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The Impact of a Social Emotional Learning Curriculum on the Social-Emotional Competence of Elementary-Age Students

Michelle Dunn
Clemson University, michelledunn23@yahoo.com

THE IMPACT OF A SOCIAL EMOTIONAL LEARNING CURRICULUM ON THE SOCIAL-EMOTIONAL COMPETENCE OF ELEMENTARY-AGE STUDENTS

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Michelle Elizabeth Dunn
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Dr. Joe Ryan, Committee Chair
Dr. Shanna Hirsch
Dr. Antonis Katsiyannis
Dr. William Bridges

ABSTRACT

This study investigated the impact of a social-emotional learning (SEL) curriculum on the social-emotional competence skills of second grade students in the general education classroom. Twelve classrooms across three schools in a school district in the Southeastern United States participated; one school was considered low poverty and two schools were considered high poverty. Results indicated medium to large effect sizes in all dependent measures in the low poverty treatment condition (.83 to 10.69). All but one teacher rating were also medium to large (.53 to 1.49). The student ratings were inconsistent across conditions, with medium and large positive and negative effects in both treatment and control conditions. Results revealed greater gains in the intervention classrooms for both teacher and self-rated social-emotional competence when compared with the scores from the control classrooms. ANOVA results did not reveal any significant interactions, indicating the impact of the SEL lessons was inconsistent across conditions, poverty status, and individual teachers within groups. Fidelity of implementation was high, and results of the social validity surveys found that both teachers and students rated the lessons favorably.

DEDICATION

My name may be on the title page of his document, but there are a host of others that without their contributions this research study would not have been possible. First, I would like to extend my sincere thanks to my committee members. You have each provided me with the expertise and guidance required to accomplish this project. Thank you for the time you have generously given to me, and for having the confidence in my abilities throughout every stage of the process.

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in making this dream happen. Thank you to my four children who have been cheering me

on since the beginning. I hope I have made you proud.

TABLE OF CONTENTS

Table of Contents (Continued)

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

The purpose of this chapter is to provide an overview of social emotional learning (SEL), the impact SEL has on student outcomes, and the importance of implementing evidence-based SEL programs in the educational setting. The rationale for the current study is described and the research questions are presented.

Overview of Social Emotional Learning

The Collaborative for Academic, Social, and Emotional Learning (CASEL) is a consortium of educators, researchers, and policy makers whose mission is to help make SEL an integral part of education from preschool through high school. According to CASEL (2013), SEL is the process through which children acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions. Each of these skills is considered a critical competency of SEL, without which students are less likely to find success in school and beyond. These five competencies are believed to be the building blocks to healthy development, and there is a growing body of research indicating that when students have adequately developed SEL skills, the foundation is set for positive personal, economic, and social well-being.

The evidence-base of student SEL comes from numerous disciplines (e.g., teacher education, classroom management, academic achievement). Students who are exposed to SEL programming experience a host of positive outcomes, including, as would be expected, strong social and emotional competence (Durlak, Weissberg, Dymnicki,

Taylor, & Schellinger, 2011; Jones, Greenberg, & Crowley, 2015). Research suggests

that the improvement in SEL skills also leads to an improved attitude toward self and

others, more pro-social behaviors, and better academic performance when compared with

students who are not exposed to SEL programming. They are also more likely to graduate

from high school, earn a college degree, and obtain stable employment in adulthood

(Jones et al., 2015). Students who demonstrate deficits in their SEL skills, however, do

not fare well. These students are more likely to experience conduct problems and

emotional distress, and in adulthood are more likely to live in public housing, be involved

with law enforcement, and experience co-morbid diagnoses of substance abuse and

mental disorders (Durlak et al., 2011; Payton et al., 2008). Other research examined the

financial return of six evidence-based SEL programs (4Rs, Positive Action, Life Skills

Training, Second Step, Responsive Classroom, and Social and Emotional Training) by

comparing the costs of implementing the programs with the value of their outcomes (e.g.,

by reducing high school dropout rates, thereby increasing income and health and

reducing involvement in the criminal justice system (Belfield et al., 2015). The overall

analyses indicated that the six SEL interventions showed measurable benefits that

outweighed the costs of implementation, with an average benefit-cost ratio of

approximately 11 to 1. This suggests a positive return on investment, and that for every

dollar spent to implement the SEL program, there is an economic return of $11.

Researchers have examined common factors that effective SEL programs share.

They have found that programming that is implemented across multiple years from

preschool through high school is the most effective (Greenberg et al., 2003). In addition,

researchers found that when teachers received training prior to implementing an SEL program, that fidelity of implementation is improved (Greenberg, Domitrovich, Graczyk, & Zins, 2005). Also, programs that target all five SEL competencies are more effective than those that target only one or two (Elias, 2006).

Statement of the Problem

There is a solid research base supporting the importance of social-emotional competence skills and their impact on student outcomes in school, work, and life (Durlak et al., 2011; Taylor, Oberle, Durlak, & Weissberg, 2017). One method to promote student SEL is programs and curricula created to teach specific SEL skills. Numerous SEL programs, that explicitly teach SEL skills, have been empirically studied, with results indicating they can be effective in improving social, emotional, behavioral, and academic student functioning.

Some of these programs are costly, many require many hours of training, and many involve dozens of lessons. The *Zones of Regulation* is an increasingly popular SEL program that is inexpensive, requires little training, and addresses the five SEL competencies through 18 teacher-delivered lessons. According to the publisher, this SEL curriculum is currently implemented in 39 states and nine countries, including Canada, U.K., Australia, New Zealand, Hong Kong, Bermuda, Ireland, Morocco, and South Africa. It is being implemented in general education classrooms, special education classrooms, and mental health settings. Many districts have begun using this particular curriculum across multiple school sites. Despite the research highlighting the importance of social emotional skills, and the research providing evidence of the effectiveness of

11

many SEL programs, there are currently no studies evaluating the effectiveness of the this curriculum.

Significance of the Study

Teachers are under immense pressures to prepare their students to meet high academic standards and ensure they are ready for college and career. This means not only equipping students with the academic skills they need, but the social emotional skills as well. When the Every Child Succeeds Act (ESSA) was signed into law in 2015, it mandated that states adopt challenging academic content and achievement standards in mathematics, language arts, and science (Every Student Succeeds Act, 2015) and that each state address *student success* by establishing goals to increase graduation rates and state assessment scores. For the first time, through ESSA, states are required to include at least one "nonacademic" indicator of student success, and SEL can be one such indicator. In fact, ESSA has authorized funding that can support programs whose goals are to improve educational outcomes for students, including SEL programs.

Another reason for SEL programming is the Multi-tiered Systems of Supports framework. MTSS relies on universal supports provided to all students in order to prevent social, emotional, behavioral, or academic problems from developing or escalating (Cook, Burns, Browning-Wright, & Gresham, 2010). Universal supports include the delivery of evidence-based practices and programs, or those that have been proven to work through experimental studies and large-scale research (The Iris Center, 2014). When supports that are evidence-based are implemented with fidelity, educators are able to prevent, reverse, and minimize student concerns, while at the same time promoting

strong social-emotional development. As a result, the likelihood of academic and overall success for students is increased. *Zones of Regulation* is an SEL program that is increasingly popular and being implemented across school districts, yet is lacking the empirical support needed for it to be considered evidence-based.

The goal of this study was to examine the effectiveness of this SEL curriculum on the social emotional skills of elementary-aged students in a general education classroom. Evaluating the effectiveness of this program is important for two reasons. First, in order to effectively prevent social, emotional, and behavioral problems from occurring, teachers need to be implementing practices and SEL programs that have research supporting their use. Secondly, this SEL program has yet to be studied, however it is becoming widely implemented in schools across the United States and overseas.

Purpose of the Study

The purpose of the current study was to investigate the effectiveness of *Zones of Regulation*, a classroom-based SEL curriculum, on the social-emotional competence skills of elementary-aged students. Specifically, this study attempted to answer the following research questions:

1) What is the impact of this SEL curriculum on the knowledge and application of social-emotional competence skills in elementary-aged students, as measured by teacher ratings?

 2) What is the impact of this SEL curriculum on the knowledge and application of social-emotional competence skills in elementary-aged students, as measured student self-ratings?

3) What is the impact of this SEL curriculum on the knowledge and application of social-emotional competence skills in elementary-aged students in high poverty compared to low poverty schools, as measured by teacher ratings and student self-ratings?

CHAPTER TWO

LITERATURE REVIEW

The purpose of this literature review is to establish the importance of promoting social and emotional learning (SEL) in the school setting, which will be accomplished by first defining SEL and examining the core competencies that it encompasses, and then discussing the legislative rationale for incorporating SEL into school programs and curricula. The next section will explore the evidence base of SEL programs and their correlation with student outcomes. The chapter will then conclude with a discussion of the core components of evidence-based SEL programs and practices and the results of a systematic review of research that has investigated the effectiveness of class-wide SEL programs implemented in elementary classrooms and their impact on student social-emotional competence.

Defining Social Emotional Learning (SEL)

The term social and emotional learning first appeared in the literature in 1994 following a meeting hosted by the Fetzer group, in which school-based prevention researchers, educators, and child advocates came together to discuss concern over the ineffective nature of many prevention and healthy development promotion efforts (Greenberg et al., 2003). Attendees were involved with a variety of educational efforts to promote healthy development for children, including emotional intelligence, violence prevention, character education, and social competence promotion. As a result of the meeting, the Fetzer group introduced the term social and emotional learning as a conceptual framework to address the needs of children and the fragmented means that characterized the schools' response in attempting to meet those needs The SEL

framework included work aimed to prevent violence and drug use and abuse in school, and work that promoted healthy decision-making, school-community connections, and responsible behavior (Elias et al., 1997).

Emerging from that meeting was a new organization, the Collaborative for Academic, Social, and Emotional Learning (CASEL), whose mission was to establish high-quality, evidence-based SEL as an essential part of educational programming for all preschool `through high school students. CASEL, whose members include policymakers, educators, scholars and researchers in the field of education, provided a comprehensive definition of SEL that is now widely accepted throughout the research literature. CASEL defines SEL as the process through which children acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions (CASEL, 2017). According to CASEL (2013), the goal of SEL programs and practices is to foster the development of five interrelated competencies (see Figure 1), which are self-awareness (the ability to identify and recognize one's emotions, strengths, areas of growth, and a general sense of confidence and efficacy), self-management (the ability to control one's impulses, manage stress, set goals, persevere, and maintain motivation), social awareness (an awareness of one's self in relation to another, the ability to feel empathy and respect for others, and the ability to take another's perspective), relationship skills (the ability to cooperate, seek and provide help, and communicate effectively), and responsible decision making (the ability to evaluate and reflect on decisions to be made, and to be aware of one's personal and

ethical responsibilities). These five competencies are said to form the building blocks of healthy development. When students develop these competencies, CASEL suggests, a foundation is provided for personal, economic, and social well-being in youth and through adulthood. The conceptual SEL framework established by CASEL is grounded in prevention science and developmental research, and relies heavily on the work of Zins, Bloodworth, Weissberg, and Walberg (2004) and Rimm-Kaufman and Hulleman (2015). The purpose of SEL school-based programming, then, is to promote the development of the competencies across contexts in order to facilitate positive relationships, academic success, and prosocial behavior (Elias, 2006).

Figure 1. Social Emotional Competencies

Social & Emotional Learning Core Competencies

(Casel, 2013)

Legislation and the Rationale for SEL Programming

Every Student Succeeds Act

When the Every Child Succeeds Act (ESSA) was signed into law in December, 2015, it mandated that states adopt challenging academic content and achievement standards in mathematics, language arts, and science (Every Student Succeeds Act, 2015). ESSA also mandates that states address *student success* by establishing ambitious goals to improve academic achievement on state assessments and graduation rates. This

federal legislation, however, includes a broader definition of *student success*, and the

ESSA accountability system requires states include at least one "nonacademic" indicator

of student/school success (Aspen Education & Society Program, 2016). Specific

recommendations are made for activities that support safe and healthy students, which

includes fostering, "safe, healthy, supportive, and drug free environments that support

student academic achievement, improving instructional practices for developing

relationship-building skills such as effective communication," providing, "mentoring and

school counseling to all students," and, "implementation of school-wide positive

behavioral interventions and supports." (Every Student Succeeds Act, 2015). SEL

strategies fit within this realm, and in conjunction with academic instruction, can equip

students to meet rigorous academic goals and succeed in all aspects of life.

 While ESSA policy does not explicitly reference SEL, it does provide direct and

indirect opportunities for schools and districts to incorporate SEL through calls for

improving school conditions that are conducive to learning, enhance peer interactions,

provide a well-rounded education, and incorporate activities that promote instructional

practices for developing relationship-building skills (Grant et al., 2017). Additionally,

each State Education Agency (SEA) must submit information to the Office of Civil

Rights on measures of school quality, climate, and safety, which all relate directly or

indirectly to SEL. For example, schools that

Schools have opportunities to provide SEL interventions through the use of federal funds

authorized by ESSA. The most directly relevant federal funds are those provided in Title

IV (21st Century Schools), which authorizes funds to support programs whose goals are

to improve educational opportunities for students. These Student Enrichment and Academic Support Grants require schools and districts to allocate a minimum of 20% of the funding to programs and initiatives that support the provision of a well-rounded education, and at least 20% to support the initiatives that promote safe and healthy students, both of which are related to social emotional skills and competencies. Title I, which addresses improving the academic achievement of students from disadvantaged backgrounds, also provides opportunities for the provision of SEL interventions into school-wide programs and targeted interventions. SEL interventions that support the progress of students from low-income families toward meeting grade level academic standards fall under Title I, and interventions can address both academic and non-academic subjects. In addition, under Title I schools must allocate 7% of their Title I funding to their lowest performing schools and the funding must be used to support the improvement of student outcomes, which may include social emotional outcomes. Finally, Title II funds, for the preparing, training, and recruiting of high-quality teachers, principals, or school leaders, can be used to support the training of educators to increase their capacity to provide quality instruction that is effective in improving student social-emotional competence, as well as helping to develop school leaders that are competent in implementing SEL interventions and assessing student SEL competencies.

Individuals with Disabilities Education Act

Although diagnostic criteria differ across the different disability areas included in the Individuals with Disabilities Education Act (IDEA; U.S. Department of Education, 2004), the challenges students face, regardless of disability, are often similar. Students

receiving special education services, whether identified with learning disabilities, cognitive disabilities, autism spectrum disorder, or emotional disturbance (ED), often exhibit deficits in both academic and social emotional functioning in the school setting (Rose, Monda-Amaya, & Espelage, 2011). Rose et al. (2011) also found that students with disabilities are also more likely to be the victims of bullying behavior than students without disabilities, which is often associated with deficits in social competence skills and rejection by peers. Additionally, the researchers identified social emotional skill deficits associated with specific disabilities.

Students with learning disabilities often have difficulties with social relationships, tend not to be as accepted by peers, and struggle to read nonverbal social cues in peers and adults (Elias, 2004). They also may lack the ability to assess and interpret social situations, and they may demonstrate impairments in language that make it difficult for them to communicate with others. One of the SEL competencies identified by CASEL is social awareness, or the ability to see things from another's perspective. Students with autism spectrum disorder (ASD) often have social and communication deficits that manifest as a lack of empathy or caring for others (Bons et al., 2013). Another important social emotional competency is relationship skills, and students with emotional disturbance engage in behaviors that make it difficult for them to establish and maintain positive peer relationships, as it is part of the eligibility criteria under IDEA. Students with or at risk for ED also tend to struggle to self-regulate their emotional and behavioral responses (Blair & Diamond, 2008), which is a critical skills in the self-management SEL competency. They are more likely than students without disabilities to inaccurately read

and respond to social situations (Bodine & Crawford, 1999), both of which are critical skills in developing strong social-emotional competence. Finally, as a result of IDEA all students are entitled to a free and appropriate public education (FAPE), and when students with disabilities have social and emotional skill deficits that adversely impact their ability to access the general curriculum and interact with their peers, they are in fact being denied FAPE.

Due to the social emotional challenges that face students with disabilities, it is critical that educators address these challenges. IDEA requires that schools use programs, curricula, and practices based on scientifically-based research, and this requirement applies not only to academic interventions but SEL interventions as well.

Multi-tiered Systems of Support (MTSS)

MTSS provides a framework for schools to effectively and efficiently organize and provide a continuum of evidence-based services and make data-driven decisions in order to meet student needs (Cook et al., 2010). Evidence-based practices refer to techniques, skills, and strategies that through experimental research and large-scale studies have been proven to work, while evidence-based programs are collections of practices that have been proven to work through experimental studies and large-scale research (The Iris Center, 2014). Evidence-based programs are collections of practices that when used in conjunction with one another have been proven to work One of the primary goals of MTSS is to provide a universal level of support to all students in order to prevent or minimize significant problems later. This universal support involves the delivery of evidence-based programs and practices to all students, and not only includes

academic support, but social, emotional, and behavioral support as well. When supports

that are evidence-based are implemented with fidelity, educators are able to prevent,

reverse, and minimize student concerns while at the same time promoting strong social

emotional development, thereby increasing the likelihood of academic and overall

success for students. Schools cannot identify students in need of more intensive, targeted

social emotional interventions when they do not have evidence-based instruction

occurring with fidelity and occurring at the universal level in the general education

setting. Thus, the importance of providing SEL instruction to all students cannot be

minimized if schools are to be equipped to meet the needs of all of their students.

Positive Behavioral Interventions and Supports (PBIS)

One tiered model for preventing behavioral problems is PBIS, which is a

framework for creating safe and positive learning environments (Horner & Sugai, 2015).

In PBIS explicit instruction of positively-stated behavioral expectations across school

settings is delivered to students. More recently, PBIS instruction has expanded to include

more desired student behaviors, which includes social skills, emotional regulation,

problem solving, and coping strategies (Barrett, Eber, & Weist, 2013). In addition, PBIS

has been implemented in an attempt to prevent mental health concerns such as depression

and anxiety (McIntosh, Ty, & Miller, 2014). Schools implementing PBIS often do not

teach SEL, or they view it as a separate domain from their PBIS framework, in that they

implement a separate SEL program that is disconnected from PBIS. There is a current

call for an integrated approach to prevention in which efforts to promote positive

behavior and SEL are delivered together (Barrett, Eber, McIntosh, Perales, & Romer, 2018).

Barrett et al. (2018) have developed a set of recommendations that schools can follow to teach SEL competencies within the PBIS framework. First, they suggest implementing SEL and behavior supports through one team, rather than separate teams. When doing so it is critical that school administration provide the time and resources to implement this integrated approach, and that training is provided to all staff to teach, model, and reinforce SEL competencies. Second, teams need to use broader sources of data in order to identify which SEL skills need to be prioritized for instruction. Data might include attendance records, visits to school support personnel such as counselors and social workers, and data from school climate surveys. Third, SEL competencies should be taught within the PBIS instructional system. In PBIS behavioral expectations are developed and explicitly taught school-wide, and through an integration of PBIS and SEL competencies can be embedded into these behavioral expectations. Students need to have opportunities to practice the competencies across environments. Teachers need to be using a common language surrounding SEL and regularly model, teach, re-teach, prompt, and acknowledge across educational settings. Finally, in order to effectively merge PBIS and SEL efforts, schools need to not only promote SEL in their students, but also need to promote adult wellness through by creating a staff environment that is nurturing and supportive. When personnel are provided the support needed to effectively implement SEL and PBIS within a single framework, including professional development, wellness

programs, and coaching, they are better equipped to address the complex needs of students across both behavioral and social emotional domains.

SEL and the Research Base

There are numerous studies investigating SEL and the relationship with positive outcomes for students. Evidence comes from research studies in a variety of disciplines, including neuroscience, teacher education, academic achievement, primary prevention, classroom management, and cognitive behavioral research. A landmark, large scale meta-analysis investigating the effects of 213 school-based universal SEL programs implemented with kindergarten through high school students, and the impact of these programs on student outcomes (n = 270,034) was conducted by Durlak et al. (2011). Durlak et al. (2011) examined published studies of programs implemented with students without disabilities, studies that included a control group, and only studies with calculated effect sizes. All studies measured at least one of the following dependent variables: (a) social and emotional skills, (b) attitude toward self and others, (c) positive social behaviors, (d) conduct problems, (e) emotional distress, and (f) academic performance. The results of the meta-analysis indicated that students receiving SEL intervention, when compared to students in the control groups, demonstrated significant improvements across all dependent variables measured, with mean effect sizes ranging from .22 to .57. The strongest effect size was found in social emotional skills (g = .57), with the remaining five dependent variables ranging from .22 to .27. It was noteworthy that academic performance was also significantly improved (g = .27). Durlak et al. also investigated the effect size of those studies that collected follow-up data at least six

months after the intervention ended (average follow-up period of the 33 studies was 92 weeks). The effect sizes were significant for all dependent variables, with the strongest effect in social emotional skills ($g = .26$).

A second more recent meta-analysis investigated school-based SEL interventions and their follow-up effects (Taylor et al., 2017). This meta-analysis reviewed 82 school-based, universal SEL interventions implemented with kindergarten through high school students (n = 97,406). Follow-up outcomes were collected six months to 18 years post-intervention. Outcome measures were consistent with the Durlak et al. (2011), with the only addition being substance use. Results indicated that SEL program participants benefited significantly more than did their peers in the control groups, with effect sizes ranging from .13 to .33. Benefits were similar across race, socioeconomic status, and school location. The strongest effect size was found in academic performance ($g = .33$), followed by SEL skills ($g = .23$). Taylor et al. also examined factors that predicted more positive follow-up effects, and found that higher sample attrition was associated with lower effect size, and that the largest follow-up effects were found with student participants ages 5-10 when compared with interventions with students ages 11-13.

Payton et al. (2008) reviewed the research on SEL programs implemented at the universal, school-based level, programs implemented with students who had been identified as at risk for emotional and/or behavioral problems, and programs implemented in after-school programs. Studies included students from kindergarten through eighth grade (n = 324,303). Of the 180 studies measuring the same six outcomes as the Durlak et al. (2011) review, students exposed to the SEL programming experienced significantly

more positive outcomes than students in control conditions, including increased social emotional skills ($g = .60$), higher academic performance ($g = .28$), enhanced attitudes toward self and others ($g = .23$), and increased positive social behavior ($g = .24$). Students receiving SEL intervention also experienced fewer conduct problems ($g = .23$) and emotional distress ($g = .23$) when compared with students in the control conditions. Other important findings were that students in SEL programs demonstrated an average gain on achievement tests scores of 11-17 percentile points, SEL interventions were effective in both the school and after-school settings and for students with and without presenting problems, SEL interventions were successful across K-8, and for schools in urban, suburban, and rural areas and across races and ethnicities, and finally data collected at follow-up indicated positive effects were maintained over time, although maintenance effects were not as strong as post-intervention effects.

Research also supports the notion that SEL skills are strong predictors of post-school positive outcomes. Jones et al. (2015) conducted a study in which they measured teacher ratings of kindergarten students' social emotional skills and examined their ability to predict adult outcomes. They found that kindergarten students who had strong social-emotional competence skills, as measured by teacher ratings, were more likely graduate from high school, complete a college degree, and obtain stable employment in young adulthood. These students were also less likely to be living in public housing, receiving public assistance, being involved with law enforcement, and living in a detention center. Similarly, researchers in Seattle Washington conducted a randomized control trial in which participants in treatment classrooms were provided with SEL

programming, and students in control classrooms were enrolled in classrooms without a systematically implemented SEL program. They followed more than 800 first grade students for more than three decades. They found that the students in the intervention classrooms, when compared with students from the control classrooms, had more high school graduates, more attending college, better self-reported emotional and mental health, and fewer students with a criminal record, and fewer co-morbid diagnoses of substance abuse and mental disorder.

Research on SEL programs and practices primarily focuses on behavioral, social emotional, and academic outcomes. There have been some studies, however, that have investigated the economic benefits of SEL programs. Belfield et al. (2015) examined the projected financial return from six widely-implemented, scientifically-validated SEL programs (4Rs, Positive Action, Life Skills Training, Second Step, Responsive Classroom, and Social and Emotional Training). The researchers calculated the benefit-cost ratios by analyzing the costs of implementation for each program, including personnel, cost of materials, and facilities, and then examined the long term benefits of each program based on previous research findings. Researchers found that each one provided a return on the initial investment, and in fact for some the return far exceeded the costs. For every one dollar spend on each SEL program, the interventions return an average of $11 worth of benefits.

Critical Elements in SEL Implementation

While there is no single, proven method to effectively teach social and emotional skills, researchers at CASEL (2013) have found that SEL can be fostered and that SEL

skills can be taught effectively using a variety of approaches, including explicit instruction of free-standing lessons, general teaching practices such as cooperative learning and project-based learning, integration of SEL into academic content areas, and organizational strategies that embed SEL into the culture and climate of a school. In addition, research from Durlak et al. (2010, 2011) have provided strong evidence that SEL programs with the best student outcomes follow the "SAFE" procedures. SAFE elements of SEL programs and interventions are those that are **S**equenced, or connected, coordinated, and step-by-step training approaches, **A**ctive, in that students are able to actively participate in their learning and practice new skills, **F**ocused on developing social emotional skills by devoting specific time and attention to skill development, and **E**xplicit, in defining the social and emotional skills they are attempting to teach. In addition, effective programs provide opportunities for students to practice new skills within classroom lessons but also generalize practice opportunities to real-life settings. Research suggests that when practice occurs outside of the lessons, the interventions and programs are likely to have an even greater impact on social and emotional skill development (Cohen, 2006).

Research has identified other factors that consistently contribute to the effectiveness of SEL programs and interventions. First, the most effective SEL programming is multi-year, ideally implemented in preschool through high school (Greenberg, et al., 2003). The quality of implementation also impacts the effectiveness of SEL programming (Greenberg et al., 2005). When teachers receive additional training to support implementation efforts, they are more likely to teach all the lessons with high

fidelity and use methods prescribed by the program more effectively when compared with teachers who do not receive training. Finally, programs and interventions that target all five SEL competencies, which are considered the building blocks of social emotional development and lead to strong academic achievement and social adjustment, or more effective than those programs that target single SEL competencies in isolation (Elias, 2006).

Systematic Review of Elementary School-Based SEL Programs

A comprehensive search was conducted to identify studies investigating the effectiveness of SEL classroom-based interventions and their impact on student social-emotional competence skills. The purpose of the current review is to update the results of Durlak et al. (2011) review, which is timely as state education agencies are moving toward full implementation of ESSA and considering non-academic indicators of school quality. The current review, however, limited the investigation of programs to those implemented in classrooms at the elementary setting. Search methods were consistent with the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA; Liberati et al., 2009). Articles were included in the database if they met the following criteria. Studies needed to be (a) published in a peer-reviewed journal between 2007 and 2018; (b) be an original report of quasi-experimental or experimental research; (c) include manipulation of an independent variable, and (d) include at least one measure of social emotional skills as a dependent variable. In addition, research studies needed to be implemented class-wide in a K-5 setting, emphasize one or more of the five SEL competencies, employ a group design, and calculate effect sizes of the interventions.

30

Single-case studies or those involving small groups of students were excluded because the small sample sizes, the student participants were those that had been identified with pre-existing behavioral, emotional, or academic problems, and the purpose of the current study is to examine effects of programs implemented class wide in a general education setting.

Information Sources

  Phase 1 – Electronic Search. An electronic search was conducted on four main databases: ERIC (Educational Resources Information Center), PsycINFO, PsychArticles, and EduResearch Complete. The following keywords were used: *social emotional learning, SEL, social skills, social competence, social development, social emotional, emot* skills, emot* competence, intervention, universal, elementary, student, at risk, effect*, outcomes, self-manage*, self-awareness, relationship skills, problem-solv*, decision making, CASEL, competenc*, social competency.* This initial search yielded 647 results.

  Phase 2 - Ancestral review. The second phase involved conducting an ancestral review of all articles referenced in prior literature reviews as well as the reference sections of all articles that met the criteria for inclusion of this review. These searches yielded 29 additional studies to be considered (14 from reference searches and 15 from literature review references).

  Phase 3 - Hand search. Next, a hand search was also completed on journals which published the most articles that were located through the electronic search (*School*

Psychology Review and *Journal of School Psychology).* This hand search yielded an additional 3 relevant articles.

Phase 4 - Forward search. A forward search using Web of Science and Google Scholar was conducted to locate additional articles found by examining studies which contained the citations we previously identified. No additional articles were added through the forward search process to examine citations through Google Scholar and Web of Science.

Final selection. The researcher read through titles and abstracts of all studies and identified 71 studies for possible inclusion. Of the 71 studies a total of 11 met criteria for inclusion in this review (see Figure 2 below). The primary reasons articles were excluded from the review were that studies: (a) implemented SEL interventions to small groups of students identified at risk within the general educational classroom; (b) implemented SEL in a special education classroom with students identified as having a disability; (c) measured only classroom climate, teacher behaviors, or academic achievement; and (d) implemented a coaching intervention or intervention focused on teacher practices rather than an intervention with sequenced SEL lessons taught to students.
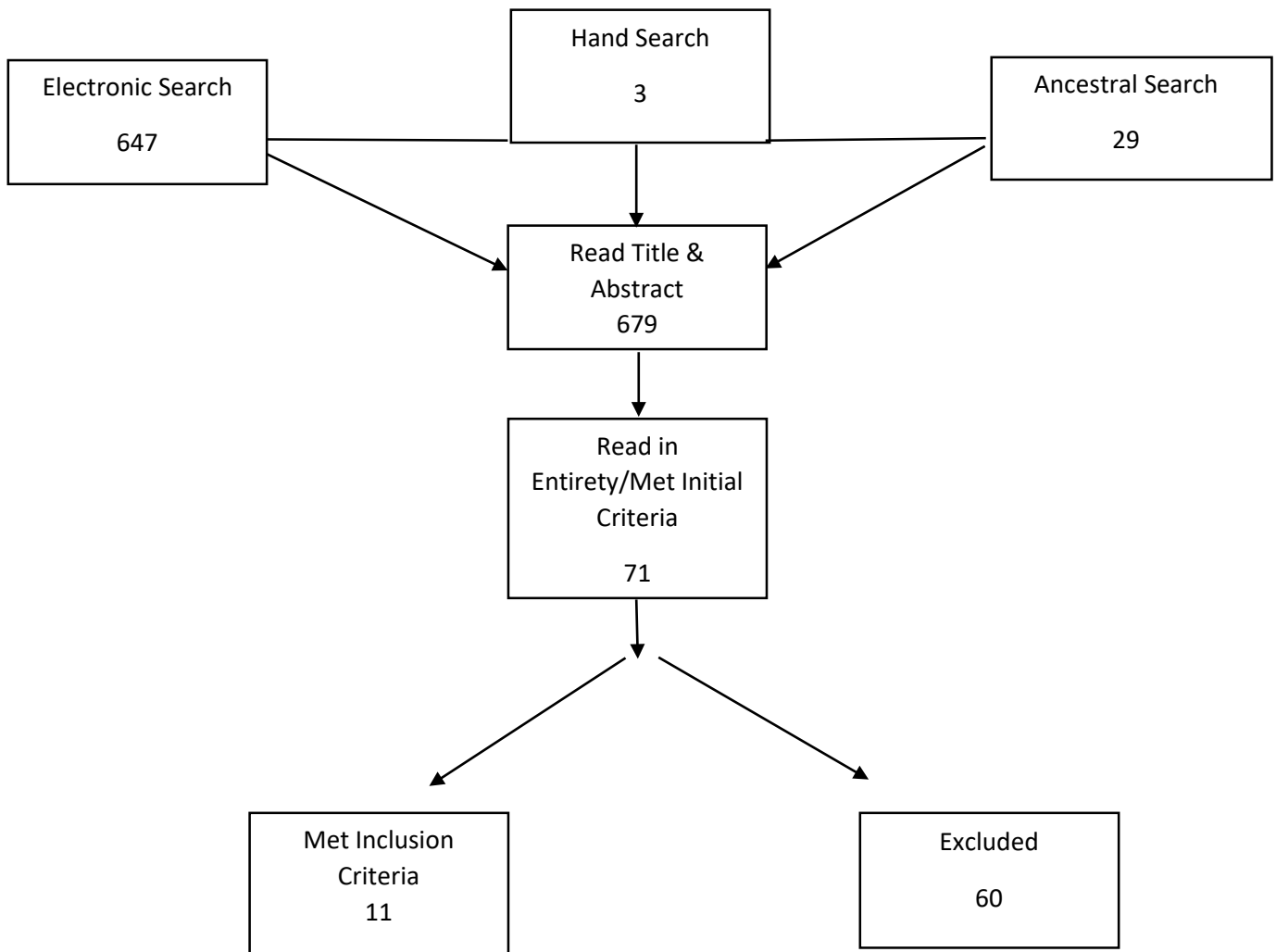
Figure 2. Inclusion/Exclusion of SEL Intervention Articles

Coding Procedures

       A predesigned coding sheet provided the framework for organizing relevant

information from the studies. Included on the coding sheet were data regarding (a)

participants (gender, age/grade, race, socioeconomic status); (b) research design (i.e., size

of treatment group, group design type, fidelity, dependent measures); (c) conditions (i.e.,

treatment and control conditions, name of SEL intervention, implementer, session length,

frequency, and duration); and (d) data collection and results (i.e., mean, standard deviation, effect size, *p* values). A copy of the coding sheet can be obtained from the author.

Quality Indicators

Following recommendations set forth by Gersten et al. (2005), the 11 studies that met initial inclusion criteria were evaluated to determine the number of quality indicators for group and experimental and quasi-experimental research articles and reports that the study met.   The quality indicators fall into one of two categories: those that are *essential* for quality versus indicators that are *desirable* to have in a study (see Table 1). Based on the number of quality indicators a study meets, each study is then considered either "acceptable" quality or "high" quality. To be considered acceptable quality, a study needs to meet all but one of the essential Quality Indicators, and demonstrate at least one of the quality indicators that are considered desirable. To be considered high quality, a study needs to meet all but one of the essential Quality Indicators and demonstrate at least four of the quality indicators that are considered Desirable.

Table 1

Quality Indicators for Group Design Studies

Essential Quality Indicators	Description
Participants	Sufficient information to determine participants' difficulties/disabilities
	Appropriate procedures to increase likelihood that participant characteristics were comparable across conditions
	Sufficient information given characterizing interventionists/teachers
Implementation of Intervention	Intervention clearly described
	Fidelity of implementation described
	Nature of services provided in comparison condition described
Outcome Measures	Multiple measures used to provide balance between measures
	Outcomes measured at appropriate times
Data Analysis	Data analysis techniques linked to research questions and hypotheses
	Research report include inferential and effect size calculations
Desirable Quality Indicators	
	Attrition data available
	Internal, test-retest, and inter-rater reliability provided
	Outcomes beyond immediate posttest measured
	Criterion and construct validity of measures provided
	Fidelity assessed quantity and quality of implementation
	Documentation of instruction in comparison condition provided
	Audio or video tape excerpts of intervention included
	Results provided in clear, coherent fashion

Results of Systematic Review

Quality Indicators

Of the 11 studies identified for this review, six (DiPerna et al., 2018; DiPerna et al., 2015; Conduct Problems Research Group, 2010; Low, 2015; Jones, 2011; & Graves et al., 2017) are considered high quality as a result of meeting at least three of the essential quality indicators and four of the desirable quality indicators. The remaining five studies are considered adequate quality, since they met at least three of the essential quality indicators but fewer than six desirable quality indicators (Merrell et al., 2008; Hennessy, 2007; Ryan, 2016; Bracket, 2012; & Cook, 2012). The adequate quality studies did not assess fidelity of implementation, used only a single measure to assess social emotional skills, and did not implement any type of randomization in assigning students or classrooms to conditions. In addition, five studies (Ryan et al., 2016; Graves et al., 2017; Brackett et al., 2012; Hennessey, 2007; & Merrell et al., 2008) did not provide any demographic information about the person implementing the intervention. None of the 11 studies provided detailed information of the control conditions. Most characterized the control condition as "business-as-usual" or stated that the control classrooms were not implementing an SEL curriculum or program. Additionally, none of the 11 studies measured maintenance effects. All 11 studies provided effect size calculations or analyzed for statistical significance across conditions, described in detail the SEL intervention, and measured the outcomes at appropriate times (following the intervention). All 11 studies also employed data analysis techniques that linked to the

unit of analysis in the study. Table 2 includes information on the 11 studies and the

quality indicators.

Table 2

Presence of Quality Indicators of Systematic Review Studies

Indicator	Hennessey (2007)	Merrell (2008)	CPRG (2010)	Jones (2011)	Brackett (2012)	Cook (2015)	DiPerna (2015)	Low (2015)	Ryan (2016)	Graves (2017)	DiPerna (2018)
Participants	N	N	N	N	N	Y	Y	Y	N	N	Y
Intervention	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
Outcome measures	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Data analysis	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Attrition data	N	N	Y	N	N	N	Y	Y	N	Y	Y
Reliability	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Maintenance	N	N	N	N	N	N	N	N	N	N	N
Validity	N	Y	Y	Y	N	N	Y	Y	Y	N	Y
Fidelity	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y
Control description	N	N	N	N	N	N	N	N	N	N	N
Cohesive results	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Audio/video of intervention	N	N	N	N	N	N	N	N	N	N	N

Note: CPRG = Conduct Problems Research Group

Participants

Across the 11 studies included in this review a total of 8,445 participants were

exposed to SEL programming. Descriptions of the participants' age, race, and gender

appear in Table 2. Participant gender was approximately evenly split between boys and

girls in the seven studies that included information on gender. Six studies reported school

socioeconomic status, which ranged from 4% to 100% of enrolled students. All but two studies (Conduct Problems Prevention Research Group, 2010 & Jones et al., 2011) reported participant race. Of the nine studies that reported race, 40% (n = 2,084) of participants were Caucasian (28% (n = 1,477) were Hispanic, 10% were Black (n = 547), 14% were Asian (n +; 732), and 8% were two or more races/other (n = 420). Three studies reported grade levels (Ryan et al., 2016; Conduct Problems Research Group, 2010; Low et al. 2015) of 4th and 5th, 1st through 3rd, and K-2nd, respectively. The remaining eight studies reported ages, with participants ranging from 7.2 years to 11 years old.

Table 3.

Participant Information

Authors	*n*	Age/grade	Race	Gender
Hennessey (2007)	154	9.2	NR	86M/68F
Merrell et al. (2008)	120	10-11	97% C; 3% H	64M/56F
Conduct Problems Research Group (2010)	2937	1st – 3rd grade	NR	NR
Jones et al. (2011)	630	8.1	46%H; 41%AA; 4% C; 9% Other	311M/319F
Brackett et al. (2012)	155	11	59%C; 27%H; 13%AA; 1%unidentified	NR
Cook et al. (2015)	191	9.8	52%C; 48%AA	97M/94F
DiPerna et al. (2015)	228	7	67% C; 22% AA, 2% A; 6% H; 3% Other	46%M/54%F
Low et al. (2015)	3637	K-2nd	44% C; 31% H; 20% A; 5% NR	18
Ryan et al. (2016)	20	4th-5th grade	100% AA	0M/20F
Graves et al. (2017)	32	7.2	100% AA	NR
DiPerna et al. (2018)	341	6.2	22%AA; 72%C; 6%NR	52%M/48%F

Note. AA = African American; C = Caucasian; H = Hispanic; A = Asian; M = Male; F = Female; NR = Not reported

Characteristics of the Interventions

All of the SEL programs were implemented in general education classrooms in public school settings. The following programs were implemented in the studies: Strong Kids/Strong Start (*n* = 4), Social Skills Improvement System-Classwide Intervention

Program (SSIS-CIP; $n = 2$), 4Rs, Second Step, PATHS, Open Circle, and RULER. The teacher implemented the intervention in eight of the studies, school psychology doctoral students implemented the intervention in two of the studies, and the principal implemented the intervention in one of the studies. With the exception of the principal, all treatment implementers received training before beginning the intervention (the principal had been previously trained). The number of lessons in the SEL program ranged from 12 to 57, lessons were provided from one to three times per week, and the lessons took from 20 to 60 minutes to deliver. All of the SEL interventions provided explicit instruction in SEL competencies, provided opportunities for students to practice skills taught, and allowed opportunities for students to receive feedback on skills learned.

While all 11 studies purported to measure social emotional skills as the dependent variable, the ways in which they measured them varied across studies. All of the studies obtained information from the teacher, whether through rating scales or interviews, to assess student skill level. Two studies also collected information through student self-report. The studies that implemented the Strong Kids curriculum used the Strong Kids Knowledge Assessment to assess SEL skills. Three studies used a version of the Social Skills Improvement System or the older Social Skills Rating System version, and two studies used the Social Emotional Assets Rating System (SEARS). Other measures included the Behavior Assessment System for Children (BASC), the Internalizing and Externalizing Behavior Screener, the Devereux Student Strengths Assessment, and researcher-created measures of social competence. Two studies also used observational tools to collect data.

Design Features

Each of the 11 studies in this review employed a pretest/posttest design, with all but three using a cluster randomized design. Two of the 11 studies measured social validity, and all but two measured fidelity of treatment implementation. Fidelity of implementation was assessed through direct observations and self-reports. The dependent variables were measured using a variety of tools, which included the Social Skills Improvement System, Strong Kids Content Knowledge Assessment, Social Emotional Assets and Resilience Scale (SEARS), Student Internalizing Behavior Screener, Devereux Student Strengths Assessment, Cooperative Learning Observation Code for Kids, the Social Competence Scale, and the Behavior Assessment System for Children.

Effect Size

Nine of the 11 studies reported effect size of the intervention. Eight studies reported Cohen's d, two reported Hedge's *g,* and one reported partial η^2. All but one of the studies reported at least a moderate effect size for at least one measure of social-emotional competence. The single study that reported non-significance for SEL measures was Ryan et al. (2016), where Strong Kids was implemented by a school psychologist with African American female students in an urban classroom. When Strong Kids was implemented by a school psychologist with African American male students, using the same measures (i.e., SEARS), large effect sizes were found.

Table 4

Systematic Review Study Characteristics

Author	Number of Lessons	Length of Lesson	Intervention	Intervention Setting	Implementer	Training Conducted	SEL Measures(s)	Research Design	Effect Size
Bracket	16	NR	RULER Curriculum	GE	Classroom teacher	1.5-day training	BASC	Quasi-experimental pretest/posttest	NR
CPRG	46-57	20-30 min	PATHS	GE	Classroom teacher	2-day training	TOCA-R; SHP	Randomized control trial	.34 - .70
Cook	12	40-50 min	Strong Kids	GE	Classroom teacher	1-day training	SIBS; SEBS	Quasi-randomized control	.33-.72
DiPerna (2018)	30	20-25 min	SSIS-CIP	GE	Classroom teacher	1-day workshop	SSIS-RST CLOCK	Cluster Randomized Trial	.05-.31
DiPerna (2015)	30	20-25 min	SSIS-CIP	GE	Classroom teacher	1-day workshop	SSIS-RST; CLOCK; CLASS	Cluster Randomized Trial	.19-2.31
Graves	12	NR	Strong Start	GE	Doctoral students	Yes (length not reported)	Strong Start Assessment; SEARS; BASC	Randomized delayed treatment control	.1 – 1.38
Hennessey	35	NR	Open Circle	GE	Classroom teacher	Yes (length not reported)	SSRS Teacher and Student Form	Quasi-experimental pretest/posttest	NR
Jones	21-35	50 min	4Rs	GE	Classroom teacher	25 hours of training plus coaching	Home Interview Questionnaire; Normative Beliefs About Aggression Scale; What I Think; BASC, Social Competence Scale	School-randomized experimental	.12 - .38
Low	22-28	NR	Second Step	GE	Classroom teacher	4-hour training	DESSA; SDQ; BOSS	Randomized control trial	.13-.80
Merrell	12	45 min	Strong Kids	GE	Principal	Yes (length not reported)	Knowledge and Symptoms Test	Non-experimental Pretest/Posttest	.05 - .94
Ryan	12	40-50 min	Strong Kids	GE	Doctoral students	2-day training	Strong Kids Assessment; SEARS	Quasi-experimental pretest/posttest	.25-.40

Note. SSIS-CIP = Social Skills Improvement System, SSIS-RST = Social Skills Improvement System Rating Scales-Teacher Form; Classwide Intervention Program; CLOCK = Cooperative Learning Observation Code for Kids; CLASS = Classroom Assessment Scoring System; GE = General education classroom; SEARS; NR = Not reported; SIBS = Student Internalizing Behavior Screener; SEBS = Student Externalizing Behavior Screener; BASC = Behavior Assessment System for Children; DESSA = Devereux Student Strengths Assessment; SDQ = Strengths and Difficulties Questionnaire; BOSS = Behavioral Observation of Students in Schools; PATHS = Promoting Alternative Thinking Strategies; SHP = Social Health Profile; TOCA-R = Teacher Observation of Classroom Adaptation-Revised

Discussion

This systematic literature review was conducted to identify studies investigating the effectiveness of SEL classroom-based interventions and their impact on student social-emotional competence skills. The purpose of the current review is to update the results of Durlak et al. (2011) review, which is timely as state education agencies are moving toward full implementation of ESSA and charged with being accountable for non-academic indicators of school quality. The review identified several key findings, which include: (a) students in classrooms where SEL lessons are delivered demonstrate improved SEL skills when compared with their peers from control classrooms; (b) evidence-based SEL programs require lengthy training before implementation, (c) only two studies assessed social validity of the program; and (d) only two of the 11 studies measured student self-ratings on SEL skills.

Overall Effectiveness of SEL Programs

The results of this systematic review are similar to the results from the Durlak et al. (2011) meta-analysis. The current review suggests that students that were exposed to SEL instruction in the general education classroom demonstrated larger gains in SEL skills when compared with students from control classrooms. Effect sizes ranged from .05 to 2.31, with the largest effect sizes reported on outcomes measuring general social emotional competence or overall social skills using teacher ratings, and for those students with the lowest pretest scores. Lower effect sizes were reported when assessing externalizing behavior (DiPerna et al., 2015), self-reported emotional symptoms (Merrell et al., 2008), problem behaviors (DiPerna et al., 2018) and academic skills (DiPerna et

al., 2018). In terms of effects across different populations, small and insignificant effects were found when SEL lessons were delivered to female, African American students (Ryan et al., 2016), and the strongest and most significant effects were found in urban schools (Hennessey, 2007).

Training Prior to SEL Implementation

Each of the 11 studies reported some amount of training required before implementing the SEL program. The training ranged from four hours (Low et al., 2015) to 25 hours plus coaching (Jones et al., 2011). The average length of training across the 11 studies was just over 12 hours. Three studies (Graves et al., 2017; Hennessey, 2007; Merrell et al., 2008) reported implementers receiving training but did not specify the length of the training. However, when comparing the length of the training and the outcomes of the intervention, there did not appear to be a strong correlation. For instance, the study with the least amount of training (Low et al., 2015; 4 hours) demonstrated effect sizes that were similar to studies that included one day trainings (Cook et al., 2015) or longer (Ryan et al., 2016; 2-day training). This is an important finding since many of the evidence-based SEL programs require intensive training, and previous research has found that when teachers receive additional training they are more likely to implement lessons with high fidelity (Elias, 2006). More research is needed to investigate how much training is necessary to reach adequate levels of fidelity of implementation, and how much training is necessary for the strongest impact. Additionally, research on SEL programs that require little training should be studied, since it is likely that teachers and

schools may be more likely to adopt SEL programs that they perceive as easy to implement.

Lack of Social Validity Data

The third key finding is that despite all 11 studies meeting enough quality indicators to be considered high or adequate quality, only two (Graves et al., 2017; Cook et al., 2015) assessed social validity. After implementing the Strong Start intervention (Graves et al., 2017), researchers in the study asked students to fill out a questionnaire and asked teachers to participate in an interview, and following intervention of the Strong Kids program Cook et al. (2015) had teachers complete the Intervention Rating Profile-15. The remaining nine studies made no mention of teacher or student perceptions of the SEL program implemented in the study. This is concerning, since districts and state LEAs are charged with providing evidence-based interventions, but in order to do so effectively there must be buy-in from stakeholders. This is important since high rates of teacher buy-in are associated with increased levels of implementation fidelity (Marchant, Heath, & Miramontes, 2012). When researchers neglect to assess social validity as it relates to school-based interventions, including SEL instruction, they lose the ability to predict the acceptability of interventions and programs. It will be critical, therefore, that future research investigating the impact of SEL programs include data on social validity from all stakeholders, including teachers and students. This can increase buy-in, and thereby increase fidelity of implementation of evidence-based programs which can lead to more positive outcomes for students.

Reliance on Teacher Ratings

Another key finding of this systematic review is that of the 11 studies included in the review, over half relied solely on teacher ratings of SEL skills to assess the impact of the intervention on SEL skill development in students (Jones et al., 2011; Merrell et al., 2008; Graves et al., 2017; Ryan et al., 2016; Brackett et al., 2012; and Cook et al., 2015). One of the essential quality indicators for group studies is using multiple measures to assess study outcomes (Gersten et al., 2005), yet a majority of the studies in this analysis measured student SEL skills using teacher ratings only. Three of the studies did use student assessments, but not specifically to assess student SEL skills. Instead, student reports were used to assess the knowledge of content taught in the SEL lessons (Merrell et al., 2008; Graves et al., 2017; Ryan et al., 2016). While this provided the researcher data on whether or not students understood the content of what was being taught, nor their ability to apply what was taught. Three of the studies corroborated teacher ratings of student SEL skills through observational data (Low et al., 2015; DiPerna et al., 2015, 2018) using standardized observational tools (e.g., Behavioral Observations of Students in Schools; BOSS). Of particular interest is that just one study (Hennessey, 2007), used student self-report ratings of their SEL skills to assess impact of the intervention. Results of this study revealed significant pretest to posttest differences in teacher ratings, but no significant differences in student self-ratings. It is true that teacher ratings of student SEL skills have been found to be strong predictors of long term outcomes (Jones et al., 2015), but more research is needed to investigate students' ability to rate their SEL skill level and whether it is consistent with teacher ratings and observational data.

Limitations

One limitation of the current review is that the exclusionary criteria might have resulted in high quality studies of SEL intervention being eliminated. The current review focused solely on SEL interventions delivered in the general education setting with general education students. Only group design studies were included, and studies where SEL interventions were implemented with small groups of targeted students or with students identified with disabilities were also excluded. This limits the generalizability of the findings. Examining studies where SEL programs were implemented with different populations (e.g., middle school students, students with disabilities), and at different tiers of instruction, would provide more evidence as to the effectiveness of these programs.

A second limitation of this review is the variability in how SEL skills were assessed through teacher ratings. No fewer than ten measures were used across the 11 studies (e.g., Behavior Assessment System for Children; Social Skills Improvement System, Social Emotional Assets and Resilience Scales). None of the measures specifically assessed each of the five SEL competencies, despite the fact that SEL was uniformly defined as including the competencies in every study. Despite all of the studies purporting to measure SEL skills, researchers measured outcomes such as internalizing and externalizing behavior, emotional symptoms, problem behaviors, and aggression. Depending on the measures, it is questionable whether these descriptors fall within one or more of the SEL competencies.

A final limitation to this review is that none of the 11 studies assessed whether or not the changes in outcomes measured were maintained over time. A goal of research on

SEL programs is to investigate their impact, and an important component of the programs with the highest efficacy is the ability of the program to effect changes in students that are maintained over time.

Recommendations for Future Research

Much of the current research on classroom-based SEL programs has focused on programs that require intensive training on the part of the teacher before implementation can begin. More research is needed on SEL programs that can be implemented with minimal training and that are easily accessible to teachers. In addition, there have been few studies that have examined student self-ratings as a measure of SEL skill level. Future research should investigate not only teacher-rated student SEL skills, but also student self-ratings of their SEL skills level. A majority of studies have measured general SEL skills using composite scores, but have not specifically assessed the five skill competencies that are said to collectively make up the totality of SEL. Research on SEL programs should study the impact on not only general SEL, but the impact across the five competencies. Finally, it is critical that future studies assess teacher and student social validity of the SEL programs being implemented.

CHAPTER THREE

METHODS

Despite the many SEL programs that have been researched, including those in the current review and in Durlak et al. (2011) review, *Zones of Regulation* (Kuypers, 2011) is an increasingly popular program that is widely used in schools yet has not been researched to evaluate its effectiveness. The program is a systematic, cognitive behavioral approach used to teach students self-regulation skills. The curriculum consists of 18 teacher-delivered lessons that teach students strategies related to the five SEL competencies, including awareness of emotional states in self and others (self and social awareness), managing behavioral responses related to emotional states (responsible decision-making and self-management), and conflict resolution (relationship skills). According to the author of the program, teachers from every U.S. state as well as Australia, Europe, the Middle East, Asia, and the Caribbean Islands have attended trainings. It is currently being implemented in school districts across six continents. This is concerning considering to date there have been no empirical studies evaluating the effectiveness of *Zones of Regulation* on student social emotional skills.

The purpose of this study was to investigate the effectiveness of a classroom-based social emotional learning curriculum, *Zones of Regulation*, on the social-emotional competence skills of second grade students across high poverty and low poverty schools. A quasi-experimental, wait-list comparison, non-equivalent group design with pretest and posttest measures was employed. Quasi-experimental design is considered the strongest design type when true experimental design is not possible for ethical or logistical reasons,

such as in educational settings where classes and schedules are pre-established (Gall, Gall, & Borg, 2007; Glatthorn & Joyner, 2005). The rationale for this design is that students cannot be randomly assigned to classrooms. The design allowed the researcher to compare intact groups (i.e., classrooms) that are either implementing *the SEL lessons* (treatment) or are business-as-usual (control). This design has also been used in previous studies that have investigated SEL programs (DiPerna et al., 2018; Brackett et al., 2012).

The rationale for conducting this study is that while there have been numerous research studies measuring the efficacy of classroom-based SEL interventions and their impact on student social and emotional functioning, to date there have been no studies investigating the efficacy of *Zones of Regulation*. Despite the lack of research, it is currently implemented throughout the United States and teachers in six continents have been trained on the program. Therefore in the current study the independent variable was the SEL lessons. The dependent variable in the current study was social-emotional competence skills, which was measured with the teacher form of the Social Skills Improvement System – Social emotional Learning Edition Screener (SSIS-SEL; Gresham & Elliot, 2017), the teacher form of the Social Emotional Assets and Resilience Scale (SEARS; Merrell & Tom, 2012), and a researcher-created, a self-report measure of social-emotional competence for children. Social-emotional competence skills as measured by these tools are based on the CASEL framework of SEL and the five social emotional competencies (CASEL, 2013).

Specifically, this study attempted to answer the following research questions:

1) What is the impact of the *Zones of Regulation* curriculum on the knowledge and application of social-emotional competence skills in second grade students, as measured by teacher ratings?

 2) What is the impact of the SEL curriculum on the knowledge and application of social-emotional competence skills in second grade students, as measured student self-ratings?

3) What is the impact of the SEL curriculum on the knowledge and application of social-emotional competence skills in second grade students in high poverty schools compared to low poverty schools, as measured by teacher ratings and student self-ratings?

HYPOTHESES

This study tested the hypotheses informed by the results of previous studies of class-wide SEL interventions implemented with elementary-aged students. The first hypothesis was that children in classrooms implementing the SEL lessons would demonstrate improved social-emotional skills compared to children in non-implementing business-as-usual control classrooms. The second hypothesis is that children in the treatment classrooms in high poverty schools would demonstrate improved social-emotional skills compared to children in the treatment classrooms in low poverty schools.

Participants

The twelve participating classrooms were drawn from three elementary schools in the Southeastern region of the United States, all within a single, medium-sized school district with a total student enrollment of 16,378 students. The district consisted of 24 schools, and school demographics indicated that 86% of the students were White, 7% were Black, 3% were Hispanic, 2% were Asian, and 1% were two or more races.

Approximately 95% of students spoke only English, and nearly 15% of families lived below the poverty line. The district and classrooms were chosen based on proximity to the university and willingness of the school administration and teachers to participate in the study, therefore participants were a non-randomized convenience sample.

School A and B were high poverty, Title I schools, which are identified by the U.S. Department of Education and include any school in which at least 40% of the student enrollment are from low-income families (U.S. Department of Education, 2015). In both School A and School B, four 2nd grade classrooms participated in the study ($N =$ 8); in each school two classrooms were assigned to treatment condition, and two were assigned to control condition (business-as-usual; BAU). In School C, four 2nd grade classrooms participated in the study ($N = 4$); two were assigned to treatment condition, and two were assigned to control condition. At each of the three schools classrooms were assigned to one of the two conditions based on administrator recommendation and teacher willingness to implement the SEL from January through May. School A had a total student enrollment of 499. School demographics indicated that 87% were White, 4% were Hispanic, 4% were Black, and 4% were two or more races. One-hundred percent of the students at School A qualified for free lunch. The average class size in School A was 18. School B had a total student enrollment of 421. School demographics indicated that 56% were White, 21% were Hispanic, 16% were Black, and 7% were two or more races. Like School A, 100% of the students qualified for free lunch. The average class size in School B was 18. School C, the participating school that did not meet qualifications to be considered Title I, had a student enrollment of 643. School demographics indicated that

94% were White, 3% were Hispanic, 2% were two or more races, and less than 1% were

Black. Approximately 55% of students qualified for free lunch or reduced lunch. The

average class size in School C was 21. None of the 12 participating schools were

implementing any SEL programming at either the school or classroom level.

The six participating teachers from the treatment classrooms were all White

females. Five of the six had master's degrees, and they had an average of 12.5 years of

teaching experience ($SD = 8.5$). The six participating teachers from the control

classrooms were also all White and female. Five of the six had master's degrees, and they

had an average of 9.1 years of teaching experience ($SD = 5.1$). Tables 3 and 4 include

demographic information of participating schools and teachers.

Table 5.

Demographic Variables of Participating Schools and Students

School	Enrollment	White	Hispanic	Black	2 or More	Class Size Ave.	Free/reduced lunch	Poverty Status
A	499	88%	4%	4%	4%	18	100%	High
B	421	56%	21%	16%	7%	18	100%	High
C	643	94%	3%	<1%	2%	21	55%	Low

Table 6.

Demographic Variables of Participating Teachers

Condition	N	Gender	Race	Average years of experience	Master's Degree
Treatment	6	100% Female	100% White	12.5	5/6
Control	6	100% Female	100% White	9.1	5/6

Following university and school district IRB approval, participating teachers were provided with letters of informed consent, outlining the research and their role in the research, the potential risk and possible benefits, and the voluntary nature of their participation. All 12 teachers provided consent to participate. Administrators at all three schools expressed concern about the historically low response rate for parent forms that are sent home with students, therefore passive consent was obtained from parents of students in both conditions. The consent form described the research study, their child's part in the research, potential risks and benefits, protection of confidentiality, and the voluntary nature of participation. Students whose parents returned the form indicating they *did not* want their child to participate were not part of the study. Two parents withdrew their child from participating. Students in the participating classrooms were provided with student assent forms describing the reasons for the study, their role in the study, potential risks and benefits, and the voluntary nature. Students were provided with a paper copy of assent, and teachers read the consent forms to the class. Students who expressed confusion about the assent form met with the teacher in small groups to receive additional clarification.

Independent Variable

The independent variable in the current study is the SEL curriculum. The *Zones of Regulation* is a curriculum designed to foster emotional self-regulation and teach students skills in consciously regulating their actions using a cognitive behavioral approach (Kuypers, 2011). The curriculum consists of 18, 30-60 minute lessons that teach students how to label and recognize their emotions, identify the body's cues to emotional states,

identify triggers that lead to un-regulated states, identify ways that emotions, thinking processes, sensory needs, and the environment can influence our emotional responses, as well as strategies to self-regulate their emotional responses (See Table 3). Students are taught the four "zones," or emotional states, that are represented by a different color (green, blue, yellow, or red). Emotions are categorized into one of the four zones, and corresponding strategies to allow them to stay in a zone or move from one zone to another are taught. Specific strategies taught in the lessons include how to read others' facial expression, increasing awareness and insight into events that can trigger their less-regulated states, and when and how to use the coping tools and problem-solving skills.

The lessons were delivered in the general education classroom setting in each of the six treatment classrooms, and lessons were delivered by the classroom teacher, the guidance counselor, the behavior interventionist, or a combination of the three. Instruction took place during a time period determined by the classroom teacher, with two to three lessons taught per week. Lesson instruction took place in the large group setting, with students seated at their desks and the teacher instructing from the front of the classroom. Students moved into small groups established by the teacher to complete SEL lesson activities.

Table 7

Zones of Regulation Lessons

Lesson	Objective
One	Introduction of four zones; increase vocabulary related to emotions
Two	Zones bingo; accuracy in reading facial expressions and categorizing them into zones
Three	Using videos to understand zones
Four	Using scenarios to predict zones students would be in
Five	Understanding different perspectives and how others see students' behavior
Six	Me in My Zones; take and/or draw pictures of students in their zones
Seven	Scenarios used to help students match emotions to experiences through literacy
Eight	Graphing how zones change throughout the day
Nine	Understanding triggers of the red and yellow zones
Ten	Sensory support tools that align with zones
Eleven	Exploring tools for calming
Twelve	Exploring tools: thinking strategies
Thirteen	Students organize tools learned in a visual toolbox
Fourteen	When to use Yellow Zone tools
Fifteen	Students Practice identifying tools to use during their day depending on zone
Sixteen	Students learn to self-monitor tools and their zones; discuss generalizing to other settings
Seventeen	Stop, Opt, and Go – further practice with self-regulation
Eighteen	Celebration

Dependent Measures

Three measures were used to assess social-emotional competence. Along with the researcher, a doctoral student scored 30% of the dependent measures for inter-rater reliability. Inter-rater reliability for the SSIS SEL was 98%, for the SEARS 99%, and for the self-rating was 100%.

SSIS-SEL. The Social Skills Improvement System-Social emotional Learning Edition Screening/Progress Monitoring Scales (SSIS SEL) is a criterion-referenced rating form used to assess student-based strengths and improvement areas across the five SEL competencies (Gresham & Elliot, 2017). The SSIS SEL screener can be completed by teachers of students in grades PK through 12, and is classroom-based. It takes approximately 30-45 minutes to complete for an entire class. The tool is used for the identification of students' current level of functioning on each of the five SEL competencies, and for monitoring the progress of student development and responses to interventions.

The SSIS SEL screener allows teachers to rate each student on each SEL competency using a 5-point Likert scale. Five represents the student having mastered the skill and does not require additional instruction, four, the student performs the skill consistently but is likely to benefit from additional instruction, three, the student performs the skill proficiently though inconsistently and would benefit from additional instruction, two, the student is limited in their performance of the skill and needs additional instruction, and one, the student rarely can perform the skill and needs intensive instruction. Examples of observable behaviors at each level for each competency are

provided for guidance. Teachers first read the definition and the performance level descriptions, then select a performance level that best describes the current level of functioning of each student in the classroom. Total composite scores range from 1 to 25, and individual competency scores range from 1 to 5. Scores 3-5 represent degrees of proficiency, a score of two represents and emerging or at-risk skill level, and a score of 1 indicates the skill is limited. The composite score of this measure has a reported internal consistency of .91 and a test-retest reliability of .89. The competency scores have the following test-retest reliability coefficients: Self-awareness .70, Self-Management .76, Social Awareness .79, Relationship Skills .80, and Responsible Decision Making .87.

SEARS. The Social Emotional Assets and Resilience Scale is a strengths-based, cross-informant assessment that is used to measure social-emotional competence of children and adolescents (Merrell & Tom, 2012). The SEARS offers a parent rating form, a teacher rating form, and a child rating form, and all are offered in both long and short forms. The long version of the SEARS includes 54 items that are rated using a 4-point rating scale (i.e., 0 = never to 3 = always), with higher scores indicating higher levels of social-emotional competence. The SEARS-Short Form consists of 12 items using the same 4-point scale. The items include characteristics related to friendship skills, empathy, problem solving, self-management, and emotional competence. Sample items from the SEARS include, "Tries to understand how other students feel when they are not doing well," and, "Makes friends easily." Teachers in the current study completed the short form teacher version of the SEARS. A total score of social-emotional competence was

derived. Total scores ranged from 0 to 36, with higher scores indicating higher levels of social-emotional competence.

Correlation between the teacher long and short form of the SEARS are strong (Chronbach's Alpha - .98; Nese et al., 2012). Convergent validity for the SEARS teacher short form was determined by having teachers complete the short form in addition to other strength-based child rating scales that are nationally standardized and widely used. Convergent validity for the SEARS teacher short form and the peer relations' susbscale of the Social Skills Rating Scale (SSRS) yielded a Pearson r of .88 (p < .01). Convergent validity for the SEARS teacher short form and the SSRS total score yielded a Pearson r of .71 (p < .01) (Nese et al., 2012).

Researcher-Created Student Self-Report. In order to assess student perception of their social-emotional competence, each student completed a researcher-created SEL self-assessment. The assessment consisted of ten statements in which students are asked to respond how easy or difficult each are for them using a 4-point Likert scale (1 = Very Hard, 2 = Hard, 3 = Easy, 4 = Very Easy). Two items attempted to assess each of the five SEL competencies (e.g., self-awareness, calming myself down when I am angry). The items were read aloud to students, with the scale printed on their paper rating scale and posted at the front of the classroom. Students who needed more help or more time completed the rating scale in a small group or 1:1 setting with the classroom teacher or guidance counselor.

Procedures

      Recruitment. Schools and classrooms were recruited through meetings with elementary school principals and support staff. The research study was described, principals invited their teachers to participate, and teachers then decided whether to volunteer to participate. Teachers made the decision amongst themselves, with input from their administrator, as to whether they would be assigned to the treatment or control condition. They were informed that participation was voluntary. Teachers were also informed that should they be assigned to the control condition, they would be provided access to both the training and intervention materials following the conclusion of the study. The six intervention teachers who provided verbal consent were then provided with informed consent, and upon receiving teachers' consent, the parents of students in each of the classrooms were provided with passive consent forms. Two parents sent back forms indicating they did not want their child to participate. Data were not collected for these students, and during the lessons they played educational games on the classroom computer using noise-cancelling headphones. Upon receiving parental consent student assent was secured with the teacher providing a copy of the assent letter and reading it to the class. Teachers provided clarification of assent in small groups to students who expressed confusion about the study. Demographic information (i.e., age, gender, race, and disability status) on all student participants was collected from the school.

      Teacher Training. Prior to the implementation of the lessons, teachers from the treatment classrooms received two hours of training. The training was provided by the researcher at an agreed upon day and time. The training covered the five competencies of

SEL, the research base of SEL, the steps involved in the research study, details and procedures for delivering the lessons, and procedures for completing the rating scales and administering the student self-ratings. Teachers were provided with the manuals and the materials needed for the first six lessons. A separate training was held for each of the three schools, and a training checklist was completed to ensure that each component of the training was delivered (Figure 3). Teachers and administrators were told that booster sessions would be provided if needed, but no one requested a booster at any point during the study. Teachers from the control classrooms received a brief training that covered procedures for completing the rating scales and for administering the student self-ratings.

Training Date: _____ School: _____

Did I discuss?

_____ The definition of SEL

_____ The 5 SEL competencies

_____ Steps of the current study

_____ Instructions on delivering Zones lessons

_____ Instructions on completing rating scales

Did I provide?

_____ Zones of Regulation book

_____ Zones of Regulation posters

_____ Rating Scales

_____ Teacher consent

_____ Parent consent

_____ Student assent

_____ Zones lesson materials

Figure 3. *Zones of Regulation Training Checklist*

Pretest. After all of the teachers in both conditions received the appropriate training, they were provided with the SSIS SEL Screener and the SEARS for each of their students. Ina addition they were also provided with copies of the student self-rating. Teachers were asked to complete the ratings within a two-week period, and before starting with the first lesson. The three measures provided the baseline data on the dependent variable of social-emotional competence and knowledge. The pretests were then collected and stored by the researcher.

Intervention. Following training and pretest data collection, the teachers in the treatment groups implemented each of the 18 lessons, delivering between two to three lessons per week. Some lessons were taught by the guidance counselor or behavior interventionist, who had also attended the training, if the teacher was not available. Lessons were taught to the large group over the course of four months. Each lesson followed a similar format, with an introduction and lead-in discussion, a learning activity, and a wrap-up summary. Each lesson included probing questions for facilitating discussions so that students could find meaningful connections between the concepts taught and their own lives. Each lesson also included strategies for ways teachers could informally check for understanding, as well as suggestions for assessing learning. The first six lessons introduced the four zones, taught students how to recognize their zone, understand how their ability to regulate affects their day, and identify triggers that lead to particular zones. The middle six lessons provided activities to teach students various tools that are calming or alerting, including sensory supports, calming techniques, and thinking strategies. The final six lessons taught students why, when, and how to use the tools and

how to integrate the use of these tools into everyday life. Teachers received a folder containing all of the materials and handouts needed for each lesson from the researcher. The folder contained the lesson script, examples of follow-up and probing questions, and any materials needed to implement the lesson.

Fidelity of Implementation. In order to assess fidelity of implementation, 33% of the lessons taught in each classroom were observed by the researcher or another doctoral student. Lessons were observed approximately every other week to ensure lessons were sampled throughout the implementation period. The observer completed The *Zones of Regulation* Implementation & Fidelity Checklist (Figure 4). The checklist addressed four elements including preparation of materials, structure of implementation, facilitation of learning, and valuations/provision of feedback. The observer endorsed seven items yes or no (e.g., adult refers to visuals/reproducibles, adult gives verbal feedback to students), and rated seven items as high quality, adequate quality, or poor quality. The checklist then placed ratings in either a high fidelity category (yes for all elements, score of three across all elements) or adequate fidelity (yes for all elements, score of 2-3 on each element).

Figure 4. *Zones of Regulation Implementation and Fidelity Checklist*

Social Thinking® The Zones of Regulation® Implementation & Fidelity Checklist Name/Date _____

Clinician/Adult - Use this form to monitor your own implementation for adherence, quality, and level of exposure to match the form below.
Fidelity Observer(s) - Use this form to score implementation fidelity on four key elements. Scoring details at the bottom of this form.

Key Elements: 1) **Prepares** materials, 2) **Structures** implementation, 3) **Facilitates** learning, 4) **Evaluates** (provides feedback)

I am (circle one): **Clinician/Adult | Fidelity Observer**   Setting (circle one): **Whole class | Small group (2-4) | Individual**

ADHERENCE: Clinician/Adult accurately delivers program elements		Yes	No
PREPARES	Adult prepares visual materials in advance		
STRUCTURES	Adult structures lessons in recommended sequence (Lead-in, Activity, Wrap-up) as stated in curriculum		
	Adult refers to visuals/reproducibles		
FACILITATES	Adult uses curriculum to introduce vocabulary, visual supports and discussion points		
	Adult facilitates involvement/reflection of curriculum content through statements, discussion questions and activities		
EVALUATES	Adult gives verbal feedback to students		
	Adult checks (evaluates) student learning		

QUALITY: Clinician/Adult competently administers program elements

	3 (High quality)	2 (Adequate quality)	1 (Poor quality)
PREPARES	Adult gathers/prepares all recommended materials and supplemental visuals prior to implementation	Adult gathers/prepares most materials prior to implementation	Minimal or no materials/visual supplements prepared
STRUCTURES	Adult introduces content according to instructions in *The Road Map* found in the Zones curriculum. Lessons include a lead-in, activity, and wrap up	Adult introduces content according to the Zones Road Map, but lessons include activities and wrap up only	Adult introduces lessons from various parts of the curriculum using activities only
	Adult refers to visuals/reproducibles provided for discussion or completion of activity	Some or limited reference and/or use of visuals/reproducibles	No use or reference to visuals/reproducibles
FACILITATES	Adult introduces and uses key vocabulary, visuals and engages students in discussions, activities and lessons	Adult occasionally uses key vocabulary and facilitates some discussions/activities/lessons for students	Adult teaches with limited discussions and/or activities
	Adult engages students in learning by using a variety of prompts/techniques (modeling, role play, self-monitoring, self-reflection, reflective questioning, choices, visual supports)	Adult engages students through modeling and visual supports	Adult **tells** students to participate with limited encouragement for participation
EVALUATES	Adult uses positive and specific language (asks questions, offers choices, models) to guide and reinforce ("Let's go check your Zone," "What is a tool to help you care for your (Red) Zone?")	Adult uses positive language and occasionally uses specific language (asks questions, offers choices, models) to guide and reinforce	Negative or corrective language and use of vocabulary ("It is not okay to be in the Red Zone!" or "You need to be in the Green Zone!")
	Adult consistently uses recommended Ways to Check for Learning found in the curriculum (e.g., Zones Check-In, observation of student demonstrating targeted skills, student report, etc.)	Adult uses only one tool (e.g, Zones Check-In)	Adult does not check for student learning

EXPOSURE: Guidelines for minimum exposure based on the setting and types of learners	Yes	No
General Education Classroom: MINIMUM Two 20-minute sessions per week for concepts in each of the 18 lessons. Activities may be altered due to the grade level and some lesson concepts may require multiple sessions to cover content. Instruction should be spread over 5+ months with vocabulary, visuals and discussion points infused into everyday routines. Lessons may be taught out of order (see *Road Map*) and some lesson content may not be appropriate for some students given their ages/abilities. (Special needs inclusion students: Add one+ 30-minute priming session to introduce Zones framework and 6+ 30-minute follow-up sessions to review and extend activities.)		
Specialized Classroom (majority of learners are special needs students): MINIMUM Two 25-minute sessions per week **Specialized Small Group (2-4 students per group) or Individual Sessions:** MINIMUM One 30-minute session per week for concepts outlined in 18 lessons. Instruction should be spread over 6+ months with vocabulary, visuals and discussion points infused into everyday routines and across settings. Student performance and needs guide intervention. Lessons may be taught out of order and some lesson content may not be appropriate for some students given their abilities. Refer to the *Road Map* in the curriculum for suggested order.		

ALIGNMENT and ENGAGEMENT (Optional)   3 = solid examples/clearly evident, 2 = some evidence, 1 = no/minimal evidence

Differentiated instruction and developmental appropriateness	3	2	1
Student engagement and participation	3	2	1

High Fidelity: **Adherence** = Yes for all elements;   **Quality** = Score of 3 across all elements;   **Exposure** = Yes for setting   **Align/Engage** = Score of 3 for both
Adequate Fidelity: **Adherence** = Yes for all elements;   **Quality** = Score 2-3 on each element;   **Exposure** = Yes for setting   **Align/Engage** = Score of 2-3 on both

Control Condition. Teachers in classrooms randomly assigned to the control condition ($N = 6$) continued with their daily approach to managing and promoting positive classroom behavior throughout the duration of the study. The schools participating in this study were not implementing a structured strategy for addressing behavior and were not implementing any form of explicit instruction of SEL competencies.

Posttest. Following full implementation of the 18 lessons, teachers in both conditions completed the SSIS SEL Screener and the SEARS for each of their students. In addition they also administered the researcher-created SEL self-assessment to each of their students.

Social Validity. Following full implementation of the lessons, teachers from the treatment group completed a modified version of the Behavior Intervention Rating Scale (BIRS). The BIRS is a 24-item single-factor scale used to rate the teachers' perception of the acceptability of the intervention. Examples of items from the BIRS include, "I would suggest the use of this intervention to other teachers," and, "The intervention would be an appropriate intervention for a variety of children." Teachers responded to each item using a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). The modified survey included 12 of the original BIRS questions (see Appendix G). Students completed a ten-item researcher-created social validity assessment to rate the students' perception of the acceptability of the intervention. The assessment included statements such as, "Zones helped me get along better with my friends," and students put a checkmark next to a happy face (scored as 3), a sad face (scored as 1), or a neutral face

(scored as 2) to indicate their agreement with the statement. The assessment was read to students aloud by the classroom teacher or the researcher, and one on one assistance was provided as needed (See Appendix E).

Data Storage and Confidentiality Measures. Participating students were assigned identification numbers and all electronic data was stored on the researcher's password-protected files on her personal computer. Assessment measures were recorded using student identification numbers unique to this study. Only the researcher had access to student data. Encrypted backup files were kept on an external hard drive and kept in a locked cabinet. Data will be destroyed after five years per APA requirements.

Data Analysis. All statistical analyses were performed using JMP Version 14 (JMP, 2018). Descriptive statistics (means, standard deviations, and range) for all pretest and posttest scores were calculated. A three-pronged approach to data analysis was implemented. First, effect sizes for each of the treatment conditions were calculated using Cohen's *d.* Second, a series of dependent t-tests were run to determine if differences from retest to posttest ratings were statistically significant for any of the dependent variables across the any combination of conditions. Finally, a 2-by-2 mixed-design analysis of variance (ANOVA) was conducted to evaluate whether there were significant interaction effects between school poverty status and treatment condition (treatment, control) over time. Statistical significance was defined as $p < .05$.

CHAPTER FOUR

RESULTS

A quasi-experimental, wait-list comparison, non-equivalent group design with
pretest and posttest measures was employed to investigate the efficacy of a social-
emotional curriculum on the social-emotional competence skills of second grade
students, and to compare results across high poverty and low poverty schools. Twelve
participating classrooms were assigned to treatment and control conditions, and social-
emotional skills were assessed using teacher and student ratings during both pretest and
posttest. Statistical analyses were conducted to determine the statistical strength of the
intervention, if there were differences in pretest and posttest scores between treatment
and control conditions, and between high poverty and low poverty schools where the
intervention was implemented, and whether there were interaction effects for treatment
conditions and poverty status.

Descriptive statistics were derived for all of the dependent measures for both
pretest and posttest. The group means and standard deviations were calculated for the
pretest and posttest SSIS SEL Composite and the SEARS Composite, as well as for each
of the five SSIS SEL competency scores and the student self-rating score (Table 6). SSIS
SEL composite mean pretest scores across the four conditions ranged from 14.7 to 16.9,
and the SEARS composite pretest scores ranged from 49.2 to 56.9. SSIS SEL subscale
pretest scores ranged from 2.7 to 3.7. Student self-rating pretest scores ranged from 25.5
to 28.1. Across the four conditions, SSIS SEL composite and SEARS composite pretest
scores were highest for students in the low poverty treatment classrooms and low poverty

control classrooms, respectively. The highest pretest self-rating score, however, was for students in the high poverty treatment classroom. With the exception of self-rating scores, the students from the high poverty treatment classrooms demonstrated the lowest pretest scores when compared with the other conditions.

Table 8

Means and Standard Deviations of the Dependent Variables, Pretest and Posttest

	High Poverty				Low Poverty			
	Treatment		Control		Treatment		Control	
	Pretest	*Posttest*	*Pretest*	*Posttest*	*Pretest*	*Posttest*	*Pretest*	*Posttest*
Measure	*M*(SD)	*M*(SD)	*M*(SD)	*M*(SD)	*M*(SD)	*M*(SD)	*M*(SD)	*M*(SD)
SSIS SEL Composite	14.7(2.7)	16.3(.8)	16.0(3.8)	16.0(4.7)	16.9(1.6)	19.2(.7)	15.8(2.5)	15.4(.1)
Self Awareness	2.7(.4)	3.3(.2)	3.3(.6)	3.2(.8)	3.67(.1)	3.82(.2)	3.24(.6)	3.29(0)
Self-Management	2.8(.5)	3.1(.1)	3.2(.7)	3.0(.8)	3.34(.3)	3.82(.2)	2.97(.2)	3.00(0)
Social Awareness	3.1(.7)	3.2(.3)	3.2(.9)	3.3(1.0)	3.66(.1)	3.81(.1)	3.17(.7)	3.07(.2)
Relationship Skills	3.0(.6)	3.3(.2)	3.2(1.0)	3.3(1.1)	3.45(.2)	3.93(.2)	3.26(.8)	2.97(.3)
Responsible Decision Making	3.0(.7)	3.4(.2)	3.2(.7)	3.1(1.1)	3.15(.5)	3.84(.4)	3.16(.3)	3.10(.2)
SEARS Composite	49.2(8.1)	55.0(2.2)	50.5(7.4)	53.3(7.7)	51.9(.6)	57.1(.2)	56.9(2.)	53.1(6.9)
Self-Rating	28.4(.8)	27.4(.8)	27.2(1.0)	26.5(.9)	25.5(.7)	28.6(.5)	28.1(.1)	29.0(7)

Effect Size across Conditions. Effect size estimates were computed for each dependent measure for each of the four conditions using Cohen's (1988) recommended method of analysis and interpretation to evaluate practical meaning of score changes from

pretest to posttest. According to Cohen an effect size < .2 is considered not meaningful, .20 to .49 meaningful and small, .50 to .79 meaningful and medium, and > .80 large. The effect sizes across conditions are included in Table 7. Results indicated medium to large effect sizes in all dependent measures in the low poverty treatment groups, with effect sizes ranging from .83 to 10.69. In this treatment group the largest effect sizes occurred for SEARS Composite ($d = 10.69$), self-ratings ($d = 5.11$), and SSIS SEL Composite ($d = 1.81$). The largest effect sizes of the five SEL competency subscale scores occurred for relationship skills ($d = 2.79$) and responsible decision making ($d = 1.68$).

With the exception of the ratings for the social awareness subscale score and self-rating measure, all dependent measures in the high poverty treatment conditions were medium to large, ranging from .53 to 1.49. In this group the largest effect sizes were found for ratings in self-awareness ($d = 1.49$) and the SEARS Composite ($d = .97$). The effect size for social awareness ($d = .17$) was not meaningful.

In the control classrooms the only large effect size in was for the self-rating ($d = 1.67$). The remaining measures either had negative effect sizes, indicating that the teacher ratings actually decreased from pretest to posttest, or had small and not meaningful effects.

Table 9

Effect Sizes across School Poverty Level and Treatment Conditions

| | High Poverty | | Low Poverty | |
Measure	Treatment	Control	Treatment	Control
SSIS SEL Composite	0.75	-0.01	1.81*	-0.20
SSIS Self Awareness	1.49*	-0.14	0.83*	0.12
SSIS Self-Management	0.76	-0.16	1.66*	0.24
SSIS Social Awareness	0.17	0.09	1.35*	-0.20
SSIS Relationship Skills	0.53	0.12	2.79*	-0.48
Responsible Decision Making	0.69	-0.04	1.68*	-0.22
SEARS Composite	0.97*	0.37	10.69*	-0.76
Self-Rating	-0.79	-0.75	5.11*	1.67*

*Large effect size

Change in Group Means Pretest to Posttest. Following the effect size

calculations, a series of dependent-samples t-tests was run to determine if there were

significant changes in pretest to posttest scores in teacher-rated and self-rated social-

emotional competence skills for each of the four groups (high poverty intervention and

control; low poverty intervention and control). First, data were analyzed to test for t-test

assumptions. Results indicated that the differences from pretest to posttest scores for each

of the dependent measures were normally distributed, as assessed by Shapiro-Wilk's test

($p > .05$), and a boxplot revealed no outliers. The results of t-test analyses are included in

Table 8.

The analyses indicated that students' from the intervention classrooms showed

greater gains in teacher-rated social-emotional competence scores when compared with

students in the control conditions. From pretest to posttest, the mean scores for students in the treatment classrooms increased in all teacher-rated measures The largest gains were in the SEARS Composite scores for both the students in the high poverty treatment classrooms (+5.77) and the low poverty treatment classrooms (+5.18). The self-rating changes, however, differed across poverty status for the intervention classrooms. In the low poverty intervention classroom the student self-ratings increased from pretest to posttest (+3.14), but in the high poverty intervention classroom the student self-ratings decreased from pretest to posttest (-.88).

he mean score change in teacher ratings for students in the low poverty control classrooms decreased for all measures, with the exception of self-awareness and self-management, which increased slightly (+.05 and +.03 respectively). Decreases occurred in the EARS Composite (-3.85) and the SSIS SEL Composite (-.36). In the high poverty control classrooms, slight increases occurred in social awareness (+.08), relationship skills (+.12), and the SEARS composite (+.2.76). All other scores decreased from pretest to posttest.

Student self-rating score changes from pretest to posttest differed across poverty status and group assignment. Increases in self-ratings were found in both low poverty conditions (intervention and control), while decreases were found in both high poverty conditions. The largest change in self-ratings was found in the low poverty treatment classrooms (+3.14). Classrooms from the other three conditions either increased by less than one point (low poverty control) or decreased by less than one point (high poverty treatment and control).

While clinically significant changes were found across many measures, t-test results revealed statistically significant increases in just two measures. Statistically significant changes were found in the low poverty treatment condition for the SEARS Composite; $t(1.3) = 10.7$, $p = .03$; and for the self-rating; $t(1.8) = 5.1$, $p = .04$. These significant increases correspond with the measures with the largest effect sizes.

Table 10

Group Mean Changes Pretest to Posttest

Measure	High Poverty		Low Poverty	
	Treatment	Control	Treatment	Control
SSIS SEL Composite	(+1.51)	(-.06)	(+2.29)	(-.36)
Self-Awareness	(+.55)	(-.10)	(+.15)	(+.05)
Self-Management	(+.29)	(-.12)	(+.48)	(+.03)
Social Awareness	(+.09)	(+.08)	(+.15)	(-.10)
Relationship Skills	(+.22)	(+.12)	(+.48)	(-.29)
Responsible Decision Making	(+.35)	(-.04)	(+.69)	(-.06)
SEARS Composite	(+5.77)	(+2.76)	(+5.19)*	(-3.85)
Self-Rating	(-.88)	(-.71)	(+3.14)*	(+.86)

*$p<.05$

The final analysis conducted was a 2-by-2 mixed design analysis of variance

(ANOVA), which compares changes over time according to group membership. The

ANOVA was conducted to determine if there was a significant interaction effect over

time between treatment conditions (treatment, control) and school poverty level (high

poverty, low poverty) on social-emotional competence ratings. Due to inconsistency and

high variability of mean score changes across teachers within and between groups, the

overall ANOVA led to no further insights into the time effects across combinations of

treatment and poverty status. Therefore there was no statistically interaction between

poverty status and treatment condition found.

Treatment Fidelity Findings

In order to examine whether participating teachers implemented the SEL lessons

with fidelity, classroom observations were conducted and for each observation the

curriculum Implementation and Fidelity Checklist was completed (See Figure 4). Thirty-

six lessons across early, middle, and beginning phases of implementation were observed

by the researcher and a second doctoral student, totaling 33% of all lessons taught. Each

intervention classroom was observed at least four times. The fidelity checklist addressed

four elements, including preparation of materials, structure of implementation, facilitation

of learning, and evaluations/provision of feedback. The observer endorsed seven items

yes or no (e.g., adult refers to visuals/reproducibles, adult gives verbal feedback to

students), and rated seven items on a scale of 1 to 3, with three being high quality, two

adequate quality, and one poor quality. The items included information regarding

introducing lesson content according to directions, engaging students by using a variety

of prompts and techniques including modeling and self-reflection, and referring to visuals

provided for discussion or completion of lesson activities. Summaries of the fidelity

checklists revealed that all six intervention teachers delivered two lessons per week, with

each lesson lasting at least 20-minutes. Additionally, 91% (range of 88 to 93%) of the

lessons were considered implemented with high fidelity (yes for all elements, score of

three across all elements). The lesson components which were most frequently omitted

included using limited prompts to facilitate learning and using the program's

recommendations to check for student learning.

Social Validity Findings

All six of the teachers in the treatment group, as well as a guidance counselor who

helped deliver lessons, completed the social validity survey, a modified version of the

BIRS (Appendix G). On a six-point Likert scale, teachers rated the acceptability of the

SEL lessons very favorably, with an average rating of 5.44 (4.86 – 5.71).All seven

teachers endorsed the following items about the SEL lessons as "strongly agree" or

"agree:" it is a worthwhile intervention, I would suggest it to other teachers, this

curriculum is suitable for teaching emotional regulation, I would use this curriculum

again, this curriculum is a good method to enhance classroom management, the lessons

were effective in changing my student's behavior, and I found the lessons beneficial to

my students (see Table 11). Five teachers strongly agreed or agreed that the curriculum

was easy to implement, while one teacher slightly agreed with this statement and one

slightly disagreed.

Table 11

Frequency of teacher Social Validity Survey Responses

Item	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
Zones of Regulation…						
…is an acceptable intervention for an elementary classroom.	5	1	1	0	0	0
…was easy to implement.	2	3	1	1	0	0
…was effective in changing my students' behavior.	3	4	0	0	0	0
…did not result in negative side effects for my students.	5	2	0	0	0	0
…would be appropriate for a variety of students.	5	2	0	0	0	0
…is a good way to help with classroom management.	5	2	0	0	0	0
…was beneficial to my students.	5	2	0	0	0	0
Most teachers would find the time spent teaching Zones of Regulation worthwhile.	3	3	0	0	0	0
Most teachers would find Zones of Regulation suitable for teaching emotional regulation.	3	4	0	0	0	0
I would suggest Zones of Regulation to other teachers.	3	4	0	0	0	0
I would probably use Zones of Regulation in my classroom again.	4	3	0	0	0	0
I liked the procedures used in Zones of Regulation.	3	3	1	0	0	0

One-hundred four of the 110 (95%) students in the intervention classrooms completed a seven-item, researcher-created social validity survey that used a 3-point Likert scale modified for young children (Appendix E). A majority (73%) of students reported liking the curriculum, and approximately two-thirds reported that the lessons helped them get along better with their friends, do better in school, control their feelings, understand how other people feel, solve problems, and taught them new feeling words. Overall the average rating was 2.5, with individual item average ratings ranging from 2.5 to 2.7.

CHAPTER FIVE

DICUSSION

The purpose of the current study was to investigate the effectiveness of a classroom-based social-emotional learning curriculum, *Zones of Regulation*, on the teacher-rated and self-rated social-emotional competence skills of second grade students across high poverty and low poverty schools. Social emotional learning is the process through which students acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, feel and show empathy for others, establish and maintain positive relationships, set and achieve positive goals, and make responsible decisions (CASEL, 2017). These SEL competencies can be taught to students using evidence-based SEL curricula. Research suggests that students that are exposed to SEL programming experience a host of positive outcomes, including stronger SEL skills, better classroom behavior, and improved academic performance (Durlak et al., 2011; Jones, 2015), and that these outcomes are maintained over time (Taylor et al., 2017). SEL programs that contain a sequenced set of lessons, that provide students opportunity to practice newly learned skills, that devote specific time and attention to skill development, and that use explicit instruction to teach SEL skills are most effective (Durlak et al., 2010, 2011).

The current study explored three main research questions, including what is the impact of the SEL curriculum on knowledge and application of social-emotional competence skills in elementary-aged students, as measured by (a) teacher ratings, (b) student self-ratings, and (c) across high poverty and low poverty schools. While there have been numerous studies measuring the effectiveness of classroom-based SEL

interventions and their efficacy in improving social-emotional competence, to date there have been no studies investigating the effectiveness of *Zones of Regulation*. This is concerning considering the curriculum is currently being implemented in schools in every U.S. state, across six continents, and teachers from countries such as Canada, Australia, New Zealand, Germany, Uruguay, Tasmania, and India have attended trainings on how to implement the curriculum.

Overall results indicated that the SEL instruction resulted in improved student SEL skills, as measured by teacher ratings, in both high and low poverty classrooms. Scores from the control classrooms, however, either increased minimally or decreased from pretest to posttest. The changes from pretest to posttest, based on student self-ratings, demonstrated more variability. Self rating scores from both intervention and control low poverty classrooms increased from pretest to posttest, while scores from high poverty intervention and control classrooms decreased from pretest to posttest.

<div align="center">

SEL Instruction

</div>

Impact on Teacher-Rated SEL Skills

Results of the current study support previous research (e.g., DiPerna, 2018; Low et al., 2015) that students in intervention classrooms where SEL skills are taught using explicit instructional strategies demonstrated improved skills, as measured by teacher ratings, relative to students in control classrooms. Intervention teacher ratings of student SEL skills increased from pretest to posttest in all measures, which included SSIS SEL and SEARS composites as well as SSIS SEL competency subscale scores. This is in contrast to ratings from teachers in the control classrooms, where scores either

demonstrated very minimal increases, or actually decreased, from pretest to posttest. SEL instruction resulted in medium to large effect sizes for all but one of the five competencies (social awareness) across all intervention classrooms. Effect sizes in control classrooms, however, were most often negative, and scores decreased from pretest to posttest in these classrooms. This suggests that in classrooms where social-emotional competence is not being taught, SEL skills might not just remain stable, but may actual decrease in level over time. This is a concerning finding, since previous research has found that students who demonstrate SEL skill deficits are more likely to experience conduct problems, emotional distress, and in adulthood are more likely to experience co-morbid diagnoses of substance abuse and mental disorders (Durlak et al., 2011; Payton et al., 2008). When neglecting to explicitly teach students SEL skills, students may not only be less likely to experience positive outcomes such as graduating from college and obtaining stable employment, but they might also be more likely to experience negative outcomes such as involvement with law enforcement and suffering dealing with mental illness.

Impact on student self-ratings of SEL Skills.

Student self-ratings of their SEL skills showed some variability across intervention and control groups, which is consistent with previous research findings (Hennessey, 2007; Merrell et al., 2008). Other studies that have used student self-ratings to measure SEL gains have found large effects when SEL content knowledge is measured (Merrell et al., 2008), but insignificant effects when students are asked to rate their actual SEL skills, rather than just the content knowledge of the SEL lessons (Hennessey, 2007).

Since a majority of research addressing SEL instruction and its impact on student SEL skill development focuses on teacher-rated SEL and/or classroom observations (e.g., Brackett et al., 2012; Cook et al., 2015; Ryan, et al., 2016), more research is needed to better understand the impact on students' rating of their skills. The results of the current study indicated that when students in low poverty classrooms were taught SEL skills, their self-ratings increased significantly from pretest to posttest. However this was not the case in high poverty classrooms, where self-ratings actually decreased from pretest to posttest. One explanation for this difference across intervention classrooms is that the students form the low poverty treatment classrooms had the lowest pretest self-ratings; in fact their pretest scores were almost three full points lower than the pretest scores in the high poverty intervention classrooms. This may have allowed for larger pretest to posttest gains. This coincides with other research investigating differential SEL impact based on pretest score differences (Low et al., 2015), which found that when students have a pretest score in an acceptable range, the SEL measure was less likely to show improvement. Conversely, when students have low baseline or pretest scores, the benefits of SEL instruction is more pronounced. In other words, in the Low et al. (2015) study, researchers found that the SEL program produced larger differences between conditions among students with initially lower levels of prosocial behavior versus higher level of prosocial behavior. Since in the current study the low poverty treatment classroom had among the lowest pretest scores of any condition, it might be expected that they would show larger gains than the high poverty classroom, whose pretest scores were the highest of any group.

Another finding of interest was that in the control classrooms, self-rating scores increased in the low poverty condition but decreased in the high poverty condition. One explanation for this finding is that students in the control, low poverty classroom demonstrated high pretest scores. Researchers have found this is sometimes the case that students not participating in SEL instruction tend to present an overly positive self view of their skill level when compared with students receiving SEL instruction (Weissberg & Greenberg, 1998). The current self-rating results put into question whether students this age have appropriate insight into their own SEL skills to be able to accurately rate them.

Impact across High Poverty and Low Poverty Schools

There was a great deal of variability in treatment effects across high poverty and low poverty schools for all measures. Overall, the SEL instruction was effective across low and high poverty classrooms, but scores suggest it was more effective in low poverty schools. This was an unexpected finding, since previous research has indicated that students from low-income families often have more social skills deficits than students from medium or high-income homes (McLelland et al., 2017). Social skill deficits likely translate to lower pretest scores, which research has previously suggested result in greater improvements from pretest to posttest following SEL instruction (Low, 2015). However, in the current study, even though the students in the high poverty intervention classrooms demonstrated lower pretest teacher-rated scores, the students in the low poverty classrooms demonstrated greater gains from pretest to posttest.

In examining pretest to posttest score changes of the teacher-rated SEL competencies, differences between high poverty and low poverty intervention groups

emerged. Within the high poverty treatment classroom, the largest gain from pretest to posttest was found in the self-awareness, suggesting that in these classrooms the lessons were most effective in teaching students how to identify and recognize emotions. In the low poverty classroom, however, the largest pretest to posttest gains were found in responsible decision making, which means the SEL lessons were most effective in teaching students to evaluate and reflect on decisions.

Treatment fidelity and social validity findings. The current study also examined the teachers' ability to implement the lessons with fidelity, as well as their perceptions of the curriculum. Fidelity of implementation is a critical aspect of SEL programming, since research suggests that the quality of implementation has an impact on the effectiveness of the programming (Greenberg et al., 2005). The SEL curriculum implemented in the current study is an increasingly popular SEL program that, as opposed to many of the evidence-based SEL programs available, is inexpensive and requires minimal training, an important aspect of this study was to collect data on treatment fidelity and social validity. Treatment fidelity was assessed through observation and completion of the Implementation and Fidelity Checklist; 33% of the lessons were observed (Figure 4). Results indicated that the lessons were implemented with a high degree of fidelity. The high treatment fidelity results are likely somewhat attributable to features of the curriculum itself, as well as some of the methods specific to this study. The lessons are mostly scripted, and all follow the same format of a lead-in, activity, and wrap-up. This is an important aspect to this curriculum, since previous research studies have suggested that programs that include lessons that are coordinated and that use step-

by-step training approaches are most effective (Durlak et al., 2010, 2011). All the required visuals and handouts are included on the flash drive that accompanies the book, and for this study the researcher made all necessary copies and provided them in lesson folders for each teacher. Any materials needed (e.g., markers, construction paper, story books, bingo markers) were also provided to the teachers, so that preparation for each lesson was minimal. These factors likely led to the high degree of fidelity of implementation, especially on elements related to preparation and structure. In addition, teachers were aware that they would be observed, which may also have increased treatment integrity.

These same factors may also have influenced teacher perceptions about the curriculum. All of the teachers agreed that the curriculum was worthwhile, beneficial to students, a good method to enhance classroom management, and that they would recommend it to other teachers. Five of the seven agreed that it was easy to implement. The fact that most of the preparation of the lessons was taken care of by the researcher might have made the teachers feel more favorably toward the curriculum.

Limitations and Recommendations for Future Research

One potential limit to this study is selection bias. Random selection and assignment to conditions was not possible, since schools that are in close proximity to the university and those that have teachers willing to volunteer to participate were selected. Also, in order to answer the research question regarding the impact of the intervention across high poverty and low poverty schools, schools that met these criteria need to be recruited. Within each of the participating schools, discussions were held between

administration and teachers to determine who would be assigned to treatment and control conditions. An attempt to minimize the selection bias was made by comparing pretest and posttest gains between groups, rather than comparing posttest scores from one group to the posttest scores of another group.

A second limitation to the study is potential diffusion of treatment. In order to be able to compare the impact of the SEL lessons across schools, it was necessary to have both control and treatment classrooms within the same school. Only teachers in the treatment groups received training and implemented the lessons, however it is possible that students in the treatment classrooms used language specific to the SEL lessons in other school settings and inadvertently dispersed parts of the curriculum to teachers and students in the control groups. Future studies might assign treatment and control schools, rather than classrooms within schools, and match each school on a set of demographics to control for differences.

A third limitation of the current study is the reliance on rating scales to measure social-emotional competence. This is problematic for two reasons. One, without corroborating rating scale results with observational data, there is no way of knowing if the ratings reflect actual behaviors that correspond with the SEL competencies. For example, a teacher might rate a student has having strong self-management skills, however observational data might provide information about whether the student controls impulses by waiting his turn to speak, maintains motivation and perseveres when tasks become difficult, etc. The second problem is the lack of sound psychometric data for the student self-ratings. The self-rating used for the current study was created by the

researcher, since after an exhaustive search an appropriate student self-rating scale was not found. It is unclear if the self-rating used for this study correlated with teacher ratings, or if students had a good understanding of what exactly was being asked. It is possible that second graders are too young to have insight into their own social-emotional competence. This limitation could be addressed by validating the self-rating scale used in this study. Future research studies should consider collecting other sources of data, including parent ratings, which would help compare ratings across settings, as well as behavioral observational data, achievement data, and student discipline data. Furthermore, future studies should examine if changes as a result of the lessons are maintained over time. Research indicates that the most effective SEL programs demonstrate positive follow up outcomes anywhere from six months to 18 years post-intervention (Taylor et al., 2017). As a result of time constraints and the ending of the school year, the current study only investigated posttest ratings immediately following the completion of all 18 lessons.

This is the first study to investigate the effectiveness of Zones of Regulation on the social-emotional competence of second grade students. The curriculum was implemented at the classroom level, and the mean scores of teacher and self-ratings were evaluated. Other evidence-based SEL programs have been evaluated and found effective at different tiers of instruction and with targeted groups of students (Payton et al., 2008). Future replications and extensions of this study could examine the efficacy with other populations, including students identified as needing Tier 2 supports, as well as students with social and emotional disabilities such as autism and emotional disturbance.

APPENDICES

Information about Being in a Research Study

Clemson University

Effects of a Social Skills Curriculum on the Social/Emotional Competence of Elementary Students

Description of the Study and Your Part in It

You are invited to participate in a research project conducted by Dr. Joe Ryan and Michelle Dunn, Ed.S. The purpose of this project is to investigate the effectiveness of a social skills curriculum (*Zones of Regulation)* intended to teach students strategies to regulate their emotions.

Your participation will involve receiving 2 hours of training on the Zones of Regulation, a social skills curriculum used to teach students to understand and recognize their emotions. You will then be asked to teach each of the 18 lessons during the school day. Each lesson takes approximately 30 minutes, and 1-2 lessons will be taught per week. Prior to implementing the lessons and following the implementation, you will be asked to complete two student rating scales and administer a student self-assessment. The total amount of time for your participation will be approximately 25 hours over the course of the semester.

Risks and Discomforts

There are no known risks associated with this research.

Possible Benefits

The intervention may help your students gain age-appropriate social skills, which in turn may result in improved social/emotional competence, understanding of emotions, and understanding how to better mange them.

Incentives

N/A

Protection of Privacy and Confidentiality

We will do everything we can to protect your privacy. Your identity will not be revealed in any publication or presentation that might result from this study.

Choosing to Be in the Study

You may choose not to take part and you may choose to stop taking part at any time. You will not be punished in any way if you decide not to be in the study or to stop taking part in the study. If you choose to stop taking part in this study, the information you have already provided will be kept in a confidential manner.

Contact Information

If you have any questions or concerns about your rights in this research study, please contact the Clemson University Office of Research Compliance (ORC) at 864-656-0636 or irb@clemson.edu. If you are outside of the Upstate South Carolina area, please use the ORC's toll-free number, 866-297-3071. The Clemson ORC is a group of people who independently review research. The Clemson ORC will not be able to answer some study-specific questions. However, you may contact the Clemson ORC if the research staff cannot be reached or if you wish to speak with someone other than the research staff.

If you have any study related questions or if any problems arise, please contact Dr. Joe Ryan at Clemson University at 864-656-1531.

Information Concerning Participation in a Research Study

Clemson University

Effects of a Social Skills Curriculum on the Social/Emotional Competence of Elementary Students

Description of the Research and Your Child's Part in it

Your child is invited to participate in a research project conducted by Dr. Joe Ryan and Michelle Dunn. The purpose of this project is to investigate the effectiveness of a curriculum intended to teach students strategies to regulate their emotions. The program is called Zones of Regulation.

Your child's participation will involve receiving instruction in self-regulation, which is also referred to as self-control and self-management. There are 18 lessons that will be taught by your child's teacher or guidance counselor during the school day. Each lesson takes approximately 15-30 minutes, and 2 lessons will be taught per week. Before and after the lessons your child will be asked to fill out a rating scale about managing emotions. When the lessons have all been taught your child will be asked to complete a survey about their feelings about Zones of Regulation. The total amount of time for your child's participation will be approximately ten hours during a five-month period.

Risks and Discomforts

There are no known risks associated with this research.

Potential Benefits

The intervention may help your child gain age-appropriate social skills, which in turn may result in improved social/emotional competence, understanding of emotions, and understanding how to better mange them.

Incentives
n/a

Alternatives to Research Participation
n/a

Protection of Confidentiality

We will do everything we can to protect your child's privacy. Students will be given a pseudonym and information will only be shared with your child's teacher and the research team. Hence, your child's identity will not be revealed in any publication that might result from this study, nor will it be stored in any records we keep.

We might be required to share the information we collect from you with the Clemson University Office of Research Compliance and the federal Office for Human Research Protections. If this happens, the information would only be used to find out if we ran this study properly and protected your rights in the study.

Choosing to Be in the Study

Your child's participation in this research study is voluntary. You may choose for your child to not to participate and you may withdraw your consent to allow your child to participate at any time. Your child will not be penalized in any way should you decide not to allow your child to participate or to withdraw from this study.

Contact Information

If you have any questions or concerns about this study or if any problems arise, please contact Dr. Joe Ryan at Clemson University at 864-656-1531. If you have any questions or concerns about your rights as a research participant, please contact the Clemson University Office of Research Compliance (ORC) at 864-656-6460 or irb@clemson.edu. If you are outside of the Upstate South Carolina area, please use the ORC's toll-free number, 866-297-3071.

Consent

Please read the section below and check the box only if you <u>DO NOT</u> want your child to take part in the study. If you check the box "no" below, sign this form and return it to your child's school.

Thank you.
Student's name (Please Print):_____ **Grade:** _____

I have read this form and know what the study is about.
☐ NO, I do not give permission, my child MAY NOT take part in the study.
Parent's signature: _____ **Date:** ___/___/_____

Phone number: _____

Information Concerning Participation in a Research Study

Clemson University

Effects of a Social Skills Curriculum on the Social/Emotional Competence of Elementary Students

Description of the Research and Your Child's Part in it

Your child is invited to participate in a research project conducted by Dr. Joe Ryan and Michelle Dunn. The purpose of this project is to investigate the effectiveness of a curriculum intended to teach students strategies to regulate their emotions. The program is called Zones of Regulation. The Zones of Regulation consists of 18 lessons that teach self-control and self-management.

Your child will be asked to fill out a rating scale about managing emotions, once in January/early February and once again in the spring. The total amount of time for your child's participation will be approximately one hour during a five-month period. At the conclusion of the study your child's teacher will have access to all of the lessons and materials for the Zones of Regulation and may decide to use the program in the classroom. If that is the case you will be notified.

Risks and Discomforts

There are no known risks associated with this research.

Potential Benefits

Your child's teacher may decide to teach Zones of Regulation lessons, which may help your child gain age-appropriate social skills. This in turn may result in improved social/emotional competence, understanding of emotions, and understanding how to better mange them.

Incentives
n/a

Alternatives to Research Participation
n/a

Protection of Confidentiality

We will do everything we can to protect your child's privacy. Students will be given a pseudonym and information will only be shared with your child's teacher and the

research team. Hence, your child's identity will not be revealed in any publication that might result from this study, nor will it be stored in any records we keep.

We might be required to share the information we collect from you with the Clemson University Office of Research Compliance and the federal Office for Human Research Protections. If this happens, the information would only be used to find out if we ran this study properly and protected your rights in the study.
Choosing to Be in the Study

Your child's participation in this research study is voluntary. You may choose for your child to not to participate and you may withdraw your consent to allow your child to participate at any time. Your child will not be penalized in any way should you decide not to allow your child to participate or to withdraw from this study.

Contact Information

If you have any questions or concerns about this study or if any problems arise, please contact Dr. Joe Ryan at Clemson University at 864-656-1531. If you have any questions or concerns about your rights as a research participant, please contact the Clemson University Office of Research Compliance (ORC) at 864-656-6460 or irb@clemson.edu. If you are outside of the Upstate South Carolina area, please use the ORC's toll-free number, 866-297-3071.

Consent

Please read the section below and check the box only if you <u>DO NOT</u> want your child to take part in the study. If you check the box "no" below, sign this form and return it to your child's school.

Thank you.
Student's name (Please Print):_____ **Grade:** _____

I have read this form and know what the study is about.

☐ NO, I do not give permission, my child MAY NOT take part in the study.

Parent's signature: _____ **Date:** ___/___/_____

Phone number: _____

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Appendix D: Student Assent

Clemson University
Assent to Be in a Research Study

Social Skills Lessons

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You are being invited to be in a research study by Dr. Ryan and Michelle Dunn at Clemson University.

Why are we conducting this research?
We are conducting research to study if social skills lessons are effective in teaching students ways to understand and manage their emotions.

What will I have to do?
You will participate in 18 lessons on social skills taught by your teacher. You will asked to complete short assessments on managing emotions before the lessons and after the lessons. After all of the lessons have been taught you will be asked to answer questions about how you feel about the lessons.

Are there any potential harms or risks if I take part in the research?
There are no risks, or negative things, that may happen as a result of this research.

Are there any benefits if I take part in the research?
The lessons may help you get along with others and understand how to manage your emotions.

Will I receive any gifts for taking part in the research?
You will not receive any gifts for participating in the research study.

Do I have to take part in the research?
Your participation in this research is voluntary. You may choose not to participate or choose to stop participation at any time. You will not be penalized in any way.

What if I have questions?
You can ask questions at any time during the research. You can call Dr. Ryan at Clemson University (864-656-1531) if you have questions.

By being in this study, you are saying that you were given a copy of this form, have read the form, been allowed to ask any questions, and voluntarily choose to take part in the research.

Appendix E: Student Social Validity

Zones of Regulation – Put a ✓ next to your answer.

I liked Zones of Regulation	😊	😐	🙁
Zones helped me get along better with my friends.	😊	😐	🙁
Zones of Regulation helped me do better in school.	😊	😐	🙁
Zones of Regulation helped me control my feelings.	😊	😐	🙁
Zones of Regulation taught me new feelings words.	😊	😐	🙁
Zones of Regulation helped me understand how other people feel.	😊	😐	🙁
Zones of Regulation helped me solve problems better.	😊	😐	🙁

Appendix F: Student Self-Rating

I want you to answer some questions about how hard or how easy some things are for you. There are no right or wrong answers so just answer each question honestly. Raise your hand if you need help understanding any of the questions.

1 = Very Hard

2 = Hard

3 = Easy

4 = Very Easy

1. Calming myself down when I'm angry. _____

2. Knowing how people feel by looking at their face. _____

3. Knowing when someone needs help. _____

4. Getting through something even if I'm frustrated. _____

5. Being patient even when I'm excited. _____

6. Getting along with my classmates. _____

7. Thinking about what might happen before making a decision. _____
8. Asking for help. _____

9. Behaving when the teacher leaves the room. _____

10. Taking turns in a game. _____

Intervention Rating Profile

The purpose of this questionnaire is to obtain information that will aid in the selection of classroom interventions. Teachers of children with behavior problems will use these interventions. Please circle the number which best describes your agreement or disagreement with each statement.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. This is an acceptable intervention for an elementary classroom.						
2. Most teachers would find this intervention appropriate for elementary-age students.						
3. This intervention was easy to implement in my classroom.						
4. This intervention was effective in changing my students' behavior.						
5. I would suggest the use of this intervention to other teachers.						
6. Most teachers would find this intervention suitable for to teaching emotional regulation.						
7. I would be willing to use this intervention in the classroom setting again.						
8. This intervention would not result in negative side effects for the student.						
9. This intervention would be appropriate for a variety of children.						
10. I like the procedures used in this intervention.						
11. This intervention was a good way to help with classroom management.						
12. Overall, this intervention beneficial to my students.						

Adapted from: Witt, J. C. and Elliott, S. N. (1985). Acceptability of classroom intervention strategies. In T. R. Kratochwill (Ed.), Advances in School Psychology, 4, 251-288. Mahwah, NJ: Erlbaum.

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