifying group, 17 students had Mathematics RIT scores available for grades 1st through 4th; consequently, these students were included within the Cochran's *Q* test for those receiving CCPT services via Primary Project. In 1st grade, 8 students (47.1%) of students met or surpassed their growth expectancy. There was a decrease in students meeting or surpassing their growth expectancy in the 2nd grade for qualifying students. That is, in 2nd grade, 3 students (17.6%) met or surpassed their growth expectancy in Mathematics. However, percentage of students meeting or surpassing their growth expectancy increased over the subsequent years. In 3rd grade 7 students (41.2%), and 4th grade 6 students (35.3%) met or surpassed their growth expectancy in Mathematics. Seventeen students that did qualify for services completed the

Mathematics MAP assessments in grades 1st through 4th. Cochran's $Q$ test (Cochran, 1950) was run to determine if the percentage of students meeting or surpassing their expected growth in Mathematics was different in different grades. An exact sampling distribution was calculated. The percentage of students meeting or surpassing their expected growth in Mathematics was not statistically significant at different grades, $Q = 3.231$, $p = .357$. Percentage of Mathematics growth expectancy met or surpassed for both Primary Project intervention groups across grades 1-4 are graphed below in Figure 16.



|  | 1st | 2nd | 3rd | 4th |
|---|---|---|---|---|
| Non Qualifer | 61.10% | 33.30% | 27.80% | 33.30% |
| Qualifier | 47.10% | 17.60% | 41.20% | 35.30% |
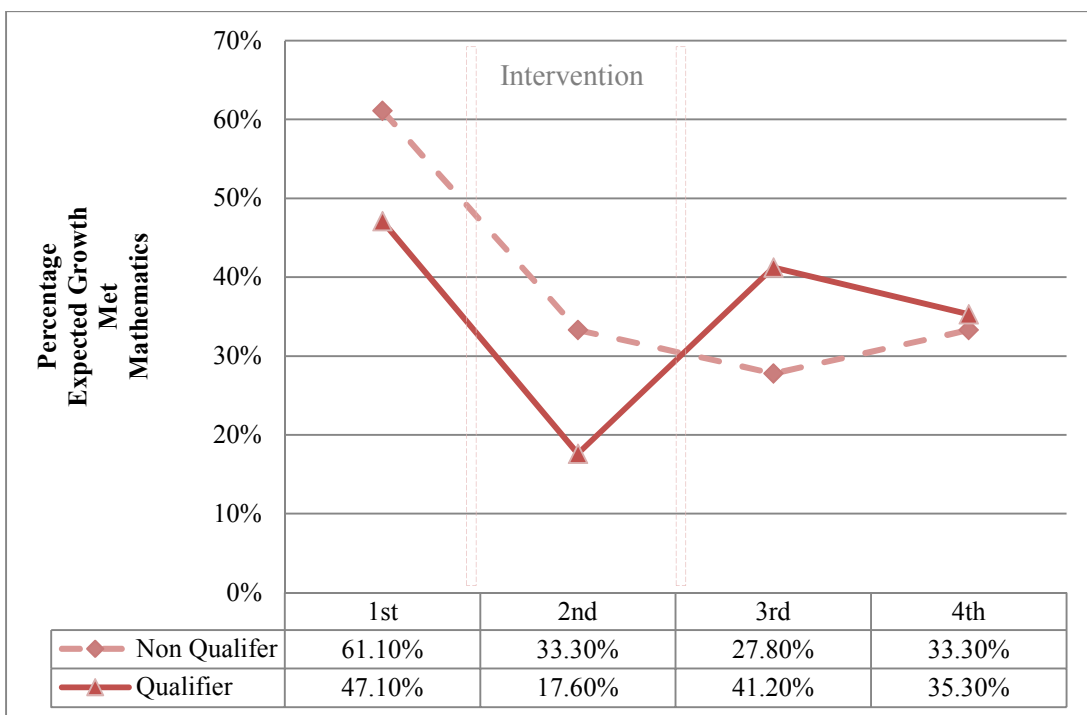
Figure 16. Mathematics: percentage of students meeting or surpassing expected growth

**Discordant Pair Analysis**

Utilizing concordant and discordant pairs is another method to assess students' meeting or surpassing expected growth on MAP assessments. In this study, students are matched across grade level; specifically, MAP assessment scores in Reading and Mathematics from first through fourth grades. Concordant refers to paired data matching while discordant refers to paired data

not matching. For this study, meeting expected growth and failing to meet expected growth were used to determine concordant and discordant pairs. For example, a student that met expected growth in first and second grade would be considered a concordant pair. However, a student that met growth expectancy in first grade yet failed to meet growth expectancy in second grade would be considered a discordant pair. For this description of data, only one of discordant pairs is of interest (i.e., discordant pairs where students that fail to meet growth expectancy in one year meet growth expectancy in the subsequent year). Assessment of these particular discordant pairs allows an additional lens through which to observe the potential long-term impact of CCPT through Primary Project on students' academic success. Specifically, discordant pair assessment allows for identification of students who failed to meet their growth expectancy before or during the CCPT and Primary Project intervention ($1^{st}$ or $2^{nd}$ grades) but then went on to meet their academic growth expectancy over the next two academic years ($3^{rd}$ and/or $4^{th}$ grades).

**Reading: Discordance**

In the non-qualifying student group, 14 out of 18 (78%) students met their growth expectancy in the first grade. For the four students who did not meet their growth expectancy in the first grade, two students (50%) met their growth expectancy in the second grade. Students who qualified for CCPT services via Primary Project had 7 out of 18 (41%) meet their expected growth in the first grade. Of the 10 students who did not meet their growth expectancy in the first grade, 6 students met their growth expectancy in the second grade (60%).

Seven of the 18 students did not meet their growth expectancy in second grade for the non-qualifying intervention. However, 5 out of those 7 students (71%) did meet their growth expectancy in the third grade. Additionally, 1 of those 7 students met their growth expectancy for fourth grade (14%). For the qualifying intervention group, 6 of the 18 students did not meet their

156

growth expectancy in the second grade; however, 2 of the 6 students (33%) did meet their

growth expectancy in reading in the third grade. Of those 14 students not meeting their growth

expectancy in reading in second grade, 6 students (43%) met their growth expectancy in the

fourth grade. Proportion of students and discordance for reading listed in Table 12 and Figure 17

below.

Table 12. Reading: discordance

| | n | 1st grade base line | 1st to 2nd Grade | | 2nd to 3rd Grade | | 2nd to 4th Grade | |
|---|---|---|---|---|---|---|---|---|
| | | Met | Failed | Met | Failed | Met | Failed | Met |
| **Non-Qualifiers** | 18 | 14 (78%) | 4 | 2/4 (50%) | 7 | 5/7 (71%) | 7 | 1/7 (14%) |
| **Qualifiers** | 17 | 7 (41%) | 10 | 6/10 (60%) | 6 | 2/6 (33%) | 6 | 3/6 (50%) |



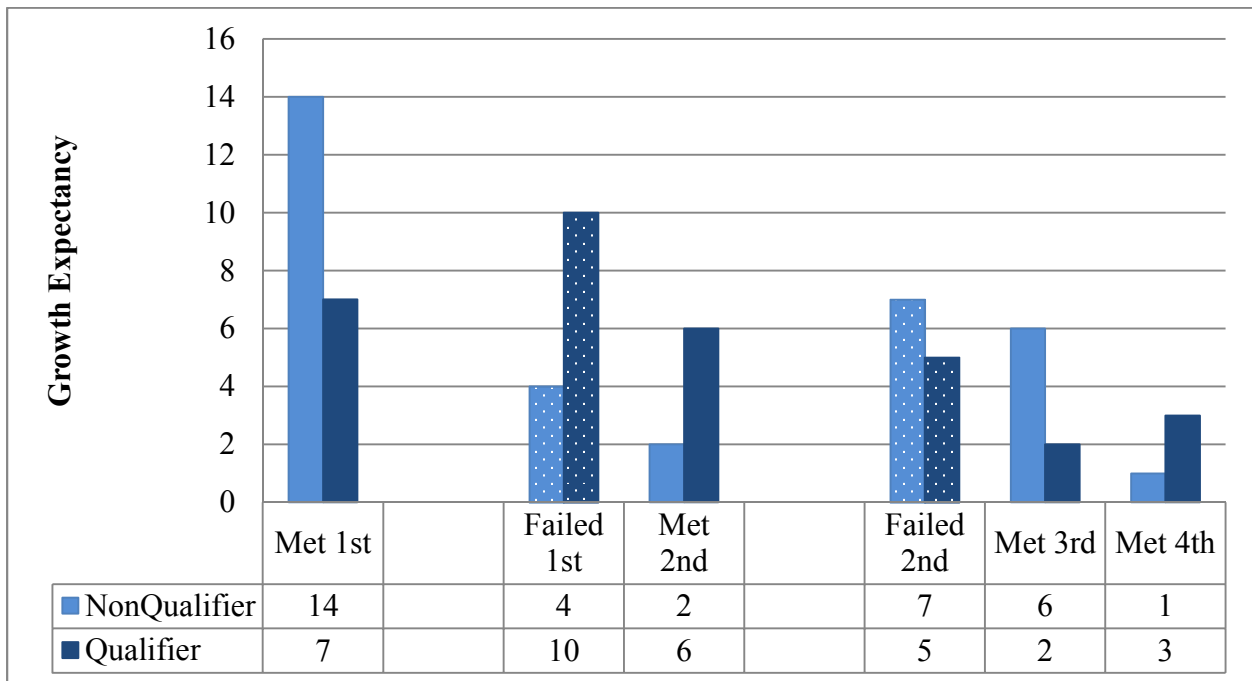| | Met 1st | | Failed 1st | Met 2nd | | Failed 2nd | Met 3rd | Met 4th |
|---|---|---|---|---|---|---|---|---|
| NonQualifier | 14 | | 4 | 2 | | 7 | 6 | 1 |
| Qualifier | 7 | | 10 | 6 | | 5 | 2 | 3 |

Figure 17. Reading: discordance

**Mathematics: Discordance**

In the non-qualifying student group, 11 out of 18 (61%) students met their growth expectancy in the first grade. For the seven students who did not meet their growth expectancy in the first grade, two students (29%) met their growth expectancy in the second grade. Students who qualified for CCPT services via Primary Project had 8 out of 18 (47%) meet their expected growth in the first grade. Of the nine students who did not meet their growth expectancy in the first grade, two students met their growth expectancy in the second grade (22%).

Twelve of the 18 students did not meet their growth expectancy in second grade for the non-qualifying intervention. However, 5 out of those 12 students (42%) did meet their growth expectancy in the third grade. Additionally, 5 of those 12 students met their growth expectancy for fourth grade (42%). For the qualifying intervention group, 14 of the 18 students did not meet their growth expectancy in the second grade; however, 7 of the 14 students (50%) did meet their growth expectancy in mathematics in the third grade. Of those 14 students not meeting their growth expectancy in reading in second grade, 6 students (43%) met their growth expectancy in the fourth grade. Proportion of students and discordance for reading listed in Table 13 and Figure 18 below.

Table 13. Mathematics: discordance

|  | *n* | 1st grade base line | 1st to 2nd Grade | | 2nd to 3rd Grade | | 2nd to 4th Grade | |
|---|---|---|---|---|---|---|---|---|
|  | *n* | Met | Failed | Met | Failed | Met | Failed | Met |
| **Non-Qualifiers** | 18 | 11 (61%) | 7 | 2/7 (29%) | 12 | 5/12 (42%) | 12 | 5/12 (42%) |
| **Qualifiers** | 17 | 8 (47%) | 9 | 2/9 (22%) | 14 | 7/14 (50%) | 14 | 6/14 (43%) |

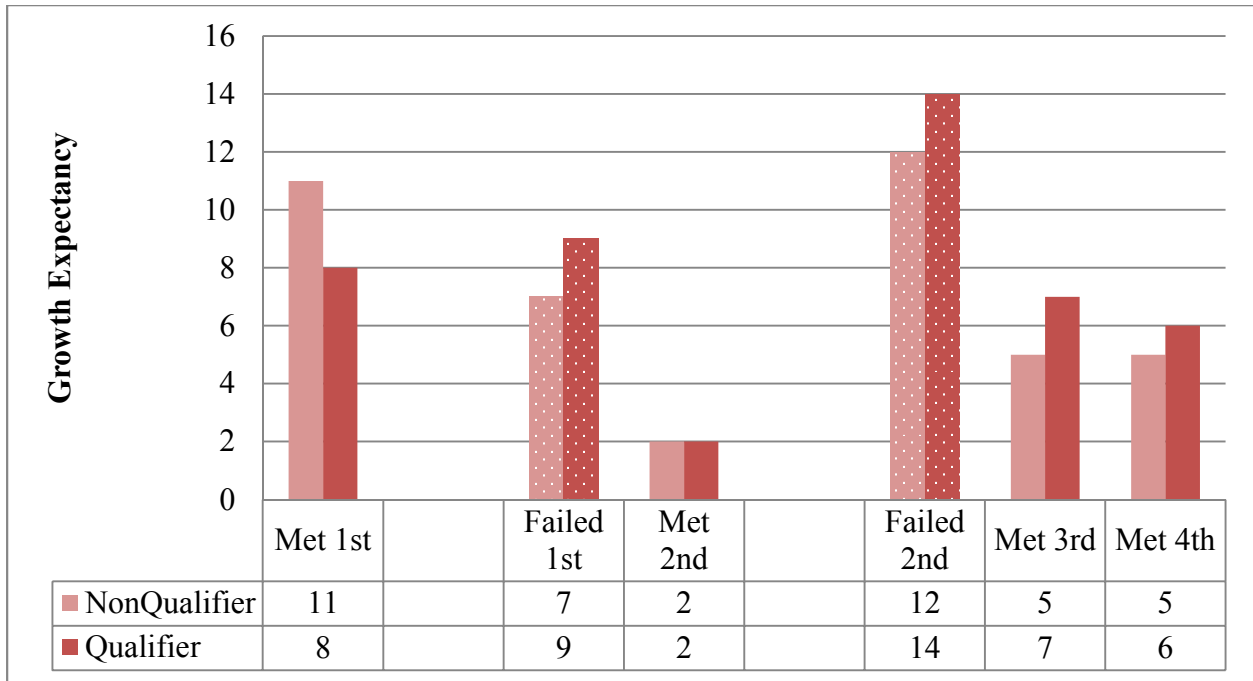| | Met 1st | | Failed 1st | Met 2nd | | Failed 2nd | Met 3rd | Met 4th |
|---|---|---|---|---|---|---|---|---|
| NonQualifier | 11 | | 7 | 2 | | 12 | 5 | 5 |
| Qualifier | 8 | | 9 | 2 | | 14 | 7 | 6 |

Figure 18. Mathematics: discordance

**Summary**

The purpose of this study was to evaluate the long-term impact of child-centered play therapy on academic achievement in elementary school children. The first research question assessed academic growth for students identified as at-risk; specifically, do at-risk students experience academic growth in subsequent academic years after receiving CCPT services via Primary Project. Analyses highlighted that at-risk students do experience academic growth in subsequent years after receiving CCPT services via Primary project; therefore, the hypothesis was supported. However, the second hypothesis purported that academic growth would align with normed RIT values on the MAP assessment. At-risk students met or surpassed their normed RIT values of expected growth in first and third grades; however, not in second or fourth grades in reading. In mathematics, at-risk students met their normed RIT values of expected growth in first grade, but not in subsequent academic years. Therefore, this hypothesis was not

fully supported.  The second research question assessed differences in academic growth between students identified as at-risk that qualified for CCPT services via Primary Project compared to non-qualifying students.  There were significant differences between qualifying and non-qualifying students in academic growth over subsequent academic years in reading and mathematics; specifically, the non-qualifying students were higher at each testing period and were closer to the national norm compared to qualifying students.  Therefore, the hypothesis of expected differences was supported.  However, though consistently lower, the qualifying students followed similar growth trends as the non-qualifying students and the national norm. The third research question assessed Conditional Growth Index (CGI) between the two intervention groups across subsequent academic years and it was hypothesized that there would be differences between qualifying and non-qualifying students.  There were no statistically significant differences found in CGI between intervention group or grade level.  Consequently, this hypothesis was not supported.  The final research question assessed students' probability of meeting their expected growth in reading and mathematics on the MAP assessment; specifically, if there were differences between intervention group over subsequent academic years.  It was hypothesized that there would be differences between the at-risk students that participated in CCPT services via Primary Project and the students that were not at-risk.  There was no difference between groups or grade levels in reading and mathematics; therefore, this hypothesis was not supported.

# CHAPTER 5: DISCUSSION

This study investigated the long-term impact of child-centered play therapy (CCPT) services via Primary Project on academic success in at-risk elementary school students. Specifically, the effect of CCPT treatment on academic growth and growth index as measured by MAP assessment scores over four years of elementary school was examined. Though academic skills were not addressed directly in CCPT services, it was predicted that focusing on emotional and social needs of students would help increase academic success. Previous research highlights the inverse relationship between emotional and behavioral health and academic success; specifically, the more problematic behavior exhibited, the lower academic levels achieved by students (Kremer et al., 2016; Perryman et al., 2020) Unfortunately, this inverse relationship has lasting effects over time. Hamre and Pianta (2005) note that at-risk students fall further behind each academic year. This highlights the imperative need to identify at-risk students and implement developmentally appropriate interventions to prevent further academic decline.

## Reading

MAP assessment reading RIT scores were assessed across first through fourth grades and compared between Primary Project intervention groups. There were statistically significant differences between the intervention groups across all four grade levels, meaning that the at-risk students in the qualifying group did not catch up to their peers' average RIT value over time. However, the students identified as at-risk in the second grade decreased their gap from the non-qualifying group of students; specifically, the observed difference between average RIT scores was 11.5 in both second and third grades but was decreased to a 9.8-point difference in fourth grade. MAP assessment RIT values are nationally normed and adjusted into student achievement

161

percentiles. This observed decrease in the RIT value gap between intervention groups shows a possible closing of the gap between qualifiers and non-qualifiers by 4 percentiles in student achievement (i.e., 27 percentiles difference in second grade to 23 in fourth). Though the at-risk students did not reach the same level of RIT score as their peers, these reading results were promising. Previous research highlights continued academic difficulties in at-risk students (Hamre & Pianta, 2005; Kremer et al., 2016; Perryman et al., 2020); therefore, any observable decrease in the gap between qualifying and non-qualifying students hints at a successful preventative intervention for at-risk students in reading.

There was no statistical significance in mean RIT scores between intervention groups over time; however, there were interesting trends noted. Students identified as at-risk via Primary Project scored below the national norm in first grade, meaning at-risk students were already behind their peers academically as the non-qualifying students who scored above the national norm that same year in school. Additionally, though starting RIT scores were significantly different, mean observed growth was similar between intervention groups; therefore, groups were growing at similar rates or following similar growth trends. Both groups met their expected growth in first and third grades while both groups failed to meet this standard in second and fourth grades. Given that lower RIT scores had greater growth expectancies than higher RIT scores, the similarities between the intervention groups' meeting expected growth further highlights the potential success of this preventative intervention for at-risk students.

There was no statistical significance on the mixed between-within-subjects ANOVA for Conditional Growth Index (CGI) in reading. Specifically, no difference was found between intervention groups as assessed by the standardized measure of observed growth compared to the 2015 NWEA (Thum & Hauser, 2015) national norms. CGI identifies student growth in standard

162

deviation units above or below the growth norms; consequently, a score of zero (0.0) indicates growth that equals the normed data. Students in both intervention groups followed similar patterns in CGI across the four academic years. Specifically, both groups had slightly positive CGI scores in both first and third grades, while slightly negative scores in both second and fourth grades. Though lower CGI scores were found for the qualifying students, the at-risk students were within ±0.1 standard deviations of the norm for first through third grades. This highlights that students qualifying for CCPT services showed gains that were equivalent to growth norms. Therefore, Primary Project could be considered an effective prevention program for elementary schools.

Another trend noted in this study is that less than half of qualifying students met their growth expectancy in the first grade. In comparison, over 75% of non-qualifying students met their growth expectancy in the same year. Similar to previous research, students identified as at-risk were already experiencing academic difficulties compared to their peers (Perryman et al., 2020). However, after qualifying students received CCPT services in the second grade, the qualifying group saw an increase of 23.5% in students meeting their growth expectancy; consequently, 64.7% of qualifying students met their growth expectancy after receiving CCPT services via Primary Project. Alternatively, non-qualifying students' rate of meeting their growth expectancy dropped from 77.8% to 61.1% in the second grade. The substantial increase for qualifying students and their subsequent similar trajectory in reading to their non-qualifying peers suggests utilizing CCPT services via Primary Project is successful in identifying students at-risk for school failure and an effective intervention to prevent at-risk students to continue falling behind academically.

This study did not have a control group of at-risk students not receiving CCPT services via Primary Project to compare the success of the intervention incorporated; thus, at-risk student trajectory without effective intervention is compared to previous research. However, in Perryman & Bowers' (2018) study, students identified as at-risk received services in one of two academic semesters while in the second grade. Consequently, there is one semester where half of the at-risk students received services while the other half did not. Students that qualified to receive services in the fall or the spring semester were compared in their percentage of growth expectancy met across four testing periods: (1) first grade fall to winter; (2) first grade winter to spring; (3) second grade fall to winter; and (4) second grade winter to spring. These percentages can be found in Figure 19 below. Though not a true control group throughout the entire study, it is evident that students identified as at-risk fall behind academically if no intervention is provided; specifically, at-risk students who did not receive CCPT services via Primary Project until the spring semester of second grade had a 25% decrease in students meeting their expected growth from the fall to winter reading testing period. Compared to a 22.2% increase in at-risk students meeting their growth expectancy that did receive CCPT services during that testing period. According to previous research, it would be expected for the at-risk students not receiving services to continue to decline; however, the at-risk students that received services during the second semester (i.e., spring) showed a 12.5% increase in meeting their expected growth. Though a short period of time allowed a true comparison between at-risk students receiving services and those waiting highlighted the imperative need to identify at-risk students and implement developmentally appropriate services to prevent further academic decline. This study suggests CCPT services via Primary Project intervention is a viable solution.
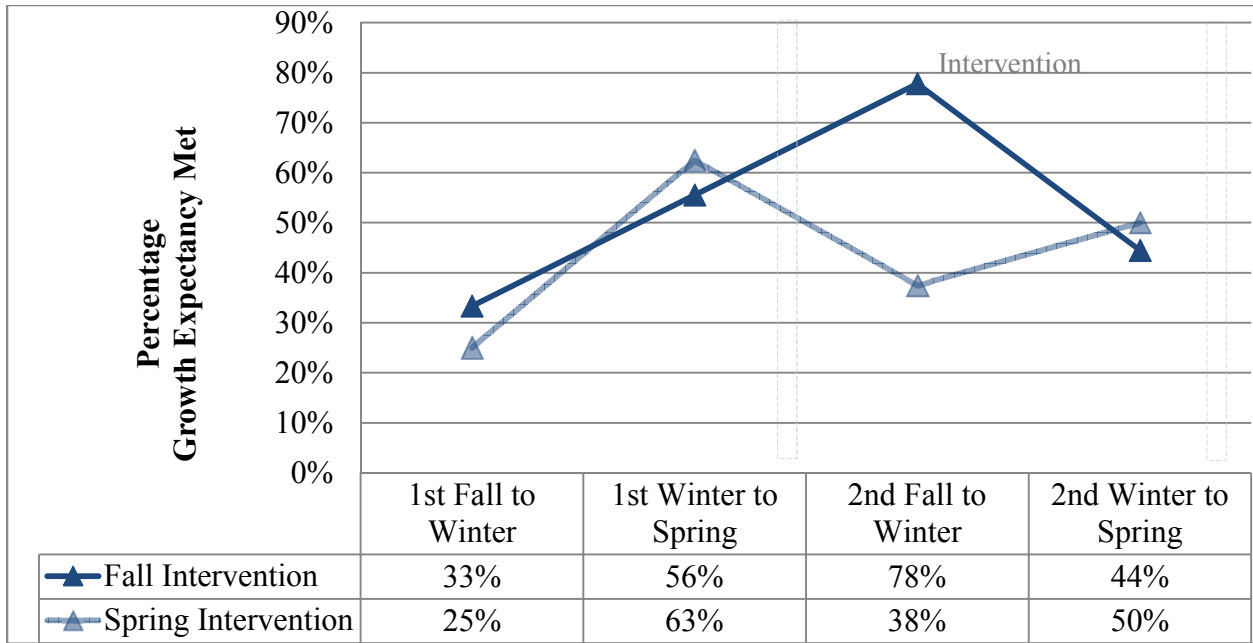
|  | 1st Fall to Winter | 1st Winter to Spring | 2nd Fall to Winter | 2nd Winter to Spring |
|---|---|---|---|---|
| Fall Intervention | 33% | 56% | 78% | 44% |
| Spring Intervention | 25% | 63% | 38% | 50% |

Figure 19. Reading: qualifier's percentage of growth expectancy met during 2nd grade

Lastly, comparing discordant pairs allowed for comparison of growth between groups across grade level. Specifically, comparing students that failed to meet their growth expectancy one year yet met the growth expectancy the subsequent year in school. Only seven students (41%) in the qualifying group met their growth expectancy in first grade. Of the 10 students that failed to meet their growth expectancy in the first grade, six students met their growth expectancy during their CCPT intervention year. This change and improvement led to over 60% of qualifying students meeting their growth expectancy in the second grade. Of the 6 students that failed to meet their growth expectancy in second grade in the qualifying group, 2 (33%) met their growth expectancy in the third grade, and 3 (50%) in the fourth grade. Compared to the non-qualifying students, only four students (22%) failed to meet their growth expectancy in the first grade. Of those four students, two (50%) met their growth expectancy in the second grade. Seven students (38%) failed to meet their growth expectancy in the second grade. Of these students, 5 (71%) met their growth expectancy in the third grade; however, only one (15%) met

their growth expectancy in the fourth grade. Implications of assessing discordant pairs highlights the significance of the preventative component of Primary Project; specifically, previous research shows that at-risk students decline academically each successive academic year if no intervention is implemented (Hamre & Pianta, 2005). Assessment of discordant pairs highlighted that after CCPT services, many qualifying students that failed to meet their growth expectancy in first or second grade went on to meet their growth expectancy in third or fourth grades. Specifically, 10 students failed to meet their growth expectancy in first grade; however, after intervention, 60% of those students met their growth expectancy in second grade. Similarly, 6 students failed to meet their growth expectancy in second grade but after intervention 33% and 50% met their growth expectancies in third and fourth grades, respectively. Previous research indicates that once identified as at-risk, students follow a failing trajectory in schools. However, this study highlights that 10 CCPT services via Primary Project has the potential to help to increase student success, as measured by meeting their growth expectancy in reading.

**Mathematics**

MAP assessment mathematics RIT scores were assessed across first through fourth grades and compared between Primary Project intervention groups. In the fall of first grade, there was no statistically significant different between intervention groups. However, there were statistically significant differences between Primary Project intervention groups in the spring of first grade and fall of second grade. After the CCPT intervention in second grade, there was no statistically significant difference between intervention groups. Unfortunately, after the intervention concluded, there were statistically significant differences between groups in the third grade (both fall and spring) as well as in the fall of fourth grades. Alternatively, by the end of fourth grade, there was no statistically significant difference between the qualifying and non-

qualifying groups in the spring. Though students qualifying for services had statistically significantly lower RIT scores in mathematics in first, part of second, and third grades, by the end of fourth grade differences between the qualifying and non-qualifying students was no longer statistically significant. This signifies that the gap between the two intervention groups decreased over time. Specifically, in the fall of first grade, there was only a 6.6 observed mean RIT value difference between the two intervention groups; however, at its greatest differences was in the fall of 3ʳᵈ grade where the observed difference was over 12 RIT scores between groups. By the end of fourth grade, the average difference between average RIT scores was 8.58. This decrease in the mean scores in mathematics is also visible in comparison of mean percentiles on the MAP assessment. Specifically, observed differences in mean percentiles between the non-qualifiers and qualifiers got as high as 32 percentile differences; however, by the end of fourth grade, mean difference in percentiles between groups was only 19. Therefore, a decrease in the gap between qualifying and non-qualifying students of 13 percentiles hints at a successful preventative intervention for at-risk students in mathematics. In a similar study assessing CCPT impact on academic success, Blanco et al. (2017) found that mathematic achievement required more extended periods to respond to the CCPT intervention.

There were interesting trends noted for mathematics as well. Students identified as at-risk via Primary Project scored below the national norm in first grade, meaning at-risk students were already behind their peers academically as the non-qualifying students scored above the national norm that same year in school. However, after the CCPT intervention, qualifying students matched their non-qualifying student peers in the second grade and followed the same trajectory of growth for third and fourth grades. Additionally, though starting RIT scores were significantly different, mean observed growth was similar between intervention groups; therefore, groups

were growing at similar rates or following similar growth trends. Both groups met their expected growth in first grade while both groups failed to meet this standard in second, third, and fourth grades. Though lower than their expected growth in grades 2-4, qualifying students had higher levels of observed growth than their non-qualifying peers. Given that lower RIT scores had greater growth expectancies than higher RIT scores, the higher levels of observed growth for the at-risk students further highlights the potential success of this preventative intervention for at-risk students in mathematics as well.

There was no statistical significance on the mixed between-within-subjects ANOVA for Conditional Growth Index (CGI) in mathematics. Specifically, no difference was found between intervention groups as assessed by the standardized measure of observed growth compared to the 2015 NWEA (Thum & Hauser, 2015) national norms. However, there was a statistically significant main effect for grade level suggesting that grade level contributed to changes in CGI across time. Students in both intervention groups followed similar patterns in CGI across the four academic years. Specifically, both groups had positive CGI scores in first grade, while negative scores in second, third, and fourth grades. Though lower CGI scores were found for the qualifying students in first and second grades, after the CCPT services via Primary Project intervention, the qualifying students had higher CGI scores than their non-qualifying peers. This highlights that students qualifying for CCPT services showed gains that were closer to growth norms according to their starting RIT scores than their non-qualifying peers. Therefore, Primary Project could be considered an effective prevention program for elementary schools.

Another trend noted in this study is that less than half of qualifying students met their growth expectancy in the first grade. In comparison, over 60% of non-qualifying students met their growth expectancy in the same year. Similar to previous research, students identified as at-

168

risk were already experiencing academic difficulties compared to their peers (Perryman et al., 2020). In second grade, both intervention groups showed declines in meeting their expected growth; specifically, the non-qualifying students decreased by 27.8% and the qualifying students decreased by 29.5%. However, after the CCPT intervention in second grade, the qualifying students increased their percentage of meeting their expected growth by 23.6% while their non-qualifying peers continued to decrease by another 5.5%. Both groups had similar percentage of students meeting their growth expectancy in the fourth grade. The substantial increase for qualifying students in the third grade and their subsequent similar trajectory in mathematics in fourth grade to their non-qualifying peers suggests utilizing CCPT services via Primary Project is successful in identifying students at-risk for school failure and could possibly be an effective intervention to prevent at-risk students from continuing to fall behind academically.

A comparison of qualifying students across the one semester available where some at-risk students received services while others did not also took place. Students that qualified to receive services in the fall or the spring semester were compared in their percentage of growth expectancy met across four testing periods: (1) first grade fall to winter; (2) first grade winter to spring; (3) second grade fall to winter; and (4) second grade winter to spring. These percentages can be found in Figure 20 below. At-risk students received CCPT services via Primary Project either in the fall semester or the spring; however, students were not randomly assigned to a semester to receive services. Alternatively, students who had more severe scores on the T-CRS 2.1 were deemed as higher-risk students and received services early (i.e., in the fall) rather that potentially falling further behind. Unlike the comparison in reading above, the students who received CCPT services in the spring (identified as at-risk, though less severe than at-risk students receiving services in the fall) had higher percentages of met growth expectancy across

all four time periods compared. However, there was a decrease in percentage of expected growth met for both at-risks groups in second grade, fall to winter testing period. This once again highlights that students identified as at-risk are more susceptible to school failure than non-at-risk peers. Also, both groups noted an increase in percentage of growth expectancy met after having received CCPT services via Primary Project. This change in trajectory for at-risk students highlights the viability of this intervention for preventative use.
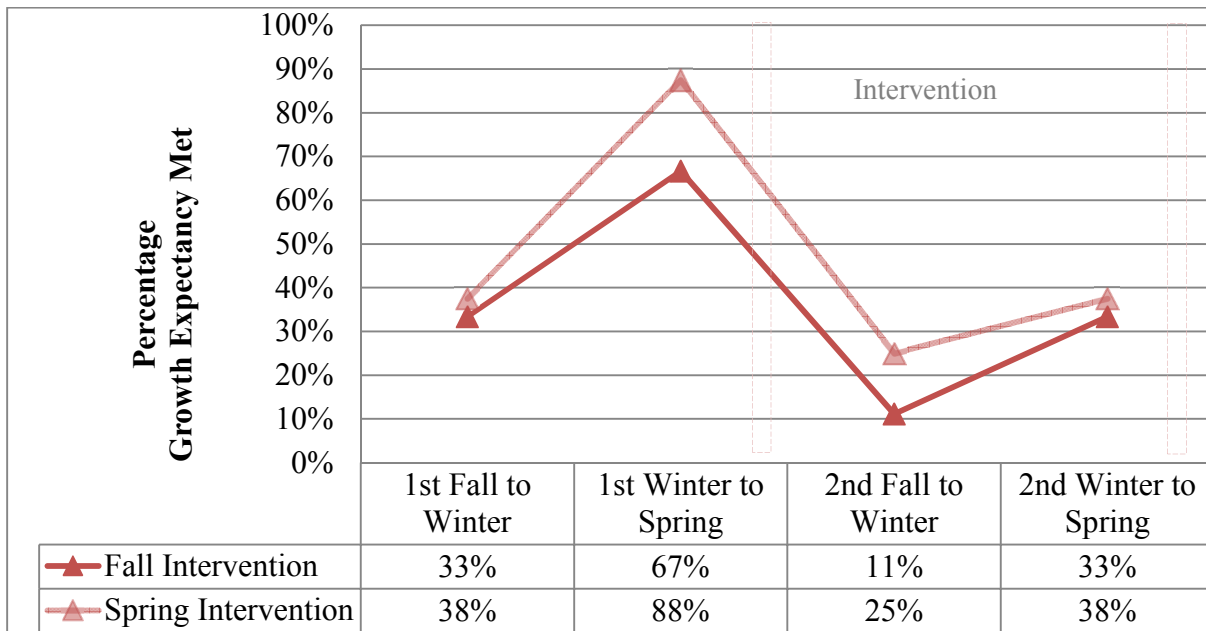


| | 1st Fall to Winter | 1st Winter to Spring | 2nd Fall to Winter | 2nd Winter to Spring |
|---|---|---|---|---|
| Fall Intervention | 33% | 67% | 11% | 33% |
| Spring Intervention | 38% | 88% | 25% | 38% |

Figure 20. Mathematics: qualifier's percentage of growth expectancy met during 2nd grade

The last trend involves comparing discordant pairs allowed for comparison and growth between groups across grade level. Specifically, comparing students that failed to meet their growth expectancy one year yet met the growth expectancy the subsequent year in school. Only eight students (47%) in the qualifying group met their growth expectancy in the first grade. Of the 9 students who failed to meet their growth expectancy, only two students (22%) met their growth expectancy in the second grade. Of the 14 students who failed to meet their growth expectancy in the second grade, 7 (50%) met their expectancy in mathematics in the third grade,

and 6 (43%) in the fourth grade. After the intervention year, at-risk students in the qualifying group made progress in meeting their growth expectancy in subsequent years. For the non-qualifiers, 11 students (61%) met their growth expectancy in the first grade. Of the seven students who failed to meet their growth expectancy, 2 students (29%) met it in second grade. Of the 12 students who failed to meet their growth expectancy in second grade, five (42%) met their growth expectancy in third grade, and 5 (42%) met it in the fourth grade. Qualifying students matched their non-qualifying peers in meeting the growth expectancy in both third and fourth grades. Implications of assessing discordant pairs highlights the significance of the preventative component of Primary Project; specifically, previous research shows that at-risk students decline academically each successive academic year if no intervention is implemented (Hamre & Pianta, 2005). Assessment of discordant pairs highlighted that after CCPT services, many qualifying students that failed to meet their growth expectancy in first or second grade went on to meet their growth expectancy in third or fourth grades. Specifically, 14 at-risk students failed to meet their growth expectancy in second grade; however, after intervention, 50% of those students met their growth expectancy in third grade and 43% in fourth grade. Previous research indicates that once identified as at-risk, students follow a failing trajectory in schools. However, this study highlights that 10 CCPT services via Primary Project can potentially increase student success, as measured by meeting their growth expectancy in mathematics.

### Clinical Significance

According to Kazdin (2003), clinical significance is the real life benefit that treatment offers to the client. Unfortunately, it is challenging to determine the clinical significance for the group of qualifying students; specifically, due to the quasi-experimental design and the lack of a control group of at-risk students not receiving CCPT services via Primary Project. According to

Hamre and Pianta (2005) students identified as at-risk can fall further behind academically with each successive year in school. Consequently, given that the students identified as at-risk in this study did not fall further behind academically compared to their peers identifies clinical significance for this study. Qualifying students matched their non-qualifying peers in second, third, and fourth grades in reading and mathematics observed growth and growth index highlights the helpful nature of CCPT via Primary Project intervention.

Previous CCPT research notes that typical sessions last 30-50 minutes and requires approximately 20 sessions to resolve issues children receiving services experience (Landreth, 2012). However, Bratton et al. (2005) highlight that it takes between 30 and 40 sessions of CCPT to reach optimal benefits. Blanco et al. (2012) examined the impact of 10 additional CCPT sessions after originally receiving 16 CCPT sessions with academically at-risk first grade students. Results of this study found continuous improvement throughout treatment over 26 CCPT sessions; consequently, this study suggests that continual use of CCPT results in a gradual increase in overall academic achievement (Blanco et al., 2012). Similarly, Blanco et al. (2017) examined the impact of CCPT over 26 sessions. This study found that growth measured was not uniform for students across the academic domains; specifically, math, reading, and spoken language skills improved statistically significant ways throughout 26 session CCPT intervention. A significant change in reading appeared after 16 sessions while math and spoken language appeared after 26 sessions. Consequently, some skills (i.e., math and spoken language) may require more extended periods to respond to the CCPT intervention (Blanco et al., 2017). In the current study, students received one 30-minute session for 10 weeks. This is significantly less than what previous CCPT research has highlighted for observing growth and change in behaviors. Therefore, any positive change in academic growth or growth index, statistically

significant or not, is highlights the clinical significance of CCPT intervention via Primary Project.

Results of this study underline the imperative need for early detection of at-risk students early in their academic career. The Primary Project early screening protocol utilized by Perryman & Bowers (2018) effectively identified second grade students at-risk for school failure. These students exhibited mental and behavioral issues at the time of screening; however, they were already behind their peers academically in the first grade. Results of this study identify links between mental and behavioral health issues and academic success; specifically, children suffering from mental and behavioral health concerns may not be actively engaged in academic instruction in the classrooms leading to difficulties processing academic information (Elias, 2006; Zins & Elias, 2006). Consequently, these students continue to fall behind in school over time. However, results of this study showed early detection and implementation of mental health programs into the school effectively increased academic success in the schools; alternatively, without this intervention, students might have otherwise experienced academic decline (Perryman et al., 2020). This study highlights the need for effective prevention programs; specifically, prevention from further and continuous decline academically. CCPT services via Primary Project was an effective intervention as it slowed at-risk students' academic decline and helped at-risk students match their non-qualifying peers' growth trajectory in subsequent academic years.

Lastly, understanding and interpreting $p$ values is critical in quantitative research and statistical analyses; however, a $p$ value is just one of many tools to help interpret findings from research (Thiese et al., 2016). Though they have been used to determine if there is statistically significant differences between groups, $p$ values were not intended as an absolute threshold.

Consequently, it does not suffice as strength of evidence to simply note the magnitude of a *p* value on a continuum (Thiese et al., 2016). There are many elements that can impact the calculated *p* value; specifically, sample size, magnitude of the relationship, and error (Tabachnick & Fidell, 2007; Tabachnick & Fidell, 2001; Thiese et al., 2016). Specifically, there is an inverse relationship between *p* value and sample size; consequently, the larger the sample size, the more likely a study will find a significant relationship. As this study had fewer than 40 participants, the *p* values could have been impacted by the small sample size. Therefore, the significance, importance, and impact of this study and intervention should not rest solely on *p* values as they should be considered on a spectrum, not a binary significant or non-significant metric (Thiese et al., 2016).

**Limitations and Implications for Future Research**

While the results of this study offer valuable information regarding the long-term impact of CCPT services via Primary Project on at-risk elementary school students, there are limitations to this study that should be considered. Participants of this study were selected from a single elementary school in the southcentral region of the United States; consequently, this use of limited range population from a specific geographic location limits possible generalization of the anticipated results to other areas. Additionally, this elementary school was considered a Title 1 school due to high percentages of children from low-income families (US Department of Education, 2019) as well as having an ethnically diverse population of students. A larger scale replication study considering multiple schools across various settings is suggested as a way of increasing generalizability.

This study was quasi-experimental in nature and is a limitation to the generalizability to the results. This study compared students identified as at-risk to their non-at-risk peers. All at-

risk students received CCPT services via Primary Project. There was no control group of at-risk students that did not receive the CCPT intervention; consequently, there is no true control group for comparison of the CCPT intervention for at-risk students. In future research, comparing at-risk students receiving CCPT services to at-risk students in a waiting list control group would allow for a true experimental design and a more clear understanding of the impact of CCPT services via Primary Project impact academic success in at-risk students.

Length of treatment for this study is also a limitation. Students only received one 30 minute session of CCPT for 10 weeks. The length of treatment for this study may have limited the effect the treatment had with the group of qualifying students; specifically, it is likely that the length of time (10 weeks) of treatment may not be adequate to allow for significant changes in the areas of academic growth in reading and/or mathematics. Therefore, replication of this study should consider increasing number of CCPT sessions provided via the Primary Project intervention.

The MAP assessment is used to determine academic growth via a computerized adaptive test (CAT) (Thum & Hauser, 2015). CAT tests are constructed based on the student's performance while responding to items; therefore, each MAP assessment differs in content based on the student. Additionally, the MAP assessment has different growth expectancies per grade level. Consequently, it is a challenging assessment to determine intervention impact. Replication of this study should consider alternative achievement tests to assess academic success and achievement.

Teachers play a critical role in the identification of students that would benefit from early support and intervention; specifically, as teachers generally observe the first signs of school difficulty (Virinkoski et al., 2018). Given the importance of teachers' understanding,

relationship, and rating of their students', the T-CRS was developed by Hightower et al. (1986) in order to identify students' strengths and weaknesses to best plan and evaluate interventions via Primary Project.  Updates and revisions for the assessment led to the T-CRS 2.1 (Hightowers & Perkins, 2010) which has been found to be a reliable and valid measure for students' socio-emotional adjustment in schools.  This study further highlights the significance of teachers' abilities to identify students that would benefit from additional support and intervention.  Second grade teachers were able to accurately identify students with socio-emotional adjustment issues in school via the T-CRS 2.1 (Hightowers & Perkins, 2010); additionally, these students were behind academically from the first grade.  Therefore, teachers play a critical role for identifying students that need additional support to further prevent school adjustment issues and academic failure in at-risk students and the T-CRS 2.1 (Hightowers & Perkins, 2010) could be a useful tool in teacher identification.  Consequently, future studies assessing preventative programs for students' behavioral, emotional, and academic struggles could utilize teacher report via the T-CRS 2.1 (Hightowers & Perkins, 2010).

Studies examining CCPT interventions and academic success have highlighted promising results in both at-risk and average students in second grade, first grade, and kindergarten (Blanco & Ray, 2011, Blanco et al., 2012, Blanco et al., 2015, Blanco et al., 2017, Blanco et al., 2019, Perryman et al., 2020). Students identified as at-risk in this study were already behind their peers academically; therefore, it is suggested that future studies implement the CCPT intervention via Primary Project earlier in students' academic careers. Students' receiving early identification and preventative programs in pre-school may help at-risk students not fall behind their peers academically. Early identification and intervention is more effective than later intervention as it would prevent learning deficits and would reduce the development of socio-emotional problems

that would need additional intervention (Blanco et al., 2019). Given the link between behavioral issues and academic failure, providing effective interventions at earlier ages could mitigate the development of long-lasting mental health problems that interfere with academic success (Blanco et al., 2019; Bratton et al., 2013). Future research should be aimed at implementing CCPT via Primary Project to pre-school aged children in order to prevent behavioral, socio-emotional, and academic issues; consequently, it is expected that students receiving these services would not be behind their peers academics in elementary school years.

Despite limitations discussed, this is the longest longitudinal study assessing child centered play therapy on at-risk students' academic success currently to date. Previous studies long-term examination spans the course of 26 weeks. In comparison, this study assessed the impact of a therapeutic intervention on academic success over the span of four academic years. Given the novelty and considerable increase in length of assessment, results of this study can contribute to the current literature regarding CCPT and Primary Project in the schools. Results of this study highlight the imperative need to replicate this study with a control and continue assessing the impact of CCPT via Primary Project on academic achievement.

**Conclusion**

Due to the No Child Left Behind Act and legislation, U.S. school children are expected to meet certain academic standards within their respective grade levels (Klein, 2015); however, many children suffering from mental and behavioral health issues have difficulties attaining these standards due to emotional interference with their academic learning (Blanco, 2009; Elias, 2006; Perryman et al., 2020). Students with mental and behavioral issues are more likely to struggle academically, fail, or drop out completely (Elias et al., 2003). These students are at-risk and previous research highlights that without intervention, they fall further behind each

subsequent academic year (Hamre & Pianta, 2005). Therefore, it is imperative to identify at-risk students and implement developmentally appropriate interventions within the school to help promote mental and behavioral health as well as academic achievement (Blanco et al., 2019; Perryman et al., 2020).

Findings of this study indicate that CCPT services implemented via Primary Project intervention can have a positive impact on academic achievement, as measured by observed growth and growth index, in at-risk second grade students. Consequently, implementing two evidence-based practices (i.e., CCPT and Primary Project) has potential as an effective intervention to positively impact academic achievement in at-risk elementary school students across subsequent grade levels. Based on an exhaustive review of literature, the present student represents the longest longitudinal study to date assessing the effects of CCPT on academic achievement. Based on the importance for counselors in the school setting to promote academic success, as well as mental and behavioral health, this study contributes data that supports the use of CCPT and Primary Project within the school system as an intervention to prevent further academic decline and future school failure in at-risk elementary school students.

# REFERENCES

Achenbach, T. M. (1991). *Manual for the teacher's report form and 1991 profile*. University of Vermont Department of Psychiatry.

Association for Play Therapy. (n.d.). Association for play therapy: Mental health professionals applying the therapeutic power of play! [Website]. *What Is Play Therapy*. https://www.a4pt.org/

Axline, V. (1947a). Nondirective therapy for poor readers. *Journal of Consulting Psychology*, *11*, 61–69.

Axline, V. (1947b). *Play therapy*. Houghton Mifflin.

Axline, V. M. (1949). Mental deficiency—Symptom or disease? *Journal of Consulting Psychology*, *13*(5), 313–327. https://doi.org/10.1037/h0059597

Azar, M. (1979). *A study investigating the relationship between children's self concept and reading achievement: The effect of play therapy and reading enrichment clubs upon self concept* [Dissertation]. Northwestern University.

Badenoch, B. (2008). *Being a brain-wise therapist: A practical guide to interpersonal neurobiology* (1 edition). W. W. Norton & Company.

Badenoch, B. (2017). *The heart of trauma: Healing the embodied brain in the context of relationships* (1st edition). W. W. Norton & Company.

Bills, R. E. (1950). Nondirective play therapy with retarded readers. *Journal of Consulting Psychology*, *14*(2), 140–149. https://doi.org/10.1037/h0059850

Bitsko, R. H., Holbrook, J., Robinson, L., Kaminski, J., Ghandour, R., Smith, C., & Peacock, M. (2016). Health care, family, and community factors associated with mental, behavioral, and developmental disorders in early childhood—United States, 2011–2012. *Center for Disease Control and Prevention. MMWR. Morbidity and Mortality Weekly Report*, *65*, 221–226. https://doi.org/10.15585/mmwr.mm6509a1

Blanco, P. J. (2009). *The impact of school-based child centered play therapy on academic achievement, self-concept, and teacher-child relationship stress.* [Dissertation]. University of North Texas.

Blanco, P. J., Holliman, R. P., Ceballos, P. L., & Farnam, J. L. (2019). Exploring the impact of child-centered play therapy on academic achievement of at-risk kindergarten students. *International Journal of Play Therapy*, *28*(3), 133–143. https://doi.org/10.1037/pla0000086

Blanco, P. J., Holliman, R. P., Muro, J. H., Toland, S., & Farnam, J. L. (2017). Long Term Child-Centered Play Therapy Effects on Academic Achievement with Normal Functioning Children. *Journal of Child and Family Studies*, *26*(7), 1915–1922. https://doi.org/10.1007/s10826-017-0701-0

Blanco, P. J., Muro, J. H., Holliman, R., Stickley, V. K., & Carter, K. (2015). Effect of Child-Centered Play Therapy on Performance Anxiety and Academic Achievement. *Journal of Child and Adolescent Counseling*, *1*(2), 66–80. https://doi.org/10.1080/23727810.2015.1079117

Blanco, P. J., & Ray, D. C. (2011). Play therapy in elementary schools: A best practice for Improving academic achievement. *Journal of Counseling & Development*, *89*(2), 235–243. https://doi.org/10.1002/j.1556-6678.2011.tb00083.x

Blanco, P. J., Ray, D. C., & Holliman, R. (2012). Long-term child centered play therapy and academic achievement of children: A follow-up study. *International Journal of Play Therapy*, *21*(1), 1–13. https://doi.org/10.1037/a0026932

Boehm-Morelli, H. (1999). *Reading self-concept and reading achievement as a function of play and nondirective play therapy* [Psy.D., Alfred University]. https://0-search-proquest-com.library.uark.edu/docview/304494265/abstract/A842819DFDD04085PQ/1

Boike, M. F., Gesten, E. L., Cowen, E. L., Felner, R. D., & Francis, R. (1978). Relationships between family background problems and school problems and competencies of young normal children. *Psychology in the Schools*, *15*, 283–290.

Bratton, S. C., Ceballos, P. L., Sheely-Moore, A. I., Meany-Walen, K., Pronchenko, Y., & Jones, L. D. (2013). Head start early mental health intervention: Effects of child-centered play therapy on disruptive behaviors. *International Journal of Play Therapy*, *22*(1), 28–42. https://doi.org/10.1037/a0030318

Bratton, S. C., Ray, D., Rhine, T., & Jones, L. (2005). The efficacy of play therapy with children: A meta-analytic review of treatment outcomes. *Professional Psychology: Research and Practice*, *36*(4), 376–390. https://doi.org/10.1037/0735-7028.36.4.376

Brown, L. P., & Cowen, E. L. (1987). Perceptions, experiences, and socioemographic differences in stressful life-events among children. *American Journal of Community Psychology*, *15*, in press.

Brown, S., & Vaughan, C. (2010). *Play: How it shapes the brain, opens the imagination, and invigorates the soul* (Reprint edition). Avery.

Caprara, G. V., Barbaranelli, C., Pastorelli, C., Bandura, A., & Zimbardo, P. G. (2000). Prosocial Foundations of Children's Academic Achievement. *Psychological Science*, *11*(4), 302–306. https://doi.org/10.1111/1467-9280.00260

Carlson, E., Sroufe, L., Collins, W., Jimerson, S., Weinfield, N., & Hennighausen, K. (1999). Early environmental support and elementary school adjustment as predictors of school adjustment in middle adolescence. *Journal of Adolescent Research*, *14*(1), 72–94.

Chandler, C., Weissberg, R. P., Cowen, E. L., & Guare, J. (1984). The long-term effects of a school-based secondary prevention program for young maladapting children. *Journal of Consulting and Clinical Psychology*, *52*, 165–170.

Cochran, W. G. (1950). The comparison of percentages in matched samples. *Biometrika*, *37*(3/4), 256–266. JSTOR. https://doi.org/10.2307/2332378

Comer, J. P. (2013). SCHOOL AND MORAL JUSTICE: The School Development Program as a Case Study. *Journal of Character Education; Greenwich*, *9*(2), 91–106.

Council for Accreditation of Counseling and Related Educational Programs. (2016). *2016 CACREP Standards*. https://www.cacrep.org/for-programs/2016-cacrep-standards/

Courtiol, E., & Wilson, D.A. (2015). The olfactory thalamus: Unanswered questions about the role of the mediodorsal thalamic nucleus in olfaction. *Frontiers in Neural Circuits, 9*(49), 1-8.

Cowen, E., & Hightower, A. (1989). The primary mental health project: Thirty years after. In R. Hess & J. DeLeon (Eds.), *The national mental health association: Eighty years of involvement in the field of prevention* (pp. 225–257). Haworth Press.

Cowen, E. L., Dorr, D. A., Clarfield, S. P., Kreling, B., McWilliams, S. A., Pokracki, F., Pratt, D. M., Terrell, D., & Wilson, A. (1973). The AML: A quick screening device for early detection of school maladaptation. *American Journal of Community Counseling*, *121*, 145–154.

Cowen, E. L., Dorr, D. A., & Pokracki, F. (1972). Selection of nonprofessional child aides for a school mental health project. *Community Mental Health Journal*, *21*, 145–154.

Cowen, E. L., Dorr, D. A., Trost, M. A., & Izzo, L. D. (1972). A follow-up study of maladapting school children seen by nonprofessionals. *Journal of Consulting and Clinical Psychology*, *39*, 235–238.

Cowen, E. L., Gesten, E. L., & DeStefano, M. A. (1977). Nonprofessional and professional help agents' views of interventions with young maladapting school children. *American Journal of Community Psychology*, *5*, 469–479.

Cowen, E. L., Gesten, E. L., Wilson, A. B., & Lorion, R. P. (1977). Helping contacts between nonprofessional child-aides and young children experiencing school adjustment problems. *Journal of School Psychology*, *15*, 349–357.

Cowen, E. L., Lorion, R. P., & Caldwell, R. A. (1975). Nonprofessionals' judgments about clinical interaction problems. *Journal of Consulting and Clinical Psychology, 43*, 619–625.

Cowen, E. L., Lorion, R. P., & Dorr, D. (1974). Research in the community cauldron: A case history. *Canadian Psychologist, 15*, 313–325.

Cowen, E. L., Pederson, A., Babigian, H., Izzo, L. D., & Trost, M. A. (1973). Long-term follow-up of early detected vulnerable children. *Journal of Consulting and Clinical Psychology, 41*, 438–446.

Cowen, E. L., Weissberg, R. P., & Guare, J. (1984). Differentiating attributes of children referred to a school mental health program. *Journal of Abnormal Child Psychology, 12*, 397–409.

Cowen, E. L., Weissberg, R. P., Lotyczewski, B. S., & et al. (1983). Validity generalization of school-based preventive mental health program. *Professional Psychology, 14*, 613–623.

Cowen, E. L., Zax, M., Izzo, L. D., & Trost, M. A. (1966). Prevention of emotional disorders in the school setting: A further investigation. *Journal of Consulting Psychology, 30*, 381–387.

Cozolino, L. (2014). *The neuroscience of human relationships: Attachment and the developing social brain* (Second edition). W. W. Norton & Company.

Crow, J. C. (1989). *Play therapy with low achievers in reading* [Ed.D., University of North Texas]. https://0-search-proquest-com.library.uark.edu/docview/303729368/abstract/1B212D178AF14592PQ/1

de Lugt, J. (2007). Academic achievement of students with emotional and behavioral disorders: A review of research. *Exceptionality Education Canada, 17*(3), 111–136.

Demanchick, S., & Johnson, D. B. (2004). *Report to alliance for families and children in Hennepin County* (Technical Report No. F04-005; Primary Project, p. 20). Children's Institute. https://www.childrensinstitute.net/sites/default/files/documents/T04-005.pdf

DeStefano, M. A., Gesten, E. L., & Cowen, E. L. (1977). Teachers' views of the treatability of children's school adjustment problems. *Journal of Special Education, 11*, 275–280.

Dorr, D. A., Cowen, E. L., & Kraus, R. (1973). Mental health professionals view nonprofessional mental health workers. *American Journal of Community Psychology, 11*, 118–122.

Dorr, D. A., Cowen, E. L., & Sandler, I. N. (1973). Changes in nonprofessional mental health workers' response preference and attitudes as a function of training and supervised field experience. *Journal of Consulting and Clinical Psychology, 45*, 181–185.

Dulsky, S. (1942). Affect and intellect: An experimental study. *Journal of General Psychology*, *27*, 199–220.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions. *Child Development*, *82*(1), 405–432. https://doi.org/10.1111/j.1467-8624.2010.01564.x

Earl, L., Hargreaves, A., & Ryan, J. (1996). *Schooling for Change: Reinventing Education for Early Adolescents*. Routledge. http://ebookcentral.proquest.com/lib/uark-ebooks/detail.action?docID=172049

Elias, M. (2004). Strategies to infuse social and emotional learning into academics. In J. Zins, R. Weissberg, M. Wang, & H. Halberg (Eds.), *Building academic success on social and emotional learning: What does the research say?* (pp. 3–19). Teachers College Press.

Elias, M. (2006). The connection between academic and social-emotional learning. In M. Elias & H. Arnold (Eds.), *The Educator's guide to emotional intelligence and academic achievement.* (pp. 4–14). Corwin Press.

Elias, M. J., & Arnold, H. (2006). *The educator's guide to emotional intelligence and academic achievement: Social-emotional learning in the classroom*. Corwin Press.

Elias, M., Zins, J., Graczyk, P., & Weissberg, R. (2003). Implementation, sustainability, and scaling up of social-emotional and academic innovations in public schools. *School Psychology Review*, *32*(3), 303–319.

Elliott, C., & Pumfrey, P. (1972). The effects of non-directive play therapy on some maladjusted boys. *Educational Research*, *14*, 157–163.

Felner, R. D., Farber, S. S., Ginter, M. A., Boike, M. F., & Cowen, E. L. (1980). Family stress and organization following parental divorce or death. *Journal of Divorce*, *4*, 67–76.

Felner, R. D., Ginter, M. A., Boike, M. F., & Cowen, E. L. (1981a). Parental death or divorce and the school adjustment of young children. *American Journal of Community Psychology*, *9*, 181–191.

Felner, R. D., Ginter, M. A., Boike, M. F., & Cowen, E. L. (1981b). Parental death or divorce in childhood: Problems, interventions, and outcomes in school-based project. *Journal of Prevention*, *1*, 240–246.

Felner, R. D., Stolberg, A. L., & Cowen, E. L. (1975). Crisis events and school mental health referral patterns of young children. *Journal of Consulting and Clinical Psychology*, *43*, 305–310.

Field, T. A., Jones, L. K., & Russell-Chapin, L. A. (Eds.). (2017). *Neurocounseling: Brain-based clinical approaches*. American Counseling Association.

Fisher, B. (1953). Group therapy with retarded readers. *Journal of Educational Psychology*, *44*(6), 354–360. https://doi.org/10.1037/h0056303

Frank, R. G., Sandler, I., & McFarlane, W. (2009). *Children's mental health: Prevalence, illness burden, and efforts at prevention and early intervention*. National Health Policy Forum. http://www.nhpf.org/library/details.cfm/2766

Gallagher, R., & Cowen, E. L. (1976). Similarity of referral problems in sibling and nonsibling pairs. *Journal of Consulting and Clinical Psychology*, *44*, 873.

Gallagher, R., & Cowen, E. L. (1977). Birth order and school adjustment problems. *Journal of Individual Differences*, *33*, 70–77.

Gaskill, R. L., & Perry, B. D. (2014). The neurobiological power of play: Using the Neurosequential Model of Therapeutics to guide play in the healing process. In C. A. Malchiodi & D. A. Crenshaw (Eds.), *Creative arts and play therapy for attachment problems* (pp. 178–194). The Guilford Press.

Gesten, E. L. (1976). A health resources inventory: The development of a measure of the personal and social competence of primary grade children. *Journal of Consulting and Clinical Psychology*, *55*, 775–786.

Gesten, E. L., Scher, K., & Cowen, E. L. (1978). Judged school problems and competencies of referred children with varying family background characteristics. *Journal of Abnormal Child Psychology*, *6*, 247–255.

Ginsberg, M. R., Weissberg, R. P., & Cowen, E. L. (1985). The relationship between supervisor's satisfaction with supervision and change in supervisee's clients. *Journal of Community Psychology*, *6*, 247–255.

Goleman, D. (1995). *Emotional intelligence: Why it can matter more than IQ*. Bantam Books.

Greenberg, Mark T., Weissberg, R. P., O'Brien, M. U., Zins, J. E., Fredericks, L., Resnik, H., & Elias, M. J. (2003). Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning. *American Psychologist*, *58*(6–7), 466–474. https://doi.org/10.1037/0003-066X.58.6-7.466

Greenberg, M.T., & Snell, J. (1997). The neurological basis of emotional development. In P. Salovey (Ed.), *Emotional development and emotional literacy* (pp. 92–119). Basic Books.

Hamre, B. K., & Pianta, R. C. (2005). Can instructional and emotional support in the first-grade classroom make a difference for children at risk of school failure? *Child Development, 76*(5), 949–967. https://doi.org/10.1111/j.1467-8624.2005.00889.x

Hightower, A. D., Cowen, E. L., Spinell, A. P., Lotyczewski, B. S., Guare, J. C., Rohrbeck, C. A., & Brown, L. P. (1987). The child rating scale: The development and psychometric refinement of a socioemotional self-rating scale for young school children. *School Psychology Review, 16*, 239–255.

Hightower, A. D., Work, W. C., Cowen, E. L., Lotyczewski, B. S., Spinell, A. P., Guare, J. C., & Rohrbeck, C. A. (1986). The Teacher-Child Rating Scale: A brief objective measure of elementary school children's school problem behaviors and competencies. *School Psychology Review, 15*, 393–409.

Hightower, A., & Perkins, P. E. (2010). *The child rating scale: The development and psychometric refinement of a socioemotional self-rating scale*. Children's Institute.

Holzberg, J. D., Knapp, R. H., & Turner, J. L. (1967). College students as companions to the mentally ill. In E. L. Cowen, E. A. Gardner, & M. Zax (Eds.), *Emergent approaches to mental health problems* (pp. 91–109). Appleton-Century-Crofts.

Hudspeth, E. F., & Matthews, K. (2016). Neuroscience and play therapy: The neurobiologically-informed play therapist. In K. J. O'Conner, C. E. Schaefer, & L. D. Braverman (Eds.), *Handbook of play therapy* (pp. 583–597). John Wiley & Sons, Incorporated.

Jensen, E. (1998). *Teaching with the brain in mind*. Association for Supervision & Curriculum Development.

Kaplewicz, N. L. (1999). *Effects of group play therapy on reading achievement and emotional symptoms among remedial readers* [Psy.D., Alfred University]. https://0-search-proquest-com.library.uark.edu/docview/304494306/abstract/D35902CB5FCE42BBPQ/1

Kazdin, A. E. (2003). Clinical significance: Measuring whether interventions make a difference. In *Methodological issues & strategies in clinical research, 3rd ed* (pp. 691–710). American Psychological Association.

Kestly, T. A. (2014). *The interpersonal neurobiology of play: Brain-building interventions for emotional well-being*. W. W. Norton & Company.

Klein, A. (2015, April 10). No Child Left Behind Overview: Definitions, Requirements, Criticisms, and More - Education Week. *Education Week*. https://www.edweek.org/ew/section/multimedia/no-child-left-behind-overview-definition-summary.html

Kremer, K. P., Flower, A., Huang, J., & Vaughn, M. G. (2016). Behavior problems and children's academic achievement: A test of growth-curve models with gender and racial differences. *Children and Youth Services Review*, *67*, 95–104. https://doi.org/10.1016/j.childyouth.2016.06.003

Kriete, R., & Bechtel, L. (2002). *The morning meeting book*. Northeast Foundation for Children.

Kusche, C. A., & Greenberg, M. T. (1998). Integrating emotions and thinking in the classroom. *THINK*, *9*, 32–34.

Kusche, C., & Greenberg, T. (2006). Brain development and social-emotional learning: An introduction for educators. In M. J. Elias & H. Arnold (Eds.), *The educator's guide to emotional intelligence and academic achievement: Social-emotional learning in the classroom* (pp. 35–42). Corwin Press.

Landreth, G. (1991). *Play therapy: The art of the relationship*. Accelerated Development Press.

Landreth, G. (1993). Child-centered play therapy. *Elementary School Guidance and Counseling*, *28*(1), 17–29.

Landreth, G. L. (2002). *Play Therapy: The Art of the Relationship* (2nd ed.). Psychology Press.

Landreth, G. L. (2012). *Play Therapy: The Art of the Relationship* (3rd ed.). Routledge.

Landreth, G. L., Ray, D. C., & Bratton, S. C. (2009). Play therapy in elementary schools. *Psychology in the Schools*, *46*(3), 281–289. https://doi.org/10.1002/pits.20374

LeBlanc, M., & Ritchie, M. (2001). A meta-analysis of play therapy outcomes. *Counselling Psychology Quarterly*, *14*(2), 149-163 15p.

Leland, H., Walker, J., & Taboada, A. (1959). Group play therapy with a group of post-nursery male retardates. *American Journal of Mental Deficiency*, *63*, 848–851.

Lewis, C. C., Schaps, E., & Watson, M. S. (1996). The caring classroom's academic edge. *Educational Leadership*, *54*, 16–21.

Lin, Y.-W., & Bratton, S. C. (2015). A meta-analytic review of child-centered play therapy approaches. *Journal of Counseling & Development*, *93*(1), 45–58. https://doi.org/10.1002/j.1556-6676.2015.00180.x

Lopez, H. T. (2000). *The effects of a therapeutic play intervention on Hispanic students' reading achievement, self -concept, and behavior* [Ed.D., University of North Texas]. https://0-search-proquest-com.library.uark.edu/docview/304629425/abstract/D3D1FE9F885F4627PQ/1

Lorion, R. P., Caldwell, R. A., & Cowen, E. L. (1976). Effects of a school mental health project: A one-year follow-up. *Journal of School Psychology*, *14*, 56–63.

Lorion, R. P., Cowen, E. L., & Caldwell, R. A. (1975). Normative and parametric analysis of school maladjustment. *American Journal of Community Psychology*, *3*, 291–301.

Lorion, R. P., Cowen, E. L., Kraus, R., & Milling, L. S. (1977). Family background characteristics and school adjustment problems. *Journal of Community Psychology*, *5*, 142–148.

Lotyczewski, B. S., Cowen, E. L., & Weissberg, R. P. (1986). Adjustment correlates of physical and health problems in young children. *Journal of Special Education*, *20*, 241–250.

MacLean, P. D. (1990). *The triune brain in evolution*. Plenum Press.

Marks-Tarlow, T. (2012). The play of psychotherapy. *American Journal of Play; Rochester*, *4*(3), 352-377,390-391.

Martini, F., & Sénéchal, M. (2012). Learning literacy skills at home: Parent teaching, expectations, and child interest. *Canadian Journal of Behavioural Science*, *44*(3), 210–221. https://doi.org/10.1037/a0026758

McWilliams, S. A. (1972). A process analysis of nonprofessional intervention with children. *Journal of School Psychology*, *10*, 367–377.

Mellin, E. A. (2009). Responding to the Crisis in Children's Mental Health: Potential Roles for the Counseling Profession. *Journal of Counseling and Development*, *87*(4), 501–506. http://0-dx.doi.org.library.uark.edu/10.1002/j.1556-6678.2009.tb00136.x

Moulin, E. (1970). The effects of client-centered group counseling using play media on the intelligence, achievement, and psycholinguistic abilities of underachieving primary school children. *Elementary School Guidance and Counseling*, *5*, 85–98.

Moustakas, C. (1953). *Children in play therapy*. Ballantine Books.

Moustakas, C. E. (1959). *Psychotherapy with Children: The Living Relationship*. Harper.

Mundy, L. (1957). Therapy with physically and mentally handicapped children in a mental deficiency hospital. *Journal of Clinical Psychology*, *13*, 3–9.

Nafpaktitis, M., & Perlmutter, B. (1998). School-based early mental health intervention with at-risk students. *School Psychology Review*, *27*(3), 420–432.

National Center for Education Statistics. (2016). *U.S. Department of Education, and U.S. Census Bureau and the Arkansas Department of Education*. https://adesrc.arkansas.gov/ReportCare/View?lea=7207064&schoolYear=2017

National Center for Education Statistics. (2018). *Common Core of Data.*
http://nces.ed.gov/ccd/schoolsearch/school_detail.asp?search=1&InstName=Turnbo&Cit
y=Springdale&State=05&SchoolType=1&SchoolType=3&SchoolType=4&SpecificType
s=all&IncGrade=-1&LoGrade=-1&HiGrade=-1&ID=051266001161

New Freedom Commission on Mental Health. (2003). *Achieving the promise: Transforming
mental health care in America* (Final Report. DHHS Pb. No. SMA-03-3832).

Newcomer, B., & Morrison, T. (1974). Play therapy with institutionalized mentally retarded
children. *American Journal of Mental Deficiency*, *78*, 727–733.

NWEA. (2011a). *2011 measures of academic progress comparative data to inform instructional
decision* (p. 2) [NWEA Research Report]. Northwest Evaluation Association.
https://www.nwea.org/content/uploads/2011/07/NWEA-Measures-of-Academic-
Progress-Comparative-Data-One-Sheet-APR15.pdf

NWEA. (2011b). *2011 normative data* (p. 2) [NWEA Research Report]. Northwest Evaluation
Association. https://www.nwea.org/content/uploads/2014/07/MAP-Normative-Data-One-
Sheet-Dec11.pdf

O'Neil, J. (1997). Building schools as communities: A conversation with James Comer.
*Educational Leadership*, *54*, 6–10.

Osterman, T., K. F. (2000). Students' need for belonging in the school community. *Review of
Educational Research*, *70*, 323–367.

Panjwani, N. (2011). Saving our Future: James Comer and the School Development Program.
*The Yale Journal of Biology and Medicine*, *84*(2), 139–143.

Panksepp, J. (1992). A critical role for "affective neuroscience" in resolving what is basic about
basic emotions. *Psychological Review*, *99*(3), 554–560.

Panksepp, J. (2004). *Affective neuroscience: The foundations of human and animal emotions* (1
edition). Oxford University Press, USA.

Peabody, M. A., Perryman, K. L., Hannah, M., Smith, L., & Sanyshyn, S. (2018). Primary
project: Past, present, and future. *Journal of School-Based Counseling Policy and
Evaluation*, *1*(1), 40–50.

Perryman, K., Blisard, P., & Moss, R. (2019). Using creative arts in trauma therapy: The
neuroscience of healing. *Journal of Mental Health Counseling*, *41*(1), 80–94.
https://doi.org/10.17744/mehc.41.1.07

Perryman, K.L. (2016). Play therapy in schools. In K. J. O'Conner, C. E. Shaefer, & L. D.
Braverman (Eds.), *Handbook of play therapy* (2nd ed., pp. 485–504). John Wiley & Sons.

Perryman, K.L, Robinson, S., Bowers, L., & Massengale, B. (2020). Child centered play therapy and academic achievement: A prevention based model. *International Journal of Play Therapy*, *29*(2), 104–117.

Perryman, K. L., & Bowers, L. (2018). Turning the focus to behavioral, emotional, and social well-being: The impact of child-centered play therapy. *International Journal of Play Therapy*, *27*(4), 227–241. https://doi.org/10.1037/pla0000078

Porges, S. W. (2011). *The Polyvagal Theory: Neurophysiological foundations of emotions, attachment, communication, and self-regulation*. W. W. Norton & Company.

Primary Project. (2017). *Best practices in implementing evidence-based programs in school: A qualitative study of the Primary Project social and emotional learning program*. Children's Institute. https://www.childrensinstitute.net/sites/default/files/primary-project_qualitative-study_working-paper.pdf

Pryor-Brown, L., & Cowen, E. L. (1989). Stressful life events, support, and children's school adjustment. *Journal of Clinical Child Psychology*, *18*(3), 214–220.

Quayle, R. L. (1991). *The Primary Mental Health Project as a school-based approach for prevention of adjustment problems: An evaluation* [Ph.D., The Pennsylvania State University]. https://0-search-proquest-com.library.uark.edu/docview/303956914/abstract/2CB68CD92AF4F96PQ/1

Ray, D. C. (2007). Two counseling interventions to reduce teacher-child relationship stress. *Professional School Counseling*, *10*(4), 428–440.

Ray, D. C. (2011). *Advanced play therapy: Essential conditions, knowledge, and skills for child practice*. Routledge.

Ray, D. C. (Ed.). (2015). *A therapist's guide to child development: The extraordinarily normal years*. Routledge.

Ray, D. C., Armstrong, S. A., Balkin, R. S., & Jayne, K. M. (2015). Child-centered play therapy in the schools: Review and meta-analysis. *Psychology in the Schools*, *52*(2), 107–123. https://doi.org/10.1002/pits.21798

Ray, D. C., Stulmaker, H. L., Lee, K. R., & Silverman, W. K. (2013). Child-centered play therapy and impairment: Exploring relationships and constructs. *International Journal of Play Therapy*, *22*(1), 13–27. https://doi.org/10.1037/a0030403

Reid, R., Gonzalez, J. E., Nordness, P. D., Trout, A., & Epstein, M. H. (2004). A Meta-Analysis of the Academic Status of Students with Emotional/Behavioral Disturbance. *Journal of Special Education*, *38*(3), 130–143.

Roach, R. (2013). Staying the Course. *Diverse: Issues in Higher Education*, *30*(15), 16–17.

Rogers, C. (1995). *A way of being* (1st Ed.). Mariner Books.

Rogers, C., & Kramer, P. D. (1995). *On becoming a person: A therapist's view of psychotherapy* (2nd ed.). Mariner Books.

Rogers, C. R. (1942). *Counseling and psychotherapy*. Houghton Mifflin Company.

Rogers, C. R. (1957). The necessary and sufficient conditions of therapeutic personality change. *Journal of Consulting Psychology*, *21*(2), 95–103. https://doi.org/10.1037/h0045357

Roich, M. J. (1967). Pilot projects in training mental health counselors. In E. L. Cowen, E. A. Gardner, & M. Zax (Eds.), *Emergent approaches to mental health problems* (pp. 110–127). Appleton-Century-Crofts.

Romasz, T. E., Kantor, J. H., & Elias, M. J. (2004). Implementation and evaluation of urban school-wide social-emotional learning programs. *Evaluation and Program Planning*, *27*, 89–103.

Sandler, I. N. (1972). Characteristics of women working as child-aides in a school based preventive mental health program. *Journal of Consulting and Clinical Psychology*, *39*, 56–61.

Sandler, I. N., Duricko, A., & Grande, L. (1975). Effectiveness of an early secondary prevention program in an inner city elementary school. *American Journal of Community Psychology*, *3*, 23–32.

Schaps, E, Lewis, C., & Watson, M. (1993). The Child Development Project. *Educational Leadership*, *51*(3), 46.

Schaps, Eric, Battistich, V., & Solomon, D. (2003). Community in school as key to student growth: Findings from the Child Development Project. In J. Zins, R. Weissberg, M. Wang, & H. Walberg (Eds.), *Building academic success on social and emotional learning: What does the research say?* (pp. 189–205). Teachers College Press.

Schore, A. (2019a). *Right brain psychotherapy* (1st ed). W. W. Norton & Company.

Schore, A. (2019b). *The development of the unconscious mind* (1st ed). W. W. Norton & Company.

Schumann, B. R. (2005). *Effects of child-centered play therapy and curriculum-based small-group guidance on the behavior of children referred for aggression in an elementary school setting* [Dissertation]. University of North Texas.

Searcy-Miller, M. L., Cowen, E. L., & Terrell, D. L. (1977). School adjustment problems of children from small vs. Large families. *Journal of Community Psychology*, *5*, 319–324.

Seeman, J., & Edwards, B. (1954). A therapeutic approach to reading difficulties. *Journal of Consulting Psychology*, *18*, 451–453.

Seymour, J. W. (2016). An introduction to the field of play therapy. In K. J. O'Conner, C. E. Schaefer, & L. D. Braverman (Eds.), *Handbook of play therapy* (pp. 3–16). John Wiley & Sons, Incorporated.

Shechtman, Z., Gilat, I., Fos, L., & Flasher, A. (1996). Brief group therapy with low-achieving elementary school children. *Journal of Counseling Psychology*, *43*(4), 376–382. https://doi.org/10.1037/0022-0167.43.4.376

Shumaker, D., & Naveh, I. (1985). Structured vs. Unstructured play training with economically disadvantaged preschoolers. *Imagination, Cognition, and Personality*, *4*(3), 293–304.

Siegel, C. (1970). The effectiveness of play therapy with other modalities in the treatment of children with learning disabilities. *Dissertation Abstracts International*, *48*, 2112.

Siegel, D. J. (2010). *Mindsight: The new science of personal transformation* (Reprint edition). Bantam.

Siegel, D. J. (2015). *The developing mind: How relationships and the brain interact to shape who we are* (2nd Ed.). The Guilford Press.

Smith, L., & Lotyczewski, S. (2018). *2017-2018 Rochester City school district (RCDS) program outcome summary*. Children's Institute. https://www.childrensinstitute.net/sites/default/files/documents/2017-18_RCSD-program-outcome-report.pdf

Sterling, S., Cowen, E. L., Weissberg, R. P., Lotyczewski, B. S., & Boike, M. F. (1985). Recent stressful life events and young children's school adjustment. *American Journal of Community Psychology*, *13*, 31–48.

Substance Abuse and Mental Health Services Administration, S. (2017). *National registry of evidence-based programs and practices*. www.samhsa.gov

Sylwester, R. (1995). *A celebration of neurons: An educator's guide to the human brain*. Association for Supervision & Curriculum Development.

Tabachnick, B., & Fidell, L. (2007). *Experimental design using ANOVA*. Duxbury, Thomson Brooks/Cole.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using Multivariate Statistics* (4th ed.). Allyn & Bacon, Pearson Education Company.

Thiese, M. S., Ronna, B., & Ott, U. (2016). P value interpretations and considerations. *Journal of Thoracic Disease*, *8*(9), E928–E931. https://doi.org/10.21037/jtd.2016.08.16

Thum, Y. M., & Hauser, C. H. (2015). *NWEA 2015 MAP norms for student and school achievement status and growth* (p. 431) [NWEA Research Report]. Northwest Evaluation Association. http://www.sowashco.org/files/department/rea/2015NormsReport_Reading.pdf

US Department of Education. (2019). *National Center for Education Statistics*. https://nces.ed.gov/fastfacts/display.asp?id=158

U.S. Public Health Service. (2000). *Report of the Surgeon General's conference on children's mental health: A national action agenda.* U.S. Public Health Service.

Virinkoski, R., Lerkkanen, M.-K., Holopainen, L., Eklund, K., & Aro, M. (2018). Teachers' Ability to Identify Children at Early Risk for Reading Difficulties in Grade 1. *Early Childhood Education Journal*, *46*(5), 497–509. https://doi.org/10.1007/s10643-017-0883-5

Weissberg, R. P., Cowen, E. L., Lotyczewski, B. S., & Gesten, E. L. (1983). The Primary Mental Health Project: Seven consecutive years of program outcome research. *Journal of Consulting and Clinical Psychology*, *51*(1), 100–107. https://doi.org/10.1037/0022-006X.51.1.100

Wheeler, N., & Dillman Taylor, D. (2016). Integrating interpersonal neurobiology with play therapy. *International Journal of Play Therapy*, *25*(1), 24–34. https://doi.org/10.1037/pla0000018

Wilson, D. B., Gottfredson, D. C., & Najaka, S. S. (2001). School-Based Prevention of Problem Behaviors: A Meta-Analysis: [1]. *Journal of Quantitative Criminology; New York*, *17*(3), 247–272. http://0-dx.doi.org.library.uark.edu/10.1023/A:1011050217296

Winn, E. (1959). *The influence of play therapy on personality change and the consequent effect on reading performance* [Dissertation]. Michigan State University.

Wishon, P. (1975). *The impact of play intervention on word recognition skill on aspects of personal-social development of first grade children* [Dissertation]. Ohio State University.

Zax, M., & Cowen, E. L. (1967). Early identification and prevention of emotional disturbance in a public school. In E. L. Cowen, E. A. Gardner, & M. Zax (Eds.), *Emergent approaches to mental health problems* (pp. 331–351). Appleton-Century-Crofts.

Zins, J., & Elias, M. (2006). Social and emotional learning: Promoting the development of all students. *Journal of Educational and Psychological Consultation*, *17*(2 & 3), 233–255.

Zins, J., Weissberg, R. P., Walberg, H. J., & Wang, M. C. (Eds.). (2004). *Building academic success on social and emotional learning*. Teachers College Press.

Zins, J., Weissberg, R., Wang, M., & Walberg, H. (Eds.). (2004). *Building academic success and emotional learning: What does the research say?* Teachers College Press.

# APPENDICES

**UNIVERSITY OF ARKANSAS.**

| | |
|---|---|
| **To:** | Kristi Leann Perryman<br>GRAD 140 |
| **From:** | Douglas James Adams, Chair<br>IRB Committee |
| **Date:** | 09/11/2019 |
| **Action:** | **Expedited Approval** |
| **Action Date:** | 09/11/2019 |
| **Protocol #:** | 1808140405 |
| **Study Title:** | Primary Project of Northwest Arkansas: The Relationship between Knowledge and Attitudes in Play Therapy and Experience of a Play Therapist's Attitudinal Conditions toward a Client |
| **Expiration Date:** | 09/10/2020 |
| **Last Approval Date:** | |

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

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

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

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

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

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

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

cc:   Lisa Bowers, Investigator
      Brittany D Massengale, Key Personnel