A PILOT STUDY OF *STRONG START*: PRELIMINARY EVIDENCE OF FEASIBILIY AND EFFICACY OF SOCIAL AND EMOTIONAL LEARNING IN PRESCHOOL

by

SARAH FELVER

A DISSERTATION

Presented to the Department of Special Education and Clinical Sciences
and the Graduate School of the University of Oregon
in partial fulfillment of the requirements
for the degree of
Doctor of Philosophy

June 2013

DISSERTATION APPROVAL PAGE

Student: Sarah Felver

Title: A Pilot Study of *Strong Start*: Preliminary Evidence of Feasibility and Efficacy of Social and Emotional Learning in Preschool

This dissertation has been accepted and approved in partial fulfillment of the requirements for the Doctor of Philosophy degree in the Department of Special Education and Clinical Sciences by:

Dr. Laura Lee McIntyre	Chairperson
Dr. Jeffrey Sprague	Member
Dr. Brigid Flannery	Member
Dr. Jeff Todahl	Outside Member

and

Kimberly Andrews Espy	Vice President for Research & Innovation/Dean of the Graduate School

Original approval signatures are on file with the University of Oregon Graduate School.

Degree awarded June 2013

DISSERTATION ABSTRACT

Sarah Felver

Doctor of Philosophy

Department of Special Education and Clinical Sciences

June 2013

Title: A Pilot Study of *Strong Start*: Preliminary Evidence of Feasibility and Efficacy of Social and Emotional Learning in Preschool

Social and emotional competencies have received increased attention as important components of school readiness for young children. Universal programs incorporating social and emotional learning (SEL) instruction for all preschool students are needed given the relation between social and emotional competencies in early childhood and later developmental outcomes. The *Strong Start: Pre-K* program is a low-cost, developmentally tailored educational curriculum targeting important social and emotional knowledge and skills. Although this program is part of an evidence-based SEL curriculum (*Strong Kids*), the preschool component lacks empirical investigation. This pilot study used a single group pre-post within-subjects design to investigate the feasibility and acceptability of implementation of *Strong Start: Pre-K* and the impact of the curriculum on social and emotional knowledge and skills of 39 students in two preschool classrooms. Feasibility and acceptability were evaluated through descriptive data on social validity and treatment integrity. In addition, preliminary evidence of effects was established through analysis of observed child and teacher behavior. Results suggest that teachers and students find the *Strong Start: Pre-K* curriculum to be highly acceptable and that teachers are able to implement the curriculum with moderate to high levels of fidelity with limited training.

Preliminary evidence of effects suggests that children who participated in the *Strong Start: Pre-K* curriculum demonstrated increases in social and emotional strengths and resiliencies as well as increases in social and emotional knowledge following exposure to the *Strong Start: Pre-K* curriculum. Direct observations of child behavior also demonstrated increases in pro-social behavior and decreases in disruptive behavior.

CURRICULUM VITAE

NAME OF AUTHOR: Sarah Felver

GRADUATE AND UNDERGRADUATE SCHOOLS ATTENDED:

University of Oregon, Eugene, OR
Brandeis University, Waltham, MA

DEGREES AWARDED:

Doctor of Philosophy, School Psychology, 2013, University of Oregon
Master of Science, Special Education, 2010, University of Oregon
Bachelor of Arts, Sociology, 2004, Brandeis University

AREAS OF SPECIAL INTEREST:

Social and Emotional Learning
School-Based Mental Health Prevention and Intervention
Mental Health Promotion of Young Children

PROFESSIONAL EXPERIENCE:

Child and Family Therapist, Oregon Social Learning Center, 2011-2012

Practicum Teaching Supervisor, The University of Oregon, 2011-2012

Graduate Teaching Fellowship, The University of Oregon, 2008-2011

Positive Behavior Support Specialist, The Aaron School, 2007-2008

Clinical Research Assistant, Mount Sinai School of Medicine, 2006-2007

Children's Program Coordinator, Homeward Bound of Marin, 2005

Community Education Program Coordinator, Project MANA, 2004-2005

GRANTS, AWARDS, AND HONORS:

Liz Gullion Scholarship Award, Oregon School Psychologists Association, 2011

Oregon Resiliency Project Travel Award, The University of Oregon, 2010

DIBELS Student Support Award, The University of Oregon, 2009, 2010, 2011

AmeriCorps Education Award, AmeriCorps, 2005

Louis D. Brandeis Essay Award, Brandeis University, 2004

PUBLICATIONS:

Felver-Gant, J., & Levi, S. (2012). *Evidence-Based School Mental Health Services: A Book Review.* Journal of Child and Family Studies.

ACKNOWLEDGMENTS

I wish to express sincere appreciation to Drs. Sprague, Flannery, and Todahl for their assistance in the preparation of this manuscript. In addition, special thanks are due to Dr. Laura Lee McIntyre, whose valuable guidance and support was instrumental in the realization of this work. I also want to thank the preschool director, teachers, and students who participated in this study. Thank you to my wonderful research assistants who helped collect all of my study data: Emily Barrett, Hannah Barton, Jenna Borowski, Vinnie Campbell, Kelly Collins, Monique Dixon, and Wayne Wilson. Thank you to my friends and family, especially my mom, dad, sisters, and brother. Lastly, thank you to my husband, Josh, and our Finn and Maya, for providing endless support throughout the development and implementation of this project.

This project is dedicated to Dr. Ken Merrell for his guidance and mentorship. He will continue to be a source of great inspiration for my work.

TABLE OF CONTENTS

Chapter Page

Chapter Page

Chapter Page

LIST OF FIGURES

Figure Page

LIST OF TABLES

Table Page

CHAPTER I

INTRODUCTION

Growing evidence from developmental research over the past several decades has drawn attention to the social and emotional needs of young children and the long-term effects of early childhood experiences. There has been an increased focus on school readiness and supporting children in developing not only the cognitive skills needed to be successful in elementary school, but also the prerequisite social, emotional, and behavioral competencies (e.g., self-regulation, social competence, attention skills, and emotion knowledge; Bowman, Donovan, & Burns, 2000; Shonkoff & Phillips, 2000). The competencies young children gain during these years form the foundation on which they will enter school and develop and build future competencies (Fantuzzo et al., 2007; Joseph & Strain, 2003).

Although developing these skills is a critical task of the early childhood years, research shows that many young children enter school without the basic abilities to succeed in kindergarten. A study conducted by the National Center for Early Development and Learning found that 46% of Kindergarten teachers reported that the majority of their students lacked the necessary social and emotional competencies needed to do well in the classroom (West, Denton, & Reaney, 2001). In order to successfully meet school expectations, students must regulate their behaviors, engage in goal directed activities, sustain behavioral inhibition, comply with rules, and maintain positive relationships with peers and teachers (Joseph & Strain, 2003). Evidence suggests that young children who have difficulty following directions, paying attention, getting along with others, and coping with negative emotions perform more poorly in school than peers

who do not experience these difficulties (Alexander, Entwistle, & Dauber, 1993; Arnold et al., 1999; Joseph & Strain, 2003; Ladd, Kochendorfer & Coleman, 1997; McLelland, Morrison & Holmes, 2000; O'Neil, Welsh, Parke, Wang & Strand, 1997).

Without intervention, these difficulties can lead to more significant and stable emotional and behavioral problems throughout childhood (Campbell 1995; Olsen & Hoza, 1993). Between 50 and 70% of young children who exhibit challenging behavior problems are found to have significant behavioral difficulties up to six years later (White, Moffit, Earls, Robins, & Silva, 1990). For many of these children, early onset behavior problems can lead to academic failure, grade retention, substance abuse, school drop out, and difficulties with peers as they develop into adolescence (Gadow & Nolan, 2002; Jimerson, Egeland, Sroufe & Carlson, 2000; Kuperschmidt & Coie, 1990; Mendez, Fantuzzo, & Ciccetti, 2002; Miller-Johnson, Coie, Maumary-Gremaud, Lochman, & Terry, 1999; Parker & Asher, 1987; Vitaro, Laroque, Janosz & Tremblay, 2001). Given the stability of early behavior problems over time and their negative impact on multiple domains of functioning, primary and secondary prevention for young children who lack social and emotional competence and exhibit disruptive behavior problems is essential.

A growing body of research suggests that social and emotional competencies can be supported through the use of systematic instructional approaches in the classroom (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Bierman et al., 2008). Social and Emotional Learning (SEL) has been broadly defined by the Collaborative for Academic, Social, and Emotional Learning (CASEL) as the process of developing the skills needed to recognize and manage emotions, developing caring and concern for others, making responsible decisions, building positive relationships, and dealing with

challenging situations appropriately (CASEL, 2008). In the classroom SEL may be enhanced through positive and supportive relationships between students and teachers, classroom management procedures, as well as explicit instruction through published curricula. Two large-scale meta-analyses recently conducted by CASEL found a number of positive effects from SEL programs on students' social and emotional skills, social behavior, emotional and behavior difficulties, academic performance, and attitudes towards self, others, and school (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Payton et al., 2008). However, only recently has there been increasing attention paid towards the creation of developmentally appropriate SEL programs that target young children.

Among the SEL programs for young children, variability exists in how the programs are designed. Some programs (e.g., I Can Problem Solve, Shure, 2000) target specific skill areas, while other programs (e.g., PATHS, Domitrovich, Greenberg, Kusche, & Cortes, 2004; Dinosaur School curriculum as part of the Incredible Years series, Webster-Stratton & Reid, 2004) are more comprehensive (Domitrovich, Cortes, & Greenberg, 2007). The findings from evaluation studies are promising and suggest that these interventions have the ability to improve children's emotion knowledge, social skills, and social problem solving (Izard et al., 2004; Shure & Spivak, 1982; Webster-Stratton & Reid, 2004). For example, in the only published study of The Preschool PATHS program, preschool children in the treatment group were found to have significantly greater emotion knowledge and social and emotional competence than children in the control group (Domitrovich et al., 2007). However, a number of

limitations within the small body of research in this area exist that limit the conclusions that can be drawn from these studies.

Joseph and Strain (2003) recently conducted a review of SEL programs for young children. Programs were evaluated for adoption based on a number of criteria including: treatment generalization and maintenance, social validity, program acceptability, independent replication across varied samples, and evidence of high treatment fidelity. Although all of the programs demonstrated positive findings (i.e., increases in pro-social skills and behavior and/or decreases in problem behavior), not one of the programs met all criteria for adoption. In addition, methods for measuring treatment outcomes varied and few programs were evaluated using direct observations of child behavior. None of the reported studies examined changes in teacher behavior. Acceptability of the program was addressed in two of the ten studies and social validity outcomes were examined in only one study. Among the ten studies there was significant variability in terms of cost, materials, hours per week, and number of lessons implemented (e.g., between 12 and 140 lessons and between 10 and 120 minutes per week). Furthermore, all studies in the review targeted at-risk populations in their samples.

In addition to the weaknesses noted by Joseph and Strain (2003), another major limitation of SEL research is the current lack of high-quality assessment tools developed specifically with SEL skills in mind and validated exclusively for that purpose (Merrell & Gueldner, 2010). Moreover, most of the existing instruments used to measure social and emotional competencies, are pathology oriented, in that they emphasize problems and often neglect student strengths and assets (Merrell 2008, Merrell & Gueldner, 2010). As a result, several measurement problems arise when researchers or practitioners select

measures to evaluate SEL programs. For example, tools may be utilized that measure positive characteristics (e.g., social skills or self-concept measures) but do not fully capture the content of the SEL program. Another measurement problem surrounds evaluating a positive, strength-based program by using a deficit-based psychopathology scale that measures reductions of problem symptoms (Merrell & Gueldner, 2010). This latter measurement issue is particularly problematic when studying universal-level programs with typically developing young children. In universal-level programs, problem behavior may not be at the level that requires targeted assessments. Furthermore, the focus of early childhood incorporates measurement of child and family strengths and competencies in standard assessment practices (Epstein, 2009; Greenspan & Meisels, 1996).

An additional weakness of current SEL programs not noted by Joseph and Strain is the high cost and resource intensity of existing SEL curricula. Many of the existing curricula, like the PATHS program (Kusche, & Greenberg, 1995), are expensive, time intensive, and require extensive training and involvement of mental health professionals in implementation. All of these features present a challenge when considering the feasibility of adoption in a given preschool. These research-to-practice gaps remain problematic throughout the field. If the cost of implementing SEL programming is too high, it is unlikely that schools will adopt curricula and implement it effectively.

Many investigations of SEL curricula are tightly controlled efficacy studies; however, little attention has been paid to what is seen in actual practice in real school settings with teacher implementation of curricula. Although implementation of a program under highly controlled conditions might result in changes in important child outcomes,

the findings are limited unless the program can be implemented as intended in typical school settings with treatment integrity. Thus, the investigation of feasibility of teacher implemented programs under naturalistic conditions becomes an important priority in determining whether programs will be effective and sustainable over time.

Strong Start: Pre-K is a part of the *Strong Kids* series of social and emotional learning curriculums for children aged 3-18 (Merrell, 2010). A number of studies have documented high levels of consumer satisfaction, social validity, and increases in social and emotional knowledge among students exposed to the program (Berry-Krazmien & Torres-fernandex. 2007; Caldarella, Christensen, Kramer, & Kronmiller, 2009; Castro Olivio, 2006; Faust, 2006; Feuerborn, 2004; Gueldner, 2006; Harlacher, 2008; Isava, 2006; Kramer, Caldarella, Christensen, & Shatzer, 2010; Levitt, 2009; Nakayama, 2008; Marchant, Brown, Caldarella, & Young, 2010; Merrell, Juskelis, Tran, & Buchanan, 2008; Whitcomb, 2009). However, to date no published studies on the preschool version have been conducted.

Strong Start: Pre-K (Merrell, Whitcomb, & Parisi, 2008) is a social and emotional learning curriculum that was developed as an alternative to existing programs that overcomes many of these limitations. It is a semi-structured SEL program consisting of ten lessons that target the five core areas of social and emotional learning, self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. All lesson materials are found in a user-friendly manual (with accompanying computer CD) that includes suggested scripts for each lesson. In addition, the curriculum was developed with instructional design principles in mind. Each lesson involves reviewing/priming of background knowledge, providing an overview of that day's lesson,

providing direct instruction of key concepts, connecting concepts to popular children's literature through read alouds, and providing various other interactive activities (e.g., small group discussion, modeling, role-plays).

This study was designed to improve upon the previous research and add to the growing body of literature related to SEL for young children and examines the feasibility, acceptability, and preliminary efficacy of the *Strong Start: Pre-K* curriculum on young children's knowledge and skills. To the principal investigator's knowledge, this is the first study to evaluate SEL for young children focusing predominantly on a typically developing population and measuring changes using a strength-based approach.

Specific Aims and Research Questions

The primary aim of this research was to establish the feasibility and acceptability of teacher implementation of *Strong Start: Pre-K*. The following research questions were asked to address the primary aim: (1a.) Do teachers implement the *Strong Start: Pre-K* curriculum with high levels of fidelity? (1b.) Do teachers find *Strong Start: Pre-K* to be a socially valid intervention? (1c.) Do students find *Strong Start: Pre-K* to be a socially valid intervention? The secondary aim of this research was to establish preliminary evidence of efficacy of *Strong Start: Pre-K*. Research questions addressing the secondary aim include: (2a.) Is there evidence suggesting that the implementation of *Strong Start: Pre-K* results in increases in social and emotional skills in preschool children as reported by teachers and observed through direct observations? (2b.) Is there evidence suggesting that the implementation of *Strong Start: Pre-K* results in increases in social and emotional knowledge in young children, as reported by preschool children? (2c.) Is there evidence that the implementation of *Strong Start: Pre-K* results in observed increases in

teacher social-skills prompting and social skills praise?

CHAPTER II

REVIEW OF THE LITERATURE

This review of the literature focuses on social and emotional learning in general, as well as a specific focus on social emotional learning in young children. First, key concepts related to mental health service delivery and prevention of mental health problems in youth is described. Second, social and emotional learning is described, including a review of the research supporting implementation effectiveness in preschools. Last, the potential contributions of the proposed study are articulated. This review is not exhaustive; rather it provides a foundation for the proposed study.

Traditional Approach to Mental Health Service Delivery

Rates of mental health problems have increased dramatically during the past century, particularly for children in the United States (Merikangas, Nakamura, & Kessler, 2009). Today, children are ten times more likely to experience mental health difficulties during their lives than children born only three generations ago (Klerman & Weissman, 1989; Merikangas, Nakamura, & Kessler, 2009). Children with mental health problems often have impairments in multiple domains of psychosocial functioning including, family interactions, school performance, and peer relationships. The growing prevalence of mental health problems in youth and the magnitude of impairment have brought increasing attention and effort to treating and preventing these disorders in children (Herman, Merrell, Reinke, & Tucker, 2004; O'Connell, Boat, & Warner, 2009).

Despite the high prevalence of child mental health problems, traditional approaches to providing mental health services have several limitations that impede treatment outcomes for youth. First, traditional approaches have emphasized within-person

problems and focused predominantly on intervening at the individual level (O'Connell, Boat, & Warner, 2009). While it is important to consider child factors in treatment and it may be appropriate to focus treatment on the individual client when serving adult populations, such efforts are limited when it comes to treating children in that they leave out critical contexts that could serve as primary targets or supports (Hoagwood, Burns, Kiser, Ringeisen, & Schoenald, 2001). An ecological framework that takes into account the contributions of the multiple influences from the environment (e.g., individual, family, neighborhood, school, government) is especially needed to best support children with and at-risk for mental health problems. A range of training curricula, materials, and approaches must be developed and specifically tailored for the providers in each of these systems (e.g., schools, community settings, homes, day treatment programs, primary care settings; Hoagwood, 2001; O'Connell, 2009).

Another problem with the traditional approach to mental health service delivery is that many available resources are underused by families due to access barriers. Families may have difficulty accessing care because of child, parent, or family characteristics as well as service delivery features (Owens et al., 2002). Children's mental health services researchers have found sociodemographics, child health and mental health problems, other family members' use of mental health services, and perceived parental burden to be associated with mental health service utilization (Arnold et al., 1998; Costello & Janiszewski, 1990; Cunningham & Freiman, 1996; Leaf et al., 1996; Padgett, Patrick, Burns, Schlesinger, & Cohen, 1993). Service delivery barriers related to utilization include insurance, transportation, language, and location of providers (Andersen, 1995; Halfon, Mendonca, & Berkowitz, 1995). Taken together, these barriers limit family

access to care and may result in exacerbation of symptomatology and more negative long-term outcomes for children.

Traditional approaches have also concentrated on responding to presenting problems as opposed to preventing the onset of symptoms. There is promising research suggesting that resources and outcomes can be optimized by attending to prevention efforts through a focus on mental health promotion and development of resiliency (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Wells, Barlow, & Stweart-Brown, 2003). Factors linked to resilience include individual competencies, family resources, school quality, and community-level characteristics, such as social and emotional competence (Doll & Lyon, 1998). These factors tend to have a cumulative effect such that a greater number of protective factors (e.g., an individual's self-regulation skills and social competence, family strengths, positive and supportive parent-child relationship, access to mentors and good education) can minimize the effects of risk factors (Greenberg et al., 2003). Moreover, enhancing children's social and emotional competence at school through social and emotional learning programs and supportive environments can be one way to build resiliency and prevent the development of mental health problems.

Focus on Prevention and Mental Health Promotion

There has been a recent call within the mental health and education fields to reconceptualize how services are provided so as to maximize resources through an increased emphasis on preventing mental health disorders. Focusing on prevention and mental health promotion may result in significant savings and be most cost effective for society (World Health Organization, 2002). This is a time of reduced spending on

education in general and supplementary programming in particular. There is a great need for conceptualizing services such that cost is reduced and resources are maximized. Focusing on prevention and adopting curricula that are low-cost and require limited resources (e.g., time, training) is of critical importance given this climate.

As a result, educational researchers have adopted a public health framework for use in schools, which has great importance for promotion of academic as well as behavioral, and social and emotional outcomes (Merrell, & Buchannan, 2006; U.S. Department of Education, 2005; Walker et al., 1996). This model includes service delivery at multiple levels including: universal, selective, and intensive. At the *universal* or *primary prevention* level, all students are provided with this level of intervention, which may include access to the general curriculum, a positive school climate, school-wide positive behavior support, prevention curricula, or social skills training. Students who do not respond to this level of support are considered to be at risk for the development of learning or behavioral/social/emotional difficulties and may require more intensified intervention at the *selected* level. Students who are in greatest need of intervention services are at the top of the triangle at the *intensive* or *tertiary* level. Figure 1 provides a visual display of this tiered service delivery framework. Recently, researchers within the field of early childhood education have applied this model to prevention and mental health promotion for young children (Fox & Hemmeter, 2009; Powell, Dunlap, & Fox, 2006).

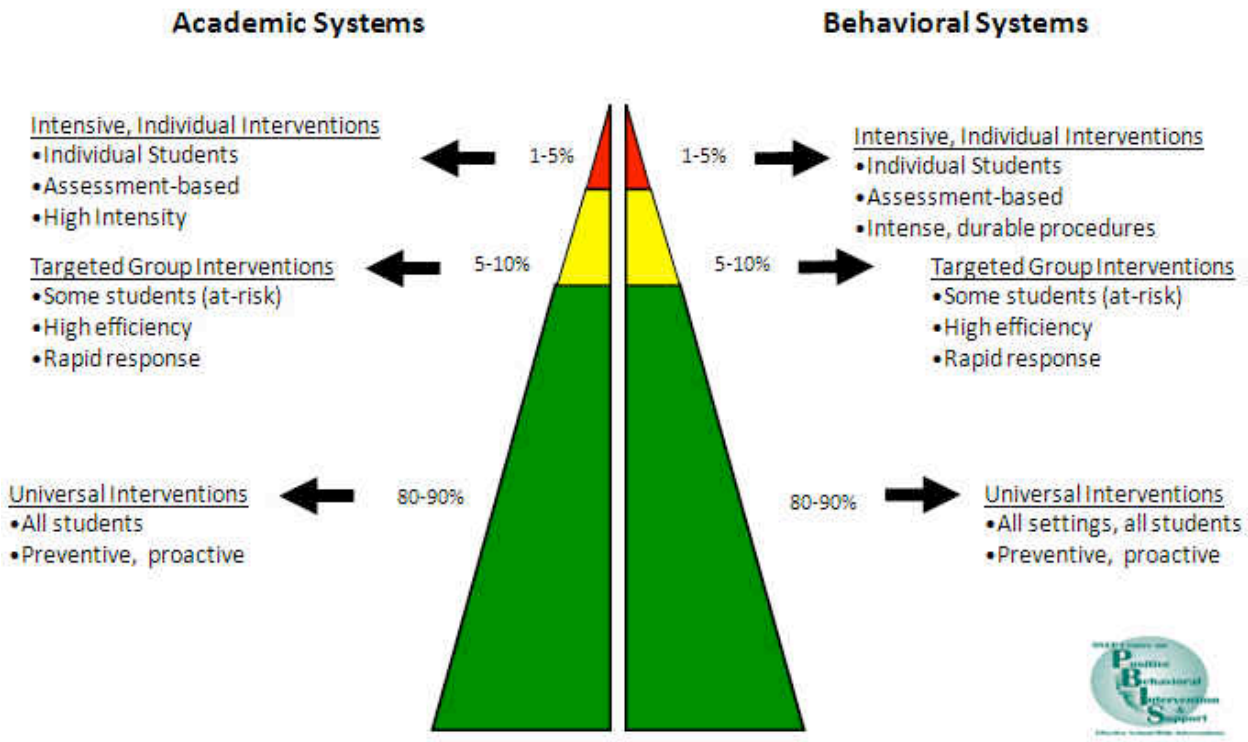


Figure 1. Multi-tiered Service Delivery Framework

Prevention and mental health promotion in preschool. Two national, federally- funded research and training centers, The Center for the Social and Emotional Foundations for Early Learning (CSEFEL) and The Technical Assistance Center on Social and Emotional Intervention (TACSEI) developed a conceptual model that describes prevention and mental health promotion efforts specifically aimed at young children (see Figure 2). In the Pyramid Model, the universal level includes positive relationships between children and adults as well as prevention practices within home and early childhood education settings. This model accounts for important differences in young children's cognitive, social, and emotional developmental needs relative to the needs of school age children. In particular, the role of relationships between young

children and adults is emphasized, as are the routines and structures at home and various early childhood educational learning environments (e.g., preschools, childcare centers).

Figure 2. Pyramid Model for Supporting Social and Emotional Competence in Infants and Young Children

At the preschool level, these universal supports are crucial to promoting positive assets and social emotional knowledge as well as targeting the key developmental domains of learning. Of importance is the consideration of the development of critical social, emotional, and behavioral competencies that set the stage for success at school. A kindergarten student who enters school well-prepared will be confident, able to make friends, have good relationships with others, persist in challenges, communicate their feelings, listen to others, and use different coping and problem solving strategies (Joseph

& Strain, 2003). Since development of these school readiness skills does not happen automatically, preschool and home-based programming is needed to teach young children these skills and provides them opportunities to practice and receive feedback. Given that SEL curricula can be used in a universal fashion for all children or be used to target students at risk, these curricula are described as fitting well into either universal or targeted prevention practices depending on the specific educational context (Fox & Hemmeter, 2009).

SEL Interventions

Multiple large scale meta-analyses recently conducted by CASEL-affiliated researchers found a number of positive effects from school-based SEL programs on students' social and emotional skills, social behavior, emotional and behavior difficulties, academic performance, and attitudes towards self, others, and school (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Payton et al., 2008). Although these positive findings from school-based SEL intervention research are encouraging, less work has been done specifically targeting preschool aged populations.

Preschool SEL curricula. In the most recent comprehensive review of SEL programs targeting young children, Joseph and Strain (2003) reviewed the literature for studies conducted on the efficacy of SEL programs for young children. They identified ten curricula that met their inclusion criteria and reviewed each in regard to six adoption criteria including: treatment generalization and maintenance, social validity, program acceptability, independent replication across varied samples, and evidence of high treatment fidelity. Although all curricula reviewed found positive findings, there was great variability across methodology and not one program met all criteria for adoption.

Two programs were identified as having high levels of evidence, but only one of these, *The Incredible Years: Dinosaur School* (Webster-Stratton, 1990), targets preschool students (the review's inclusion criteria targeted age, not setting, thus the program, *First Step to Success*, which targets Kindergarten students was also included). *Dinosaur School* was initially developed and evaluated as a pull-out clinic-based program delivered across 2-hour weekly sessions for 18-22 weeks, however it has also recently been implemented as a universal prevention curriculum in Head Start classrooms (Webster-Stratton & Reid, 2003). The program targets friendship making, problem-solving, and interpersonal communication skills. The classroom-based program consists of over 60 lessons delivered in 45-minute periods one to three times per week. A number of studies, including randomized control trials, have found significant intervention effects for child use of problem-solving and conflict-management strategies as well as reductions in problem behavior.

Another promising program identified by Joseph and Strain (2003) is the Preschool Promoting Alternative Thinking Program (PATHS; Domitrovich et al., 2004). Joseph and Strain reported that there were no published studies on the preschool PATHS; however, since the time of their review, Domitrovich et al. (2007) evaluated the Preschool PATHS program and found improvements in social and emotional knowledge and competence in students exposed to the program as compared to a control group. The Preschool PATHS program focuses on prevention of emotional and behavioral problems and the development of social and emotional skills. This program consists of forty-four lessons targeting a variety of topics, such as identifying comfortable and uncomfortable feelings, solving problems with friends, and learning the turtle technique for self-control.

The program uses interactive materials (e.g., puppets and posters) and content is delivered through a variety of activities.

Although research suggests that both Dinosaur School and Preschool PATHS have positive intervention effects for young children, they are resource and time intensive relative to general education curricula and thus have significant limitations for adoption by many settings that serve young children. In addition, data on treatment integrity across studies of these curricula and SEL in general are lacking. Poor implementation has been found to be a major contributor to a program's failure (Domitrovich & Greenberg, 2000, Ialongo et al., 1999). Previous research indicates that programs that are implemented by existing school personnel, are time efficient, and utilize a manual are more likely to achieve implementation integrity (Han & Weiss, 2005). As SEL programs continue to develop, it is surprising that few specifically focus on both issues of implementation feasibility and the unique social and emotional needs of preschool aged children.

SEL Measurement Issues

In addition to the weaknesses noted by Joseph and Strain (2003), another major limitation of SEL research is the current lack of high-quality assessment tools developed specifically with SEL skills in mind and validated exclusively for that purpose (Merrell & Gueldner, 2010). Moreover, most of the existing instruments used to measure social and emotional competencies, are pathology oriented, in that they emphasize problems and often neglect student strengths and assets (Merrell & Gueldner, 2010). As a result, when researchers or practitioners select measures to evaluate SEL programs, they often utilize tools that measure positive characteristics but do not fully capture what is included in the SEL program (e.g., social skills rating scales or self-concept measures) or choose deficit-

based psychopathology scales, thereby trying to evaluate a positive, strengths-based program based on whether it results in reductions in problem symptoms (Merrell & Gueldner, 2010). This is particularly problematic when studying universal-level programs with typically developing young children, as the field of early childhood emphasizes incorporating measurement of child and family strengths and competencies in standard assessment practices and problem behavior may not even be at a level requiring change to begin with (Epstein & Synahorst, 2009; Greenspan & Meisels, 1996).

In addition to the limitations associated with focusing on problem behavior as the primary dependent variable in SEL research, another weakness of the literature is that the majority of studies are based on indirect assessments of child outcomes. While teacher and parent perceptions of child improvement may be socially and clinically valid, there are limitations to relying on indirect measures when addressing changes in behavior. In particular, indirect measures, such as self-report questionnaires completed by parents or teachers provide a summary of behavior, but often lack specificity. Direct observations on the other hand rely on lower inferences and do not rely on retrospective reports which may be inaccurate. Thus, data that result from the direct assessment of behavior are important to better understand behavior change resulting from exposure to SEL programs. Although direct assessment procedures reflect current best practices in assessment (Merrell & Gueldner, 2010). the literature on SEL assessment and intervention relies almost exclusively on parent or teacher informant rating scales.

When direct observation data are included in studies, these observations are typically used as a supplement and may be conducted in an analog setting. For example, Webster-Stratton and Hammond (1997) conducted direct observations of child

participants' interactions with his or her best friend following exposure to the Incredible Years curriculum. Child participants and their friend were asked to visit a laboratory playroom and given two sets of instructions across a 20-minute observation period. Both tasks focused on working and playing together. While the authors found positive outcomes using these tasks, this data are limited by the artificial nature of the data collection procedures. SEL evaluation studies that incorporate direct observation of children in the natural settings in which they interact with others are greatly needed (e.g., preschool, daycare, home).

Conclusion

There is a paradigm shift occurring across the fields of mental health and education. Professionals are being called to restructure service delivery efforts away from reactive and costly interventions to well-coordinated systems that taken into account the needs of all children and focus on primary and secondary prevention. SEL programming has the promise to improve outcomes for children, but there are limitations to the existing preschool curricula as well as the methods used to study them. Programs that are developed with consideration to adoption and implementation feasibility are greatly needed. In addition, studies are needed that incorporate direct assessments to measure pro-social behavior change as a function of intervention implementation. The current study aimed to evaluate the feasibility, acceptability, and preliminary evidence of efficacy of teacher implementation of one such program, *Strong Start: Pre-K*. This SEL program was intentionally created with feasibility in mind, as it is low-cost and easy to implement. Although developed with feasibility in mind, *Strong Start: Pre-K* lacks empirical investigation. *Strong Start: Pre-K* was developed to offer an alternative SEL

program that targets the core domains of social and emotional competence, is developmentally appropriate for young children, and is low cost and easy to implement.

CHAPTER III

METHODS

Participants and Setting

This study was conducted in two preschool classrooms in a preschool center located in a mid-size city in Oregon. Study participants were 41 preschool students (n = 21 boys) and 2 teachers; however, due to missing data at pretest and posttest, results include teacher report data on 39 students and student interview data on 37 students. Preschool students' ages ranged from 33 months to 77 months (M = 51.5 months). Table 1 provides demographic characteristics of student participants by classroom. Children attending Classroom 2 were significantly older than children attending Classroom 1. Child gender and full time enrollment status did not differ between classrooms. Both classroom teachers were female and had worked at the preschool center for over 15 years.

Table 1

Student Demographic Characteristics by Class

Demographic	Classroom 1 N = 18	Classroom 2 N = 23	t or X^2
Mean Age in Months (*SD*)	39.61 (4.42)	60.86 (8.16)	t = -9.95***
Gender - % Male (*N*)	44% (8)	57% (13)	X^2 = 0.59
Daycare Attendance - % Attending Full-time (N)	78% (14)	79% (19)	X^2 = 0.70

Note. *p < .05, **p < .01, ***p <.001

Recruitment. Upon receiving approval from the Office for the Protection of Human Subjects at the University of Oregon, the principal investigator contacted local preschool center directors to discuss the proposed study. Four directors then presented the

proposed study to classroom teachers in order to gauge interest. Interested teachers met individually with the principal investigator. The sample is one of convenience, based on teacher willingness and interest in participating in the investigation. Participating teachers were asked not to implement other formal social-emotional curriculum during the course of the study.

Upon obtaining teacher consent to participate (see Appendix A), the principal investigator sent consent forms home to the parents/guardians of students (see Appendix B). The letter provided the investigator's contact information and described the details of the study. The response rate was 95%, with only two parents denying consent for their children to participate in the study.

Procedures

Teacher training. Teacher participants received two 1-hour training sessions on Strong Start: Pre-K prior to their implementation of the curriculum. The first session provided teachers with an overview of the study and assessment procedures and occurred two weeks prior to the pretest assessment period in January 2012. Teachers signed letters of consent at this meeting. The second training session occurred one week prior to initial implementation of lessons and trained teachers on procedures for effective curriculum implementation. Teachers were provided with a copy of the Strong Start: Pre-K manual and all materials needed for each lesson. Additional topics covered in the training included effective use of children's literature and the importance of sending weekly newsletters home to parents. The principal investigator provided an overview of all lessons and described the structure and key components of each lesson. The principal investigator also modeled delivery of portions of lessons and provided opportunities for

teachers to practice and receive performance feedback. In addition, the principal investigator emphasized the importance of embedding the curriculum throughout the day through prompting for skills and providing praise when students exhibited skills learned in the program. At the close of this training session, teachers were provided with details about the logistics associated with the proposed study. Table 2 provides an overview of the training.

Intervention. *Strong Start: Pre-K* is a low-cost curriculum that is part of the *Strong Kids* series, which has a robust research-base and has demonstrated success at improving social and emotional knowledge and skills in children in K through High School settings (Merrell, 2010). *Strong Start: Pre-K* includes 10, 20 to 30-minute, activity-based lessons and 2 optional booster lessons that are easy to implement with children in preschool. Lessons include a variety of direct instruction, modeling, role-playing, and hands on activities and cover topics such as understanding and identifying feelings, being a good friend, and problem solving (See Appendix C for list of lesson topics).

Teachers were asked to implement the *Strong Start: Pre-K* lessons twice per week during circle time across 5 weeks in winter and spring of 2012. Teachers selected intervention days based on days in which the largest number of students would be present and scheduling convenience (e.g., Tuesdays in one classroom often involved field trips so was not included). In classroom 1, snow days interfered with the regularly scheduled time for Strong Start: Pre-K lessons during week 3 resulting in one lesson taught during week 3 and three lessons taught during week 4. For this study, teachers did not implement the booster lessons.

Table 2

Teacher Training Components

Training Component	Description	Expected Time
Introductions	Review study overview and expectations of teacher involvement and distribute teacher materials (Strong Start manual, print outs of all lesson materials and parent handouts, Henry)	5 minutes
Conceptual overview	Discuss conceptual overview and theoretical underpinnings of Strong Start curriculum	5 minutes
Lesson topics	Distribute the lesson overview form and discuss the lesson topics	10 minutes
Lesson components	Discuss the key components of each lesson (e.g., Henry, reviewing previous lesson/priming background knowledge, introducing day's lesson, reading a book, activities, closure, parent handout)	25 minutes
Generalization	Discuss the importance of embedding teaching throughout the day through prompting and praise	5 minutes
Questions and Wrap-Up	Answer remaining questions and discuss logistical concerns	10 minutes

Research Design

Given the pilot nature of this study, a single group pre-post within-subjects design (Keppel & Zedeck, 1989) was used. This study did not use a control group; all consenting

students participated in the *Strong Start: Pre-K* intervention. The study included two data collection time points. Pretest data were collected in February 2012 during a two week interval one week prior to intervention implementation. Posttest data were collected in April 2012 during a two week interval immediately following implementation of the intervention. This single group pre-post design is considered in line with the research purpose of the Institute of Education Sciences Goal II: Development/Innovation research projects, which focus on intervention development and pilot testing (IES, 2012).

Assessment Procedures

Several assessment instruments were used to measure the effects of Strong Start: Pre-K, consumer satisfaction, and treatment fidelity. Teachers provided ratings of student social and emotional competencies and behavioral concerns at pretest and posttest. Teachers were given two weeks at each assessment phase to complete measures on all participating students in their classroom. Teachers were also asked to complete a consumer satisfaction questionnaire at posttest only. Teachers were provided with a $150 American Express gift card as an incentive for the time investment required for this activity.

To measure student emotion knowledge skills, preschool students completed a knowledge interview. Graduate students from the University of Oregon's school psychology program and advanced undergraduate students from the University of Oregon's Family and Human Services program were trained in administering this assessment. Graduate students read test items and response options aloud to individual students and recorded their responses using a pencil/paper recording format. Assessment occurred in a corner of the classroom and required about 2 minutes of students' time.

Students were given stickers for participating in these assessments. Emotion knowledge assessments occurred during pretest and posttest phases. Students were asked to complete a brief social validity interview at posttest only.

Direct observations of student and teacher behavior were conducted to measure student pro-social and disruptive behavior and teacher social skills prompting and praising. Observations were conducted at pretest and posttest. Prior to pretest, graduate student observers were trained by the PI to an 85% interobserver agreement criterion on each target behavior. Observers participated in three two-hour training sessions. The first session involved reviewing the measures, *Strong Start* curriculum, and data collection procedures. During this session, observers also became familiar with the operational definitions of each variable (i.e., teacher social skills prompts, teacher social skills praise, child problem behavior, child pro-social behavior). The second and third sessions involved practicing observations using videotapes and live practice in the participating classrooms. Observers practiced coding for specific variables using operational definitions that were reviewed in the first session. Before baseline data were collected, each observer conducted at least two practice coding sessions.

Direct observation data collection occurred during 20-minute periods in which the data collector observed the head teacher for teacher behavior codes and at the same time observed an individual child for child behavior codes. Every three minutes, observers rotated individual children to observe. For example, Student A was observed for the first 3 minutes with Student B observed for the next 3 minutes and so on until the observation period (20-minutes) was complete. Reliability of the measurement of the direct

observation data was assessed during 30% of the observation sessions. During these sessions, two observers independently collected data as described above.

Research assistants were also trained in observing the fidelity of *Strong Start: Pre-K* implementation. Four fidelity observations (40% of intervention sessions) were conducted in each classroom. Research assistants were provided with individual training meetings to orient them to the fidelity observation forms and the key elements and procedures. Fidelity observers were also provided copies of lesson materials for reference for each lesson they observed.

Measures

Feasibility and acceptability. To establish feasibility and acceptability of teacher implementation of *Strong Start: Pre-K*, data on treatment integrity and social validity were collected. Social validity data were also collected on student participants.

***Treatment integrity*.** Implementation data were gathered to determine the integrity of *Strong Start: Pre-K* implementation. Trained graduate students from the University of Oregon observed teacher delivery of Strong Start: Pre-K lessons and recorded fidelity on the Implementation Checklists (See Appendix D). Observational data obtained assessed the extent to which teachers implemented the lesson components as outlined in the *Strong Start: Pre-K* manual. Checklists included a concrete outline of essential components included in each lesson. Components that were implemented correctly were summed, and a percentage was calculated by dividing the number of correctly implemented components by the total number of components and multiplying by one hundred. Five fidelity observations were conducted across each classroom.

To determine how often teachers embedded the curriculum in the classroom outside of the lesson delivery, the PI emailed participating teachers once per week to gather indirect data on teacher generalization of skills (see Appendix E for email example). Teachers were asked how many times they prompted and praised social skills that week and to provide examples of each. Teachers received $10 for answering the questions and responding to the email within 2 business days.

Social validity. Social validity was measured at the completion of the study through teacher questionnaires and brief student interviews. Teachers were asked to complete a modified version of the Behavioral Intervention Rating Scale (Von Brock & Elliot, 1987; see Appendix F). Teachers used a 5-point Likert scale (1=strongly disagree; 5=strongly agree) to respond to questions such as, "This would be an acceptable curriculum for teaching social and emotional learning," and "Teachers are likely to use this curriculum because it requires little training to implement effectively."

Research assistants administered a modified version of the Student Social Validity Questionnaire (Whitcomb, 2009) to students (See Appendix G). This brief interview consisted of three questions. Students were asked to give thumbs up for yes, thumbs down for no, or a thumb to the side for kind of. These questions included, "I liked Strong Start," "I learned a lot from Strong Start," and "I had fun doing Strong Start." In order to maximize student understanding of the task and orient them to the Strong Start program, this interview began with a brief introduction that reminded students of Henry the Bear and the types of activities they did with their class during the Strong Start program (see Appendix G for orienting script).

Preliminary evidence of effects. The dependent variables used to investigate preliminary evidence of effects consisted of teacher ratings of student social and emotional competencies as well as student emotion knowledge interview responses. Given the difficulty in using written self-report measures to assess young children's perceptions of social and emotional competence, interview style assessments were used to gather information on student emotion knowledge. Direct observation data on student and teacher behavior were also collected to examine the impact of the *Strong Start: Pre-K* curriculum.

Children's behavioral and emotional strengths. *Devereux Early Childhood Assessment (DECA; LeBuffe & Naglieri, 1999).* The DECA is a standardized, norm-referenced, 27-item rating scale designed to assess the behavioral and emotional strengths of preschool children (see Appendix H). The DECA takes approximately ten minutes to complete and uses a Likert-type scale from 0 to 4 (0 = Never, 4 = Very Frequently). The DECA includes three subscales: (1) Initiative (11 items) measures a child's ability to use independent thought and action to meet his or her needs. An example item is, *During the past 4 weeks, how often did the child do things for himself/herself*? (2) Self-Control (8 items) focuses on the child's ability to experience a range of feelings and express them using words and actions that society considers appropriate. An example item is, *During the past 4 weeks, how often did the child control her/his anger?* (3) Attachment (8 items) measures the mutual, strong and long-lasting relationship between a child and significant adults such as parents, family members and teachers. An example item is, *During the past 4 weeks, how often did the child act in a way that made adults smile or show interest in her/him?* The Total Protective Factors Scale is a composite score calculated by

summing the scaled scores of the three subscales and provides an overall indication of the strength of the child's protective factors. According to the DECA technical manual, this instrument has high internal consistency reliability, with alpha coefficients for the protective factor scales meeting or exceeding the .80 "desirable standard" established by Bracken (1987) for internal consistency estimates. Test-Retest reliabilities over a 24-hour period for teachers were reported to be .87 to .94. Interrater reliability of the DECA was established by comparing ratings provided by teachers and teacher's aides. The manual reports that reliabilities for the protective factors ranged from .59 to .77. Construct validity was explored by correlating scores on the protective factor scales and the Behavioral Concerns scale, a 10-item screener for behavioral problems. An overall correlation of -.65 was obtained indicating that protective factors and problem behaviors are inversely related. In the current sample, alphas coefficients were: .90 at pretest and .92 at posttest for Initiative, .89 at pretest and .92 at posttest for Self-Control, .88 at pretest and .80 at posttest for Attachment, and .93 at pretest and .92 at posttest for the Total Protective Factors Scale.

Children's knowledge and skills. *Strong Start Knowledge Interview (SSKI)* is a brief individually administered interview used to assess skills targeted in the *Strong Start* curriculum including emotion identification, emotion recognition in others, and basic social problem-solving strategies. A Strong Start Knowledge Test is included in versions of the Strong Start curricula for older children; however, there is currently no curriculum knowledge assessment for young children. Previous research with the Strong Kids knowledge measure has demonstrated adequate internal consistency for a brief measure used for research purposes (e.g., cronbach alphas ranging from .60 to .80), and strong

sensitivity to change following treatment (Harlacher, 2008; Isava, 2006). The SSKI was developed for the present study and was based on a review of the Strong Start Knowledge Tests and the Strong Start: Pre-K curriculum. The SSKI takes approximately 2-minutes to administer via student interview. There are 20 items included in the SSKI, and students receive 1 point for each correct response on 20 items. Children responded to each item by providing a brief verbal response or pointing to a feelings face. Test items include statements such as "Point to the face showing happy" and "Is listening to each other and using a nice voice a way to be a good friend." A copy of the SSKI can be found in Appendix I. This assessment was developed for the current study. No psychometric data are currently available.

Direct observations. Direct observation data were collected on the following dependent variables: Teacher social skills prompts, teacher social skills praise, student disruptive behavior, and student pro-social behavior (see Table 3 for operational definitions and Appendix J for data collection forms). Six 20-minute observations were conducted in each classroom during each assessment phase.

Teacher social skills prompts. Any prompting or pre-teaching for social skills (e.g., "What are you feeling?"; Jane, you look angry, use the stop, count, breathe in, breathe out, strategy"; "Brad, use happy talk"; "Take a walk to the water fountain if you are upset." "Is that a way that helps or a way that hurts?"). A 10-second partial interval measure was used to capture teacher social skills prompting.

Table 3

Dependent Variables, Response Definitions, and Measurement

Dependent Variable	Description	Examples	Non-Examples	Measurement
Teacher social skills prompt	Any prompting or pre-teaching for social skills	"What are you feeling?" "Jane, you look angry, use the stop, count, breathe in, breathe out, strategy" "Brad, use happy talk."	"What is 1+1?" "Nice job being a good friend to Paul!"	10-second partial interval
Teacher social skill praise	Any praise provided contingent on student demonstration of social skills	"Nice job identifying how you feel!" Following Brad's statement that he feels happy today, the teacher said, "Awesome!" "Way to go! You used a way that helps to solve that problem!"	"Tell me what you feel." "Good coloring Misty!"	10-second partial interval
Student disruptive behavior	Any demonstration by a student of verbal or physical disruptive behavior	Mark throws a toy Michel hits another child Jessica rips up the paper she is coloring	Juan uses nice talk with Sally to ask for a crayon Brandon keeps his hands to himself during free play	10-second partial interval
Student pro-social behavior	Any demonstration by a student of a pro-social behavior	Jimmy says, "John – you look happy!" Bryan asks, "Tanya, can I play with you?" Candice uses the stop, count, breathe in, breathe out, strategy when she gets upset	Marissa hits another student Marcos runs away when the teacher tells him it is time to line up	10-second partial interval

Teacher social skills praise. Any praise provided contingent on student demonstration of social skills (e.g., "Nice job identifying how you feel!"; "Nice job using calm feet!" "Great job using the stop, count, breath in, breathe out strategy!";

"Awesome! You used a way that helps to solve that problem!") A 10-second partial interval measure was used to capture teacher social skills praise.

Student pro-social behavior. Any demonstration by a student of a pro-social behavior (e.g., labeling their emotion, asking a peer to play, using the stop, count, breathe in, breathe out strategy, using happy talk). A 10-second partial interval measure was used to capture student pro-social behavior.

Student disruptive behavior. Any demonstration by a student of verbal or physical disruptive behavior (e.g., hitting another child, intentionally destroying a toy, screaming). Disruptive behavior was coded as a partial-interval measure across 10-s intervals.

Interobserver agreement. Reliability of the measurement of the direct observation data was assessed during 30% of the observation sessions. During these sessions, two observers independently collected data as described above. Total interobserver agreement, occurrence agreement, and nonoccurrence agreement was calculated. Total agreement was calculated by dividing the number of intervals that both observers agreed a response did or did not occur by the total number of intervals and multiplying by 100 for that particular observation. Occurrence only agreement was calculated by dividing the total number of intervals both observers agreed a response occurred by the number of intervals either observer scored a response and multiplying by 100. Non-occurrence agreement was calculated by dividing the total number of intervals both observers agreed a response did not occur by the total number of intervals either observer did not score a response and multiplying by 100.

Independent variable. Time served as the single independent variable. This variable had two levels (pretest, posttest).

CHAPTER IV

RESULTS

Analytic Approach

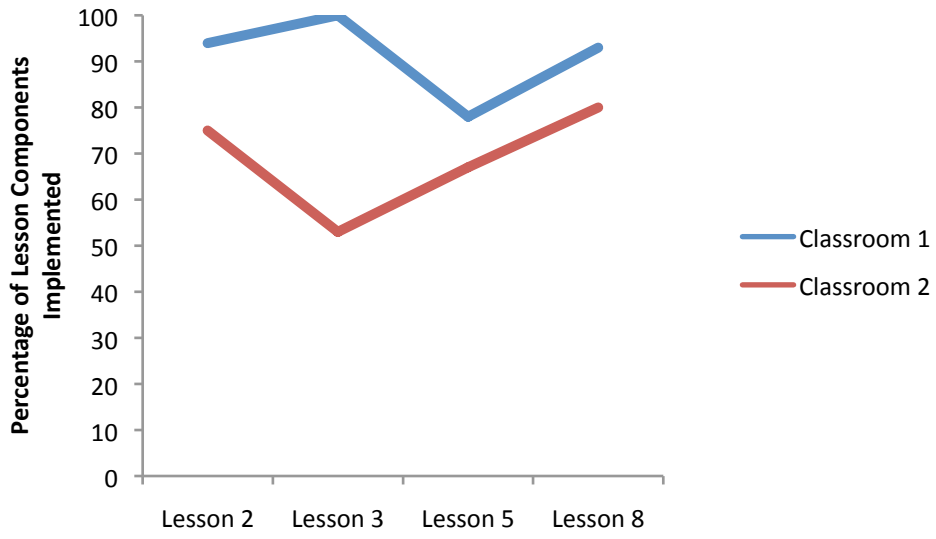
This section includes a description of the analyses used to evaluate the data for this study and the results of these analyses. Results are reported in order of research questions described. In addition to the results pertaining to these questions, analyses were conducted to evaluate internal consistency for dependent measures. Fidelity of implementation of the *Strong Start: Pre-K* curriculum was examined through direct observations. Teachers' and students attitudes toward the *Strong Start: Pre-K* curriculum were measured with a brief qualitative survey and interview respectively. Two-way repeated measures analyses of variances (ANOVAs) were conducted to examine the effects of the *Strong Start: Pre-K* curriculum for the two classrooms. The ANOVAs were conducted for all quantitative dependent measures including, teachers' report of protective social and emotional factors, teachers' report of student self-control, initiative, and attachment, and students' knowledge of curriculum content. The impact of the *Strong Start: Pre-K* curriculum on student pro-social and disruptive behavior was also measured through direct observation and rates of observed behavior are presented descriptively. Descriptive statistics were also used to examine the impact of the *Strong Start: Pre-K* curriculum on instructional behavior across the two teachers.

Aim 1: Establishing Feasibility and Acceptability of *Strong Start: Pre-K*

To establish feasibility and acceptability of teacher implementation of *Strong Start: Pre-K*, data on treatment integrity and social validity were analyzed. Feasibility was determined by examining the extent to which teachers implemented the *Strong Start:*

Pre-K curriculum, whereas acceptability was determined by teacher and student satisfaction with the intervention.

Treatment integrity. Implementation data were gathered to determine integrity of *Strong Start: Pre-K* implementation. Observation data obtained from 40% of lessons assessed the extent to which educators implemented the lesson components as outlined in the manual. Classroom 1 teacher's implementation of core lesson components ranged from 78-100% and classroom 2 ranged from 53-80%. In classroom 1, lessons lasted approximately 22-30 minutes. In classroom 2, lessons lasted approximately 12-20 minutes. Following lesson 3, a check-in was conducted with the teacher of classroom 2 due to falling below 80% treatment integrity on two consecutive lesson observations. The educator noted that she had limited time to do the entire previous lesson due to the loss of two school days because of snow. Figure 3 displays the percentage of lesson components completed during the four observations.



* Teacher fidelity check-in

Figure 3. Percentage of Lesson Components Implemented Across Classrooms

Teacher reported curriculum embedding. During curriculum implementation, teachers received a weekly email that asked how they infused skills presented in *Strong Start: Pre-K* throughout the day. Both teacher responded to 100% of emails and answered 100% of email questions. Average weekly prompts and praise reported by teachers are depicted in figures 4 and 5. In addition to quantitative estimates of generalization prompts and praise statements, teachers also provided example statements. Tables 4 and 5 provide example teacher prompt and praise statements made throughout the intervention phase.

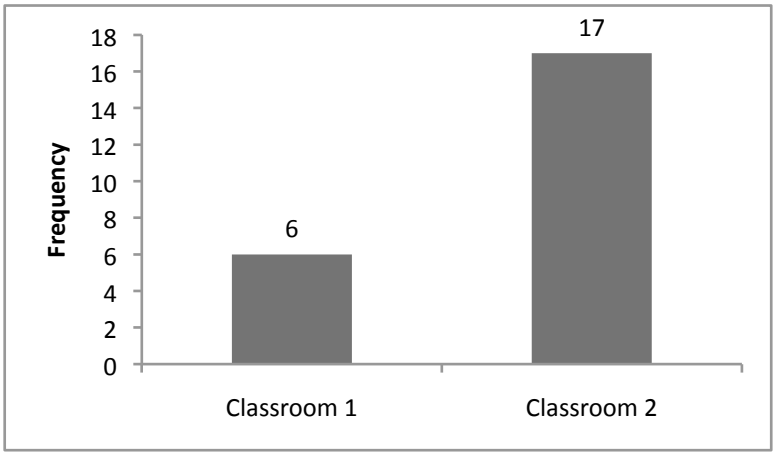


Figure 4. Mean Number of Teacher Reported Social Skills Prompts Given Per Week

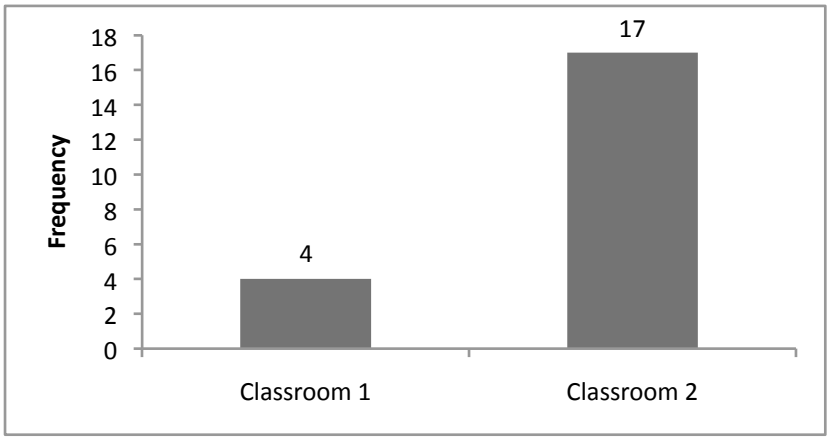


Figure 5. Mean Number of Teacher Reported Social Skills Praise Statements Made Per Week

Table 4

Teacher Social Skills Prompt Statements

Prompt Statements
How are you feeling?
Does that feel good or bad?
When you were feeling angry was that an okay way of responding or not ok?
Can you find an ok way of expressing anger?

Table 5

Teacher Social Skills Praise Statements

Praise Statements
Good job finding an ok way to express yourself.
You used your words well.
I like that inside voice.
Look how you three cooperated!

Social validity. Regarding the research question: To what extent is the *Strong Start: Pre-K* curriculum perceived by teachers to be an acceptable and feasible curriculum and a socially valid program for students, brief questionnaires and interviews were conducted.

Teacher acceptability of Strong Start: Pre-K. Both teachers completed a brief consumer satisfaction questionnaire. Table 6 provides information regarding the extent to which teachers endorsed (agreed or strongly agreed) were neutral or did not endorse (disagree, strongly disagree) consumer satisfaction questionnaire statements. Teachers'

attitudes toward the *Strong Start: Pre-K* curriculum were positive in general, but mixed. The area in which teachers were most closely aligned and positive in their responses was their belief that the curriculum was easy to use, was a good way to teach SEL, and was effective in changing children's social and emotional knowledge and skills. In addition, both teachers agreed that the curriculum resulted in generalization of knowledge and skills into other settings, such as home. The one item that was not endorsed by either teacher had to do with the idea that social and emotional knowledge and skills would remain at an improved level even after the intervention is discontinued. Teachers were mixed in their belief regarding how practical the amount of time required for delivery of lessons was in the *Strong Start: Pre-K* curriculum.

Student acceptability of Strong Start: Pre-K. All students completed brief social validity interviews at the conclusion of the Strong Start: Pre-K intervention. 92% (36) reported they liked the Strong Start: Pre-K intervention, 87% (34) reported they learned a lot during lessons, and 95% (37) reported they had fun doing Strong Start: Pre-K.

Aim 2: Establishing Preliminary Evidence of Effects of *Strong Start: Pre-K*

Internal consistency for dependent measures. Prior to examining preliminary evidence of effects of *Strong Start: Pre-K*, internal consistency reliability estimates were computed for the following quantitative dependent self-report measures, as a way to ascertain their overall psychometric integrity: The Total Protective Factor Scale, the Initiative Subscale, the Self-Control Subscale, and the Attachment Subscale. Internal consistency alphas were not considered appropriate for the Student Knowledge assessment and the Teacher Acceptability assessment because little variance existed between items on these measures.

Table 6

Social Validity Results Across Teachers

Item	Endorsed	Neutral	Not Endorsed
1. This is an acceptable curriculum for teaching social and emotional skills	100%	0%	0%
2. Most teachers would find this curriculum appropriate for teaching social and emotional skills	50%	50%	0%
3. Teachers are likely to use this curriculum because it requires little training to implement effectively	100%	0%	0%
4. This curriculum is practical in the amount of time required for preparation of lessons	0%	100%	0%
5. This curriculum is practical in the amount of time required for delivery of lessons	50%	0%	50%
6. The curriculum is effective in changing children's social and emotional knowledge and skills	100%	0%	0%
7. I would suggest the use of this curriculum to other teachers	100%	0%	0%
8. I would be willing to use this in the classroom again	100%	0%	0%
9. The curriculum does not result in negative side effects for children	50%	50%	0%
10. The curriculum is an appropriate intervention for a variety of children	100%	0%	0%
11. I like the procedures used in the curriculum	100%	0%	0%
12. This curriculum was a good way to teach social and emotional skills	100%	0%	0%
13. The curriculum would produce a lasting improvement in child social and emotional knowledge and skills	50%	50%	0%
14. Soon after using the curriculum, a teacher would notice a positive change in student's social and emotional knowledge and skills	50%	50%	0%
15. The children's social and emotional knowledge and	0%	50%	50%

skills would remain at an improved level even after the intervention is discontinued			
16. Using the curriculum should not only improve the child's use of social and emotional knowledge and skills in the classroom, but also in other settings	100%	0%	0%

Cronbach's Alpha method was used for this analysis. These results indicated acceptable reliability for all measures for purposes of this research project. Reliability coefficients for each measure are shown in Table 7.

Table 7

Cronbach Reliability Coefficients as Measured at Pretest and Posttest

Variable	Pretest	Posttest
Protective Factors	.93	.92
Initiative	.90	.92
Self Control	.89	.86
Attachment	.88	.80

Descriptive statistics. Descriptive statistics were derived for each of the dependent measures across periods of assessment. Mean scores and standard deviations of the Total Protective Factor and subscales of the Devereux Early Childhood Assessment (DECA; (LeBuffe & Naglieri, 1999) and Strong Start Knowledge Interview are included in Table 8. From Pretest to Posttest, participants' scores increased on the DECA Total Protective Factors as well as the Initiative, Self-Control, and Attachment subscales of the DECA. Higher scores are indicative of more social and emotional assets

and resiliencies in general and in particular more skills in relation to students' ability to use independent thought and action to meet his or her needs (initiative), children's ability to experience a range of feelings and express them using appropriate words and actions (self-control), and students' ability to create and maintain mutual, strong, and lasting relationships with significant adults (attachment). Mean scores for participants on the Strong Start Knowledge assessment increased from pretest to posttest. On average, students received 70% correct at pretest and 88% correct at posttest. Higher scores are thought to be indicative of more social emotional knowledge.

Table 8

Means and Standard Deviations of Dependent Measures at Pretest and Posttest

Variable	Pretest	Posttest
Total Protective Factors	71.80 (12.08)	78.05 (11.02)
Initiative	28.54 (6.11)	32.49 (6.56)
Self Control	20.17 (4.42)	20.82 (3.51)
Attachment	23.10 (4.06)	24.74 (3.32)
Content Knowledge	13.97 (4.02)	17.30 (2.01)

Preliminary evidence of effects of *Strong Start: Pre-K* on social and emotional strengths and resiliencies. To answer the research question: What is the effect of participation in the *Strong Start: Pre-K* social and emotional learning curriculum on

young children's social and emotional assets and resiliencies, a two-way repeated measures ANOVA was conducted to evaluate the effect of the *Strong Start: Pre-K* curriculum on student protective factors. The dependent measure was the Total Protective Factors scale of the DECA. The within-subjects factor was Time (pretest and posttest), and the between-subjects factor was Class (Classroom 1, Classroom 2). The class * time interaction effect was not significant, $F(1, 37) = 0.33$, $p > .05$, indicating there was no significant difference between classrooms regarding social and emotional strengths and resiliencies over time. Consequently, consistent with conventional analysis of variance logic, main effects of class and time were examined. The main effect of time was significant, $F(1, 37) = 22.03$, $p < .001$, $\eta 2 = .37$, indicating there was a significant increase from pretest to posttest on student social and emotional strengths and resiliencies. Table 9 shows the results of the ANOVA.

Table 9

Two-Way, Mixed-Effects Analysis of Variance Summary Table for the Effects of Class and Time on Social and Emotional Strengths and Resiliencies

Source	*df*	F	$\eta 2$	*p*
Between subjects				
Class	1	.20	.00	.66
Error between	37			
Within subjects				
Time	1	22.03***	.37	<.001
Class * time	1	2.21	.06	.15
Error within	37			

Note. *$p < .05$, **$p < .01$, ***$p < .001$

Effects of *Strong Start: Pre-K* on initiative. To answer the research question: What is the effect of participation in the *Strong Start: Pre-K* social and emotional learning curriculum on young children's ability to use independent thought and action to meet his or her needs among preschool students, a two- way repeated measures ANOVA was conducted to evaluate the effect of the *Strong Start: Pre-K* curriculum, on student initiative. The dependent measure variable was the Initiative subscale of the DECA. The within-subjects factor was Time (pretest and posttest), and the between-subjects factor was Class (Classroom 1, Classroom 2). The class * time interaction effect was not significant, $F(1, 37) = 0.33$, $p > .05$, indicating there was no significant difference between classrooms regarding initiative over time. Consequently, consistent with conventional analysis of variance logic, main effects of class and time were examined. The main effect of time was significant, $F(1, 37) = 18.41$, $p < .001$, $\eta 2 = .33$, indicating there was a significant increase from pretest to posttest on initiative. Table 10 shows the results of the ANOVA.

Effects of *Strong Start: Pre-K* on self-control. To answer the research question: What is the effect of participation in the *Strong Start: Pre-K* social and emotional learning curriculum on young children's ability to experience a range of feelings and express them using appropriate words and actions, a two-way repeated measures ANOVA was conducted to evaluate the effect of the *Strong Start: Pre-K* curriculum on student self-control. The dependent measure variable was the Self-Control subscale of the DECA. The within-subjects factor was Time (pretest and posttest), and the between-subjects factor was Class (Classroom 1, Classroom 2). The class * time interaction effect was significant, $F(1, 37) = 14.18$, $p < .01$, $\eta 2 = .28$, indicating there was a significant

difference between classrooms regarding self-control over time. Table 11 shows the results of the ANOVA.

Table 10

Two-Way, Mixed-Effects Analysis of Variance Summary Table for the Effects of Class and Time on Initiative

Source	*df*	F	η2	*p*
Between subjects				
Class	1	.80	.02	.38
Error between	37			
Within subjects				
Time	1	18.41***	.33	<.001
Class * time	1	.33	.01	.57
Error within	37			

Note. *$p < .05$, **$p < .01$, ***$p < .001$

Post-hoc pairwise comparisons were conducted and the Bonferroni procedure was used to control for alpha slippage (Keppel & Zedeck, 1989). The critical p-value for the pairwise comparisons was p = (.05/4) = .0125 (the p-value was divided by the total number of comparisons, which was a comparison between classrooms at each assessment period). These analyses indicated the difference in mean raw scores on the self-control measure were significantly different from pretest to posttest for classroom 2 only (Mean Difference = -1.87, $p < .01$). Figure 6 illustrates these significant differences, indicating that for classroom 1, the mean raw score on the self-control scale did not significantly change from pretest to posttest (Mean Difference = 1.25, $p = .06$), while the mean raw self-control score for classroom 2 increased from pretest to posttest. Consistent with

AOV logic, main effects of time and class were not examined because the interaction was significant.

Table 11

Two-Way, Mixed-Effects Analysis of Variance Summary Table for the Effects of Class and Time on Self-Control

Source	*df*	F	η2	*p*
Between subjects				
Class	1	.00	.00	.96
Error between	37			
Within subjects				
Time	1	.56	.02	.46
Class * time	1	14.18**	.28	<.01
Error within	37			

Note. *$p < .05$, **$p < .01$, ***$p < .001$

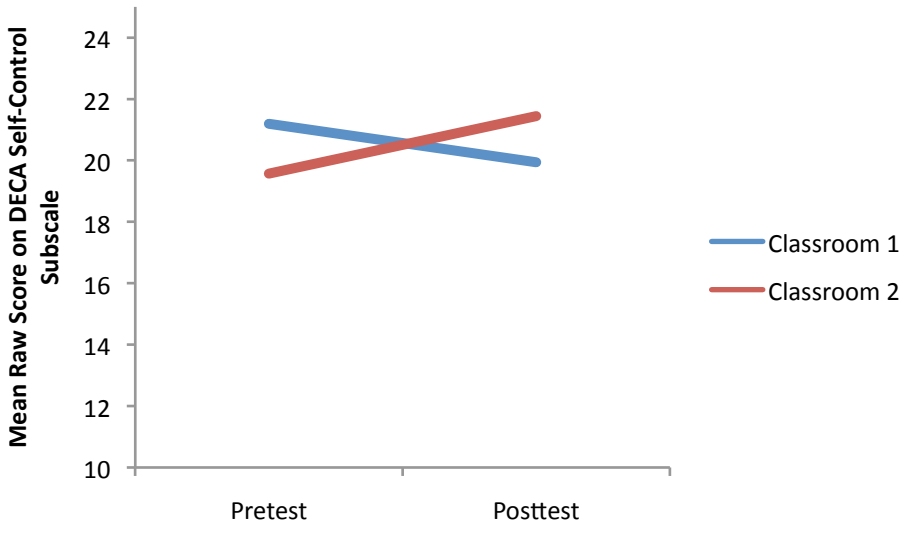


Figure 6. Mean Raw Scores on DECA Self-Control Subscale Across Classrooms

Effects of *Strong Start: Pre-K* on attachment. To answer the research question: What is the effect of participation in the *Strong Start: Pre-K* social and emotional learning curriculum on young children's ability to create and maintain mutual, strong, and lasting relationships with significant adults, a two-way repeated measures ANOVA was conducted to evaluate the effect of the *Strong Start: Pre-K* curriculum on attachment. The dependent measures variable was the Attachment subscale of the Devereux Early Childhood Assessment (LeBuffe & Naglieri, 1999). The within-subjects factor was Time (pretest and posttest), and the between-subjects factor was Class (Classroom 1, Classroom 2). The class * time interaction effect was not significant, $F(1, 37) = 0.17$, $p > .05$, indicating there was no significant difference between classrooms regarding attachment over time. Consequently, consistent with conventional analysis of variance logic, main effects of class and time were examined. The main effect of time was significant, $F(1, 37) = 10.95$, $p < .01$, $\eta 2 = .29$, indicating there was a significant increase from pretest to posttest on attachment. Table 12 shows the results of the ANOVA.

Effects of *Strong Start: Pre-K* on student knowledge. To answer the research question: What is the effect of participation in the *Strong Start: Pre-K* social and emotional learning curriculum on young children's social emotional knowledge, a two-way repeated measures ANOVA was conducted to evaluate the effect of the *Strong Start: Pre-K* curriculum on student knowledge. The dependent repeated measure variable was the Strong Start Knowledge Interview (SSKI). The within-subjects factor was Time (pretest and posttest), and the between-subjects factor was Class (Classroom 1, Classroom 2). The class * time interaction effect was significant, $F(1, 37) = 79.82$, $p <$

.001, η2 = .37, indicating there was a significant difference among classrooms regarding knowledge over time. Table 13 shows the results of the ANOVA.

Post-hoc pairwise comparisons were conducted and the Bonferroni procedure was used to control for alpha slippage (Keppel & Zedeck, 1989). The critical p-value for the pairwise comparisons was p = (.05/4) = .0125 (the p-value was divided by the total number of comparisons, which was a comparison between classrooms at each assessment period). These analyses indicated the difference in mean raw scores on the self-control measure were significantly different between classrooms at pretest (Mean Difference = -4.63, $p < .001$) and from pretest to posttest for both classroom 1(Mean Difference = -5.27, $p < .001$) and classroom 2 (Mean Difference = -1.90, $p < .01$). Figure 7 illustrates these significant differences. Consistent with AOV logic, main effects of time and class were not examined because the interaction was significant.

Table 12

Two-Way, Mixed-Effects Analysis of Variance Summary Table for the Effects of Class and Time on Attachment

Source	*df*	F	η2	*p*
Between subjects				
Class	1	.40	.01	.53
Error between	37			
Within subjects				
Time	1	10.95**	.29	<.01
Class * time	1	.17	.00	.68
Error within	37			

Note. *$p < .05$, **$p < .01$, ***$p < .001$

Table 13

Two-Way, Mixed-Effects Analysis of Variance Summary Table for the Effects of Class and Time on Content Knowledge

Source	*df*	F	η2	*p*
Between subjects				
Class	1	13.80**	.28	<.01
Error between	35			
Within subjects				
Time	1	79.82***	.70	<.001
Class * time	1	20.44***	.37	<.001
Error within	35			

Note. *$p < .05$, **$p < .01$, ***$p < .001$

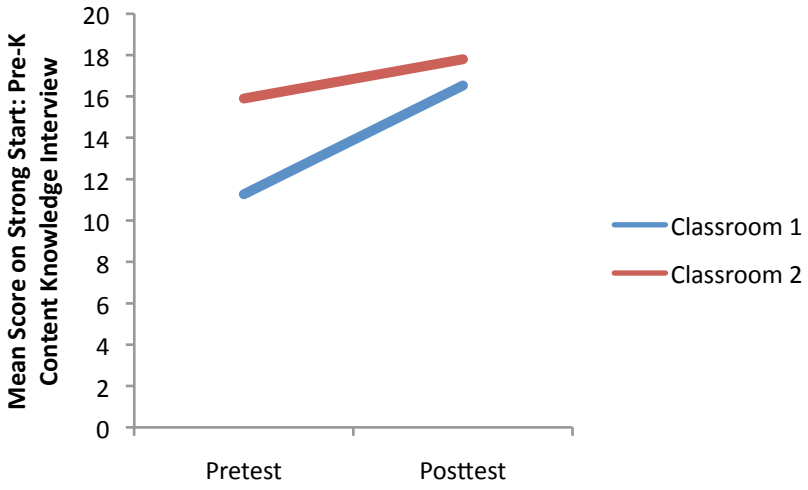


Figure 7. Means Scores on *Strong Start: Pre-K* Content Knowledge Interview

Effects of *Strong Start: Pre-K* on observed student pro-social behavior. To answer the research question: What is the effect of participation in the *Strong Start: Pre-*

K social and emotional learning curriculum on observations of student pro-social behavior, mean percentages of 10-second intervals with pro-social behavior were generated across pretest and posttest observation periods. For both classrooms, mean percentage of intervals with pro-social behavior increased from pretest to posttest. Figure 8 illustrates these differences. Mean total occurrence interobserver agreement (IOA) across classrooms and testing periods was 98%. Occurrence only and non-occurrence only IOA were 84% and 97% respectively.

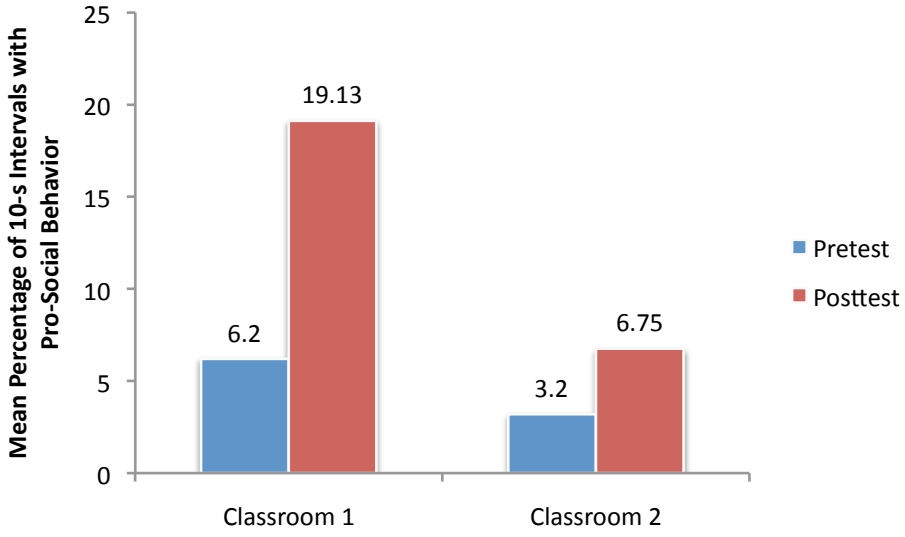


Figure 8. Mean Percentage of Intervals with Pro-Social Behavior Across Classrooms

Effects of *Strong Start: Pre-K* on observed student disruptive behavior. To answer the research question: What is the effect of participation in the *Strong Start: Pre-K* social and emotional learning curriculum on observations of student disruptive behavior, mean percentages of 10-second intervals with disruptive behavior were generated across pretest and posttest observation periods. For both classrooms, mean percentage of intervals with disruptive behavior decreased from pretest to posttest. Figure

9 illustrates these differences. Mean Total occurrence IOA across classrooms and testing periods was 98%. Occurrence only and non-occurrence only IOA were 82% and 98% respectively.

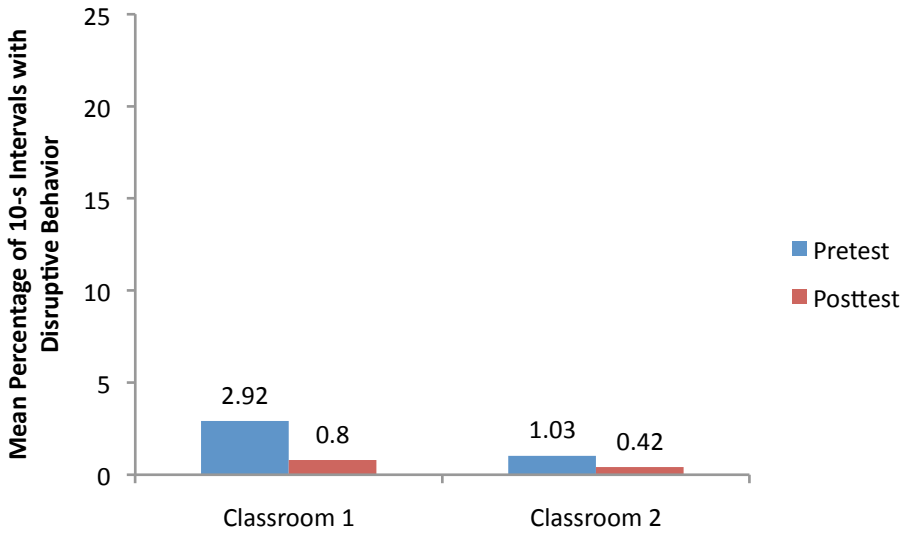


Figure 9. Mean Percentage of Intervals with Disruptive Behavior Across Classrooms

Effects of *Strong Start: Pre-K* on observed teacher social skills prompting. To answer the research question: What is the effect of participation in the *Strong Start: Pre-K* social and emotional learning curriculum on observations of teacher social skills prompting, mean percentages of 10-second intervals with social skills prompting were generated across pretest and posttest observation periods. For classroom 1, mean percentage of intervals with social skills prompting increased from pretest (1.88%) to posttest (5.20%). No social skills prompting was observed during observations of classroom 2 across pretest and posttest periods. Mean Total occurrence IOA across classrooms and testing periods was 99%. Occurrence only and non-occurrence only IOA were 94% and 98% respectively.

Effects of Strong Start: Pre-K on observed teacher social skills praise. To answer the research question: What is the effect of participation in the *Strong Start: Pre-K* social and emotional learning curriculum on observations of teacher social skills praise, mean percentages of 10-second intervals with social skills praise were generated across pretest and posttest observation periods. For classroom 1, mean percentage of intervals with social skills praise slightly decreased from pretest (3.30%) to posttest (1.03%). No social skills prompting was observed during observations of classroom 2 across pretest and posttest periods. Mean Total occurrence IOA across classrooms and testing periods was 99%. Occurrence only and non-occurrence only IOA were 98% and 99% respectively.

CHAPTER V

DISCUSSION

This section includes a summary of the main findings of this study and a discussion pertaining to interpretation of these findings. Limitations of the study are reviewed and implications for future research are discussed. The results of this study are discussed in the context of a Goal II: Development/Innovation project as outlined in the research framework of the Institute of Education Sciences (IES, 2012). Whereas Goal III research focuses on full-scale efficacy trials (e.g., RCTs), the emphasis of Goal II research is on intervention development and pilot testing.

The primary aim of this study was to investigate feasibility and acceptability of the *Strong Start: Pre-K* social-emotional learning curriculum, with a secondary aim included to gather preliminary efficacy data with preschool students and teachers in a daycare setting. Feasibility and acceptability were examined by gathering data on treatment integrity and social validity. Specifically, treatment integrity was examined through direct observations of lesson implementation and teachers' and students' attitudes regarding the curriculum were examined using a survey and brief interview. To examine preliminary evidence of effects, this study examined the impact of the *Strong Start: Pre-K* curriculum on students' knowledge of social-emotional concepts and skills, social and emotional strengths and assets, initiative, self-control, and attachment. A direct observation methodology was also piloted to examine changes in student and teacher behavior.

Summary of Implementation and Feasibility

Treatment integrity. Treatment integrity data were collected across 40% of lessons in this initial pilot study of the *Strong Start: Pre-K* curriculum with fidelity rates

ranging from 53-100% across the two classrooms. In classroom 1, the mean fidelity score across observed lessons was 91% whereas the mean fidelity score for classroom 2 was 69%. The teacher with lower rates of treatment integrity voiced concern over some of the language used in the curriculum during the training (e.g., labeling sad or angry as "not good" feelings) and stated a desire to adapt the curriculum to fit her teaching style and philosophy. As a result this may have influenced the integrity scores in her classroom. Previous research on treatment fidelity of teacher-implemented interventions is mixed. Some research suggests that among school-based interventions teachers fail to implement interventions with high accuracy without on-going coaching (DiGennaro, 2005; Noell et al., 2000). However, recent studies of the *Strong Kids* curriculum with 1st graders (Whitcomb, 2009) and 6th graders (Gueldner, 2006) suggests higher levels of fidelity may be achieved when using easy to implement, low-cost curricula, as all teachers in these studies had greater than 80% integrity across observed lessons. While some studies of social and emotional learning curricula for young children in particular have examined treatment integrity, most used trained graduate students or mental health professionals to implement the intervention (Joseph & Strain, 2003). Thus, our understanding of how well preschool teachers implement social and emotional learning curricula as intended without on-going consultation is limited. The results from this study suggest that with little training, teachers can implement the *Strong Start: Pre-K* curriculum with moderate to high levels of treatment integrity.

Embedding of curriculum. This is the first study to examine the impact of a social and emotional learning curriculum for young children on observed teacher behavior. A direct observation methodology was used to examine the impact of teachers' use of the

Strong Start: Pre-K curriculum on teachers' use of social skills prompting and praise. Results indicated a positive trend in the use of social skills prompting in classroom 1 from pretest (1.88%) to posttest (5.20%) and a slight decrease in social skills praise from pretest (3.30%) to posttest (1.03%). No instances of prompting or praise were observed in classroom 2. These data are relatively consistent with teacher reports (via weekly emails during the intervention phase) of these instructional behaviors. Both teachers reported engaging in these practices throughout the week, but at low rates. The teacher of classroom 1 reported delivering approximately 6 social skills prompts per week (about 1 per day) while the teacher in classroom 2 reported delivering approximately 17 (about 3 per day). Similarly, the teacher of classroom 1 reported delivering approximately 4 social skills praise statements per week (about 1 per day) and the teacher of classroom 2 reported delivering 17 (about 3 per day). Curriculum embedding is an important feature in many conceptual frameworks of SEL that has been minimally investigated in SEL research (Greenberg et al., 2003). Research on instructional practices outside of the context of SEL programming, has found that use of praise and prompting can affect a variety of important student behaviors including, increasing on-task time (Chalk & Bizo, 2004), decreasing disruptive behaviors (Stormont, Smith, & Lewis, 2007), managing disruptive behavior during transitions (Colvin, Sugai, Good, & Lee, 1997), and improving reading performance (Miao, Darch, & Rabren, 2002). The findings from this study suggest that additional research is greatly needed to refine the methodology used to capture teacher behavior as curriculum embedding may be a critical component of SEL that is not yet well understood. The role of teacher social skills prompting and praise is a worthy area for future investigation given the low cost of using these components and the

potential role they may play in intensifying SEL interventions for secondary or tertiary level supports (Harlacher, 2006).

Acceptability. Teachers' attitudes toward the *Strong Start: Pre-K* curriculum were mixed, although generally positive. The area in which teachers were most closely aligned and positive in their responses was their belief that the curriculum was easy to use, was a good way to teach SEL, and was effective in changing children's social and emotional knowledge and skills. In addition, both teachers agreed that the curriculum resulted in generalization of knowledge and skills into other settings, such as home. This is an important finding since the resources required for curriculum embedding in the home context were so minimal, consisting only of a parent newsletter sent home following each lesson. This finding suggests that it may be possible for knowledge and skills gained from exposure to the *Strong Start: Pre-K* curriculum to generalize into other contexts with minimal generalization support outside of the school context.

Teachers were mixed in their belief regarding how practical the amount of time required for delivery of lessons was in the *Strong Start: Pre-K* curriculum. The teacher of classroom 1, in which the mean age was younger than in classroom 2, expressed concern regarding the amount of time needed for lesson delivery. This finding may suggest that the amount of time needed to deliver the lessons may vary based on the age of participants. That is, even within the scope of preschool daycare settings that serve children approximately 3-5 years old, there may be differences in the best ways to deliver SEL programming that depend on age or other characteristics of students. This finding is in line with existing knowledge about child development. Specifically, the development of executive functioning is related to a child's ability to sit and pay attention for a

sustained amount of time (Garon, Bryson, & Smith, 2008). As the first five years of life are a critical period in the development of executive functioning, it is likely that differences in areas such as attention, memory, and self-control may be seen across this age range.

The one item that was not endorsed by either teacher had to do with the idea that social and emotional knowledge and skills would remain at an improved level even after the intervention is discontinued. This finding is somewhat surprising given that the curriculum is intended to result in learning of knowledge and skills that would be long lasting. This may reflect teachers' beliefs that environmental contingencies outside of lesson delivery are needed to support continued expression of knowledge and skills. However, given that the consumer satisfaction questionnaire was piloted in this study and thus experimental in nature, this finding might be the result of poor wording or problems with the scale in general. It must also be interpreted with caution since the sample of teachers (n =2) was limited. Future research that incorporates follow up data collection and maintenance probes could help elucidate this finding.

Summary of Preliminary Evidence of Effects of *Strong Start: Pre-K*

Impact on social and emotional strengths and resiliencies. Consistent with prior studies of social and emotional learning programs for young children, results from this study indicated that students experienced an increase in social and emotional strengths and resiliencies from pretest to posttest following the implementation of *Strong Start: Pre-K*. Greater amounts of protective factors have been found to moderate or buffer the negative effects of stress resulting in more long-term positive behavioral and psychological outcomes for children (Masten & Garmezy, 1985; LeBuffe & Neglieri,

1999). Teachers reported that children who participated in this study demonstrated overall increases in their ability to use independent thought and action to meet their needs and their ability to create mutual, strong, and long-lasting relationships with significant adults. In addition, the strength of their protective factors, as evidenced by the Total Protective Factors on the DECA increased. Surprisingly, children's' ability to experience a range of feelings and express them using appropriate words and actions significantly increased for only one classroom in this study. This finding must be interpreted with caution due to the small sample size and potential rater bias.

Impact on knowledge of social-emotional concepts and skills. Consistent with prior studies of the *Strong Kids* curriculum (Whitcomb, 2009; Harlacher, 2008; Castro-Olivo, 2006; Gueldner, 2006; Isava, 2006; Merrell, Juskelis, Tran, & Buchanan, 2006), results from this study indicated that students experienced an increase in social and emotional knowledge from pretest to posttest following the implementation of *Strong Start: Pre-K*. This is an important finding that suggests that social and emotional knowledge can be enhanced through direct instruction even in very young children. Most studies of SEL programming in preschool rely solely on adult (teacher and/or parent) ratings of student skills. This study makes an important contribution by having directly assessed child skills, thereby reducing the potential threat to validity of rater bias.

Impact on observed student behavior. This is the first study to examine the impact of a social and emotional learning curriculum for young children on observed student behavior in a naturalistic setting. A direct observation methodology was used to examine the impact of the *Strong Start: Pre-K* curriculum on rates of student pro-social and disruptive behavior displayed in their preschool classroom during free play activities.

Across both classrooms, trends in the expected direction were found from pretest to posttest on observed rates of pro-social and disruptive behavior. Classroom 1 increased from a mean rate of 6.23% to 19.13% of intervals with pro-social behavior and decreased from a mean rate of 2.92% to 0.80% of intervals with disruptive behavior. Classroom 2 increased from a mean rate of 3.20% to 6.75% of intervals with pro-social behavior and decreased from a mean rate of 1.03% to 0.42% of intervals with disruptive behavior. This was the first study to directly assess changes in pro-social and disruptive behavior following implementation of an SEL curriculum for young children through direct observations and thus the findings must be interpreted with caution due to the experimental nature of the procedures. At the same time, these results provide promising evidence that this approach may be efficacious in illustrating the impact of SEL programming.

Limitations

The results of this study should be interpreted with caution given a number of methodological limitations. The discussion below describes these limitations and delineates several threats to the study's internal validity including maturation, history, testing effects, and observer bias. These threats to internal validity are described within the context of the design used in the current research.

Design. Given the pilot nature of this study, the design chosen was used to assess feasibility of implementation, teacher acceptability, and preliminary efficacy information. The selected pretest – posttest within subjects design is not without limitations. Without a control group and random assignment to condition, it is impossible to determine whether the curriculum implementation was directly responsible for the changes in children's

prosocial behavior, knowledge and skills and teacher behavior.

Maturation. Related to the design limitation is the threat to internal validity that involves maturation. It is possible that the changes observed from pretest to posttest were the result of maturation as students aged across the period from pretest to posttest, as opposed to as a result of exposure to the curriculum. Without a control group it is difficult to determine if the cause of the discrepancy is due to maturation or the implementation of *Strong Start: Pre-K.*

Sample. This study used a small sample of students and teachers in one preschool center in the Northwest United States. Thus, generalizability of findings is greatly limited as the sample was small and fairly homogenous. Our understanding of how beneficial the curriculum would be with more diverse students and with those that experience more severe risk factors is still unknown.

Assessment. Both the knowledge interview and the direct observation methodology were piloted in this study. Thus, another limitation of this study is the use of experimental outcome measures with inadequate reliability and validity evidence. Since these tools are still in development, the results of this study must be interpreted with caution, as the measures used have not yet been found to be technical adequate. In addition, although data on general attendance rates was collected in order to describe the sample, individual student attendance during each lesson was not assessed, which may have impacted student outcomes.

History. It is possible that events outside of the study affected student responses to the intervention and teacher's ratings of student behavior. For instance, although teachers agreed not to implement other social and emotional learning curricula during the study,

the center still had procedures and policies for responding to problem behavior. It is possible that these practices may have impacted changes in student behavior and teachers' perceptions as opposed to the implementation of the *Strong Start: Pre-K* curriculum.

Testing effects. Repeatedly measuring the participants may have lead to bias. It is possible that the pretest increased children's and teacher's sensitivity to the posttest. As a result, participant's scores at posttest may have been inflated as a result of previous exposure to those same questions and testing format as well as being heightened sensitivity to possible content that they should be paying attention to while participating in the curriculum.

Observer bias. A threat to the validity of the direct observation data is observer bias, or the idea that the data gathered by observers is influenced by their expected outcomes. It is possible that trained graduate students conducting observations at posttest were expecting increases in pro-social behavior and decreases in disruptive behavior and as a result impacted the validity of these data. However, due to the high rates of inter-observer agreement it is unlikely that observer bias was solely responsible for changes seen in the direct observation data.

Implications for Future Research

The current study provides some direction for future research on *Strong Start: Pre-K* in particular and SEL programming in general. In spite of the limitations discussed above, there is promising evidence that the *Strong Start: Pre-K* curriculum is an easy to use, highly acceptable curriculum that results in increases in social and emotional resiliencies, knowledge, and skills in preschool children. Given the initial promise

gathered from the current study, well-controlled replication and extension research on the implementation of *Strong Start: Pre-K* is needed. Future research could include a control group and random assignment to condition to better distinguish between typical maturation and the impact of the intervention. In addition, future research could include a larger sample of teachers and students and examine the impact of *Strong Start: Pre-K* on varied samples including students at-risk or with higher needs as well as parceling out the age factor. Future studies might also investigate the preventative impact of *Strong Start: Pre-K* over time by conducting longitudinal studies.

The current study included several measurement challenges that should be considered in future research. Both the knowledge interview and the direct observation methodology were piloted in this study. Future research could help establish reliability and validity of the Strong Start Knowledge Interview as well as refine the direct observation measurement procedures. For example, future studies might examine the feasibility of including frequency measures of specific pro-social behaviors (e.g., initiating conversation, giving a compliment, sharing, helping, labeling feelings) into the direct observation methodology. This study examined the direct observation data descriptively. Future studies might also use single subject methodology to examine intervention outcomes by employing a multiple baseline design across several classrooms and targeting pro-social and disruptive student behavior as the dependent variables.

Teachers in both classrooms reported that several parents provided positive feedback regarding the use of Strong Start: Pre-K in their child's classroom. Specific feedback included reports that children were using skills taught in the curriculum in the home setting and reports that the parent newsletters provided useful tips to parents on

how to extend social and emotional learning in the home. However, no direct measure of parent satisfaction or ratings of student behavior was included in this study. Future research on the *Strong Start: Pre-K* curriculum could be enhanced by inclusion of parent measures of both social validity and student behavior.

This study focused primarily on individual student social-emotional behavioral outcomes. While this is an important and conceptually sound target, school-based SEL research suggests that SEL may also have a direct impact on academic outcomes as well as on the larger classroom environment (Durlak et al., 2011). Future research of *Strong Start: Pre-K* in particular and SEL programming for young children in general should include measures of pre-academic skill outcomes and classroom climate.

Conclusions

The current investigation of the impact of *Strong Start: Pre-K* on preschool students resulted in meaningful information that is promising and worthy of future study. A great deal was learned about feasible implementation, acceptability, and potential behavioral impact. Such findings provide hope for the practicality of systematic preschool-based SEL programming. As professionals within the field of early childhood education work to restructure service delivery efforts towards well-coordinated systems that take into account the needs of all children and focus on prevention and early intervention, it appears possible that brief and efficient SEL programs such as *Strong Kids: Pre-K* can provide a universal basis from which young children can develop social and emotional resiliencies. According to the IES research framework, which is based on a research paradigm developed in evidence-based medicine (e.g., Evidence-Based Medicine Working Group, 1992; Flay, 1986; Rosenberg & Donald, 1995), the purpose of

a Goal II project is to focus on development and innovation, not demonstration of the efficacy of an intervention. The current study met the objectives of a Goal II project by gathering important information about feasibility and acceptability of the intervention as well as pilot data addressing the promise of the *Strong Start: Pre-K* program for generating beneficial outcomes in preschool children. This type of study is critical in establishing the research base and laying the foundation for future scientific inquiry.

APPENDIX A

STRONG START: PRE-K TEACHER CONSENT

Dear Preschool Teachers:

My name is Sarah Levi and I am a graduate student in the school psychology program at the University of Oregon. During the 2011 – 2012 school year, I am planning on conducting a research study with preschool students. I will be evaluating a curriculum, *Strong Start: Pre-K,* which aims to help young children learn about identifying and handling emotions and basic problem-solving with peers. *Strong Start: Pre-K* includes 10 twenty – thirty-minute, activity-based lessons that are easy to implement with young children. Games/songs/activities, parent/guardian newsletters and relevant examples of children's literature are included with each lesson. Each lesson also includes "Henry," a bear that helps to communicate the specific content. The purpose of my research study is to better understand if *Strong Start: Pre-K* helps to improve children's social skills and reduce problem behavior. I am also interested in learning if teachers find *Strong Start* lessons to be worthwhile and enjoyable and use the lesson content throughout the school day.

As the project begins, I will provide training to you and other preschool teachers who are willing to implement this curriculum during the school year. Weekly preparation for the two weekly lessons will take a maximum of 15-20 minutes. The training will require 2 hours of your time. You will be asked to complete assessments of students at two points in time, which will take approximately 10 minutes per child to complete. Data collectors from the University of Oregon will be trained to observe implementation of 3-4 lessons and to observe student's use of social skills and teachers' use of the curriculum content in the classroom. Data collectors from the University of Oregon will be trained to observe implementation of 4-5 lessons. I will also be providing you with copies of the *Strong Start: Pre-K* manual and *Strong Start* parent/guardian newsletters to send home with students. At the end of the study, you will be asked to complete a questionnaire assessing your satisfaction with the curriculum that will take no more than 5 minutes. Weekly emails assessing your use of *Strong Start* skills over time will also be included and will likely take approximately 5 minutes to complete. For each email response you provide, you will be compensated with a $10 American Express gift card. In addition, at the conclusion of the study you will be compensated with an additional $150 gift card. You will also be provided with your own copy of *Strong Start.*

Given that students in your classroom will be involved in the study, they will also be asked to complete a measure that assesses their knowledge of the content at two points in time. Each assessment will take about 5 minutes for students to complete. Graduate students from the University of Oregon will be reading the questions aloud to individual children in the classroom while others are working on typical daily classroom activities. I will work with you to find an appropriate time for graduate students to come into your class to facilitate assessment administration.

Your participation in this study is voluntary. Your decision to participate will not affect your job, and you will not be evaluated for employment purposes. In order to maintain confidentiality throughout the study, data collected will be marked with a code number and your name will be removed.

In agreeing to participate, you are expressing that you are willing to support implementation of social-emotional lessons in your classroom twice per week and participate in the assessment activities. If you have questions about this project, please contact me at (914) 629-7101/ slevi@uoregon.edu, or my advisor, Dr. Laura Lee McIntyre at (541) 346-7452/ llmcinty@uoregon.edu.

Sincerely,

Sarah Levi

Your signature indicates that you have read and understand the information provided above, that you willingly agree to participate, that you may withdraw your consent at any time and discontinue participation without penalty, that you have received a copy of this form, and that you are not waiving any legal claims, rights or remedies.

Print Name:_____ Date:_____

Signature:_____

APPENDIX B

STRONG START: PRE-K PARENT/GUARDIAN CONSENT

Dear Parents/Guardians:

My name is Sarah Levi and I am a graduate student in the school psychology program at the University of Oregon. During the 2011 – 2012 school year, I am planning on conducting a research study with preschool students. I will be evaluating a curriculum, *Strong Start: Pre-K,* which aims to help young children learn about identifying and handling emotions and basic problem-solving with peers. *Strong Start: Pre-K* includes 10 thirty-minute, activity-based lessons that are easy to implement with young children. Games/songs/activities, parent/guardian newsletters and relevant examples of children's literature are included with each lesson. Each lesson also includes "Henry," a bear that helps to communicate the specific content. Your child's school has agreed to allow myself and other graduate student research assistants to teach *Strong Start: Pre-K* lessons this year in your child's classroom. The purpose of my research study is to better understand if *Strong Start: Pre-K* helps to increase children's knowledge of emotions and social skills. I am also interested in learning if teachers find *Strong Start* lessons to be worthwhile and enjoyable.

There are several assessments that will help me to achieve the purposes set forth in this study. There is one assessment that I would like to try out with the students in your child's class. The assessment will take about 10 minutes to complete and requires students to answer questions that ask about identifying emotions and handling social situations. Assessment items appear in both a written and picture format. Graduate students from the University of Oregon will be reading the questions aloud to children in the classroom while others are working on typical daily classroom activities. These assessments will be given at two different times during the study. The assessments are intended to be fun, but your child's participation is voluntary. Children are not required to participate and will not be penalized in any way if they do not participate. As both assessments and *Strong Start* lessons encourage children to think generally about their feelings and friendships, students could potentially experience feelings of discomfort, such as stress or embarrassment. If completing the assessments or lessons is upsetting to your child in any way, he/she can stop answering the questions and can talk to his/her teacher or me. Assessment forms will not have any identifying information other than a subject code number. I will have a class list with corresponding code numbers during each assessment period. Once all of the assessments have been completed, I will destroy the class list. At that point, code numbers will make it so that I cannot link any data collected back to individual children.

I will also be asking your child's teacher to rate each individual student's general affect and social behavior at two different points in time. This assessment will consist of 27 statements about social and emotional assets and strengths. Again your child's code number will be used so as to maintain his/her confidentiality. I will also be asking teachers to rate their experience with the *Strong Start* program upon its completion.

Your child's participation and your assistance in this project will help to inform use of effective and efficient instructional and assessment procedures for future use of *Strong Start: Pre-K,* a tool developed to enhance the mental health and social competence of young children**.** If you are interested in looking at the types of questions being asked or lessons being delivered in this project, I will leave copies of the assessments and curriculum with your child's teacher.

If you decide not to have your child participate in completing assessments, they will participate in Strong Start activities with the whole class, but will not complete the child assessments. In addition, your child's teacher will not complete the assessments for your child. Declining participation will in no way affect your child's standing at the EWEB Child Development Center.

If you have further questions about this project, please contact me at slevi@uoregon.edu/(914) 629-7101 or my advisor, Dr. Laura Lee McIntyre at llmcinty@uoregon.edu/(541) 346-7452. If you have questions about your child's rights as a research participant, please contact the Office for Protection of Human Subjects at the University of Oregon at 346-2510.

Please indicate if you **Do or Do NOT** give consent for your child to participate in this study by checking one of the boxes below and return this form to your child's teacher by **February 8th, 2012**.

☐ **YES**, I do give consent for my child (name)_____ to participate in this study.

☐ **NO,** I do not give consent for my child (name)_____ to participate in this study.

Print Parent/Legal Guardian name:_____

Parent/Legal Guardian Signature: _____

Date:_____

Thank you for helping me to move forward with my research project.

Sincerely,

Sarah Levi

APPENDIX C

STRONG START: PRE-K LESSON TOPICS

Lesson 1: The Feelings Exercise Group

Lesson 2: Understanding Your Feelings Part I

Lesson 3: Understanding Your Feelings Part II

Lesson 4: When You're Angry

Lesson 5: When You're Happy

Lesson 6: When You're Worried

Lesson 7: Understanding Other People's Feelings

Lesson 8: Being A Good Friend

Lesson 9: Solving People Problems

Lesson 10: Finishing Up!

APPENDIX D

STRONG START: PRE-K FIDELITY CHECKLISTS

Lesson 3:Understanding Your Feelings, Part II

Today's Date: _____ Class: _____ Observer Initials: _____

Start - End Time: _____

I. Review
_____1. Reviews previous topics/main ideas. Prompts students to remember six basic feelings.
Notes: _____

II. Introduction
_____2. Communicates that students will talk about naming feelings.
Notes: _____

III. Read a Book from the Literature List
Book Title/Author: _____
_____3. Characters' feelings and behaviors identified.
_____4. Uses relevant questions to guide discussion.
Notes: _____
_____

IV. Understanding Basic Emotions
_____5. Revisits *If You're Happy and You Know It*
_____6. Shows feeling pictures and asks students to give examples of when they have had that feeling.
_____7. Uses the pictures to show the facial features that accompany feelings
Notes: _____
_____

V. Identify Actions that Follow Feelings
_____8. Conveys that everyone has feelings and they are different at different times.
_____9. Communicates that we can have more that one feeling at the same time.
_____10. Communicates that it is important to talk about feelings.
_____11. Conveys that there are okay and not okay ways to show feelings.
Notes: _____
_____

VI. Okay and Not Okay Ways of Showing Feelings
_____12. Uses example situations to demonstrate okay and not okay ways of showing feelings.
_____13. Engages children in practice activity (stand up up/sit down).

Notes: _____
_____

VII. Closure

_____14. Teacher reminds students that it is all right to have any feeling.
_____15. Teacher reviews that there are different ways to show our feelings, **okay** and **not okay**.
Notes: _____
_____

# of Components Implemented: ____/____ Total Components X 100% =

_____% Components Implemented

Strong Start Fidelity Checklist
Lesson 5:When You're Happy

Today's Date: _____ Class: _____ Observer Initials: _____
Start - End Time: _____

I. Review
_____1. Refers to previous lesson **Feeling Angry.**
_____2. Reviews **Ways that Help** and **Ways that Hurt** in dealing with anger.
_____3. Refers to steps of Stop, Count, In, Out strategy.
Notes: _____

II. Introduction
_____4. Communicates that students will talk about feeling happy.
_____5. Communicates that students will learn what their minds and bodies feel like when happy.
_____6. Communicates that students will learn about how to make themselves feel happy when mad or sad.
Notes: _____

III. Read a Book from the Literature List
Book Title/Author: _____
_____7. Characters' feelings and behaviors identified.
_____8. Uses relevant questions to guide discussion about feeling happy.
Notes: _____
_____

IV. Show and Define Happiness
_____9. Uses Supplements 5.1 and 5.2 or gives examples of what happy faces look like.
_____10. Encourages students to share what their bodies feel like when they are happy.
_____11. Encourages children to share times when they felt happy.
_____12. Have students generate list of words that make them think of happiness.
Notes: _____
_____

V. Happy Talk
_____13. Introduces concept of *Happy Talk*
_____14. Explains to students that positive thinking can make them feel better when they experience not good feelings. Provides examples.
_____15. Describes how in Happy Talk children can first use Stop, Count, Breath In, Breath out and then remind themselves that everything is going to be okay.
_____16. Models (uses Henry to role play) an example and nonexample of using Happy Talk.
Notes: _____

_____

VI. Closure

_____17. Teacher reviews with students that everyone feels happy sometimes.

_____18. Teacher reminds students to use **Positive Thinking** when they are having not good feelings.

Notes: _____

# of Components Implemented: ____/____ Total Components X 100% =

_____% Components Implemented

***Strong Start* Fidelity Checklist**
Lesson 8: Being a Good Friend

Today's Date: _____ Class: _____ Observer Initials: _____
Start - End Time: _____

I. Review

_____1. Refers to previous lesson **Understanding Other People's Feelings.**
_____2. Reviews body clues that tell us how others are feeling
Notes:
_____

II. Introduction

_____3. Communicates that students will talk about being good friends.
_____4. Communicates that students will learn about how to use words, eyes, ears and bodies to help make friends.
Notes:
_____

III. Read a Book from the Literature List

Book Title/Author: _____
_____5. Characters' feelings and behaviors identified.
_____6. Uses relevant questions to guide discussion about being a good friend.
Notes:
_____

IV. Talking and Listening

_____7. Encourages students to use a nice voice (soft and gentle) when talking to friends.
_____8. Encourages students to use their eyes, ears, and bodies to show that they are listening to friends.
_____9. Uses Henry to model examples and nonexamples of using a nice voice and being a good listener.
Notes:
_____

V. Approaching Others

_____10. Explains how to begin a friendship or activity with friends.
_____11. Brainstorms list of ways to show others you want to be a friend.

VI. Sharing and Working Together/Activity

_____12. Explains that good friends share and work together.
_____13. Models sharing with Henry.

VII. Closure

_____14. Reviews concepts related to being a good friend (e.g. using nice voices, listening ears, kind words.)

_____15. Reviews that being a good friend makes it easier to work together and share.
Notes: _____

# of Components Implemented: ____/____ Total Components X 100% =

_____% Components Implemented

APPENDIX E

TEACHER EMAIL EXAMPLE

Dear Teacher X,

I am writing to check in on the Strong Start Project. Please respond to the 5 questions below regarding your use of the curriculum this week. If you are able to complete this reply by Monday at 5pm, you will receive a $10 gift certificate for your time.

Thank you for your continued involvement in this project!

Sarah Levi, M.S.
Principal Investigator
Strong Start Project

Questions

1. Did you implement lessons 4 and 5 this week?

2. How many times did you prompt for social skills this week?
0-2 3-5 6-8 9-11 12-14 15-17 18+

3. Please include 2 examples of social skills prompts you provided this week:
   a.
   b.

4. How many times did you praise students for demonstration of social skills this week?
0-2 3-5 6-8 9-11 12-14 15-17 18+

5. Please include 2 examples of social skills praise you provided this week:
   a.
   b.

APPENDIX F

TEACHER SATISFACTION QUESTIONNAIRE

Please evaluate the Strong Start: Pre-K curriculum by circling the number which best describes your agreement or disagreement with each statement. Please circle only one number for each item.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. This is an acceptable curriculum for teaching social and emotional skills	1	2	3	4	5
2. Most teachers would find this curriculum appropriate for teaching social and emotional skills	1	2	3	4	5
3. Teachers are likely to use this curriculum because it requires little training to implement effectively	1	2	3	4	5
4. This curriculum is practical in the amount of time required for preparation of lessons	1	2	3	4	5
5. This curriculum is practical in the amount of time required for delivery of lessons	1	2	3	4	5
6. The curriculum is effective in changing children's social and emotional knowledge and skills	1	2	3	4	5
7. I would suggest the use of this curriculum to other teachers	1	2	3	4	5
8. I would be willing to use this in the classroom again	1	2	3	4	5
9. The curriculum does not result in negative side effects for children	1	2	3	4	5
10. The curriculum is an appropriate intervention for a variety of children	1	2	3	4	5
11. I like the procedures used in the curriculum	1	2	3	4	5
12. This curriculum was a good way to teach social and emotional skills	1	2	3	4	5
13. The curriculum would produce a lasting improvement in child social and emotional knowledge and skills	1	2	3	4	5
14. Soon after using the curriculum, a teacher would notice a positive change in student's social and emotional knowledge and skills	1	2	3	4	5

15. The children's social and emotional knowledge and skills would remain at an improved level even after the intervention is discontinued	1	2	3	4	5
16. Using the curriculum should not only improve the child's use of social and emotional knowledge and skills in the classroom, but also in other settings	1	2	3	4	5

1) Please Note Any Additional Comments Regarding Strong Start: Pre-K Below:

_____

_____

_____

_____

_____

_____

2) Do you feel that Strong Start: Pre-K was effective for your students? Why or why not?

_____

_____

_____

_____

_____

_____

3) Would you recommend Strong Start: Pre-K to other teachers? Why or why not?

_____

_____

_____

_____

_____

APPENDIX G

STUDENT SOCIAL VALIDITY INTERVIEW

Assessor reads: **Remember the Strong Start lessons you did with your class – Remember Henry the Bear? Henry was part of the Strong Start lessons and you and your class talked about feelings, friends, and solving problems. Do you remember? Ok, let's get started. I am going to read a couple of statements about Strong Start to you. Please give a thumb up for yes, a thumb down for no, or a thumb to the side, for kind of** (assessor models thumb behavior while explaining directions).

1. I liked Strong Start

2. I learned a lot from Strong Start

3. I had fun doing Strong Start

Student	Q1			Q2			Q3		
1	Y	N	K	Y	N	K	Y	N	K
2	Y	N	K	Y	N	K	Y	N	K
3	Y	N	K	Y	N	K	Y	N	K
4	Y	N	K	Y	N	K	Y	N	K
5	Y	N	K	Y	N	K	Y	N	K
6	Y	N	K	Y	N	K	Y	N	K
7	Y	N	K	Y	N	K	Y	N	K
8	Y	N	K	Y	N	K	Y	N	K

APPENDIX H

DEVEREUX EARLY CHILDHOOD ASSESSMENT

DECA

Today's date _____/_____/_____ Child's birth date___/___/___

Child's sex ☐ male ☐ female

This form describes a number of behaviors seen in some young children. Read each statement and place a check mark in the box underneath the word that tells how often you saw the behavior **during the past 4 weeks.**

During the past 4 weeks, how often did the child…	**Never**	**Rarely**	**Occasionally**	**Frequently**	**Very Frequently**
Act in a way that made adults smile or show interest in her/him?					
Do things for himself/herself?					
Choose to do a task that was challenging for her/him?					
Respond positively to adult comforting when upset?					
Participate actively in make-believe play with others (dress up, etc.)?					
Fail to show joy or gladness at a happy occasion?					
Show affection for familiar adults?					
Keep trying when unsuccessful (act					

persistent)?					
Have no reaction to children/adults?					
Try different ways to solve a problem?					
Act happy or excited when parent/guardian returned?					
Try or ask to try new things or activities?					
Start or organize play with other children?					
Show patience?					
Ask adults to play with or read to him/her?					
Have a short attention span (difficulty concentrating)?					
Focus his/her attention or concentrate on a task or activity?					
Share with other children?					
Say positive things about the future (act optimistically)?					
Trust familiar adults and believe what they say?					
Seek help from children/adults when necessary					
Ask other children to play with him/her?					

Cooperate with others?					
Calm himself/herself down when upset?					
Get easily distracted?					
Make decisions for himself/herself?					
Show an interest in what children/adults are doing?					

APPENDIX I

STRONG START KNOWLEDGE INTERVIEW

1. Point to the face showing “happy”

Happy Sad Scared Angry Surprised Disgusted

2. Point to the face showing “sad”

Happy Sad Scared Angry Surprised Disgusted

3. Point to the face showing “afraid”

Happy Sad Scared Angry Surprised Disgusted

4. Point to the face showing “angry”

Happy Sad Scared Angry Surprised Disgusted

5. Point to the face showing “surprised”

Happy Sad Scared Angry Surprised Disgusted

6. Point to the face showing “disgusted”

Happy Sad Scared Angry Surprised Disgusted

7. Is happy a good feeling?

YES NO

8. Is sad a good feeling?

YES NO

9. Is angry a good feeling?

YES NO

10. Henry’s friend is not at school today and he misses him. He feels sad. Henry tells his teacher how he is feeling. Is this an okay way or a not an okay way of showing how he feels?

OKAY NOT OKAY

11. A friend borrows Henry's blocks without asking. Henry pulls the blocks out of his friend's hand. Is this an okay way or a not an okay way of showing how he feels?

OKAY NOT OKAY

12. Henry wanted to play outside, but his mom said no. Henry was mad and yelled "You're mean!" Is this a way that hurts or a way that helps?

HELPS HURTS

13. If you are feeling angry, one thing you can do to feel better is to, Stop, Count to 10, and then what?

Answer: Breathe in and breathe out.

Write what the child says:

_____
__

14. Henry wanted to watch tv, but his dad said no. Henry took a breath. He said, "That's ok, I'll just play with my legos." Did Henry use happy talk?

YES NO

15. Henry wanted ice cream after dinner, but they did not have any more at home. Henry yelled, "I WANT ice cream, I WANT ice cream!" Did Henry use happy talk?

YES NO

16. Henry yelled at his friend, "Hey, let me have that truck!" Did Henry use a nice voice?

YES NO

17. How do you think Henry's friend felt? Point to the picture

18. Is listening to each other and using a nice voice a way to be a good friend?

YES NO

19. Henry wants to play on the swing with his friend. But, his friend wants to play in the sand box. Henry and his friend decide to first play in the sand and then swing. Are they problem-solving?

YES NO

20. Henry wants to play on the swing with his friend. But, his friend wants to play in the sand box. Henry does not listen to his friend's idea and says, "I'm not going to play with you anymore." Are they problem-solving?

YES NO

APPENDIX J

DIRECT OBERVATION DATA COLLECTION FORM

Classroom ID:_____	Student ID:_____
Observer Initials:_____	Date: _____
Circle One: Pre Post	Time:_____

Operational Definitions

Teacher Codes

1. Social Skills Prompt: Any prompting or pre-teaching for social skills (e.g., "What are you feeling?"; Jane, you look angry, use the stop, count, breathe in, breathe out, strategy"; "Brad, use happy talk"; "Take a walk to the water fountain if you are upset." "Is that a way that helps or a way that hurts?").

Examples:	Non-Examples:
"What are you feeling?" "Jane, you look angry, use the stop, count, breathe in, breathe out, strategy" "Brad, use happy talk."	"What is 1+1?" "Nice job being a good friend to Paul!"

2. Social Skills Praise: Any praise provided contingent on student demonstration of social skills (e.g., "Nice job identifying how you feel!" "Nice job using calm feet!" "Great job using the stop, count, breath in, breathe out strategy!" "Awesome! You used a way that helps to solve that problem!")

Examples:	Non-Examples:
"Nice job identifying how you feel!" Following Brad's statement that he feels happy today, the teacher said, "Awesome!"	"Tell me what you feel." "Good coloring Misty!"

Student Codes

1. Pro-Social Behavior: Any demonstration by a student of a pro-social behavior (e.g., labeling their emotion, asking a peer to play, using the stop, count, breathe in, breathe out strategy, using happy talk).

Examples:	Non-Example:
Jimmy says, "John – you look happy!" Bryan asks, "Tanya, can I play with you?"	Marissa hits another student Marcos runs away when the teacher tells him it is time to line up

2. Disruptive Behavior: Any demonstration by a student of verbal or physical disruptive behavior (e.g., hitting another child, intentionally destroying a toy, screaming).

Examples:	Non-Example:
Jimmy fails to follow a teacher direction within 5-seconds of the direction Michel hits another child	Juan follows the teacher direction with 5-seconds Brandon keeps his hands to himself during play

Data Collection Instructions:

For **ALL CODES**, use a partial interval recording method – if the teacher provides a social skills prompt or social skills praise for any part of the interval place a + in the corresponding box – otherwise place a 0 in the box. If the student engages in pro-social or disruptive behavior for any part of the interval place a + in the corresponding box – otherwise place a 0 in the box.

		Teacher Codes		Student Codes	
Minute	Interval	SS-Prompt	SS-Praise	Pro-Social	Disrupt Beh
1	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
2	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
3	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
4	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
5	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
6	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
7	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				

8	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
9	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
10	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
11	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
12	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
13	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
14	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
15	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
16	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				

17	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
18	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
19	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				
20	00-10				
	10-20				
	20-30				
	30-40				
	40-50				
	50-60				

Data Summary

Teacher Codes

SS-Prompt occurred during: _____# of intervals/200 X 100% = _____% of intervals

SS-Praise occurred during: _____# of intervals/200 X 100% = _____% of intervals

Student Codes

Pro-Social Behavior occurred during: _____# of intervals/200 X 100% = _____% of intervals

Di**sruptive Behavior** occurred during: _____# of intervals/200 X 100% = _____% of intervals

REFERENCES CITED

Alexander, K. L., Entwisle, D. R., & Dauber, S. L. (1993). First grade classroom behavior: Its short and long-term consequences for school performance. *Child Development, 64,* 801-814.

Andersen, R.M. (1995). Revisiting the behavioral model and access to medical care: does it matter? *Journal of Health and Social Behavior, 36*, 1-10.

Arnold, D. H., Ortiz, C., Curry, J. C., Stowe, R. M., Goldstein, N. E., Fisher, P. H. et al. (1999). Promoting academic success and preventing disruptive behavior disorders through community partnership. *Journal of Community Psychology, 5,* 589-598.

Berry-Krazmien, C., & Torres-Fernandez, I. (2007, March). *Implementation of the Strong Kids curriculum in a residential facility*. Poster presentation at the meeting of the National Association of School Psychologists, New York, NY.

Bierman, K. L., Domitrovich, C. E., Nix, R. L., Gest, S. D., Welsh, J. A., Greenberg, M. T. et al. (2008). Promoting academic and social-emotional school readiness: The Head Start REDI Program. *Child Development, 79,* 1802-1817.

Bowman, B. T., Donovan, S., & Burns, M. S., (2000). *Eager to learn: Educating our preschoolers.* Washington, DC: National Academy Press.

Bracken, B. A. (1987). Limitations of preschool instruments and standards for minimal levels of technical adequacy. *Journal of Psychoeducational Assessment, 5,* 313-326.

Caldarella, P., Christensen, L., Kramer, T. J., & Kronmiller, K. (2009). The effects of Strong Start on second grades students' emotional and social competence. *Early Childhood Education Journal, 37*, 51-56.

Campbell, S. B. (1995). Behavior problems in preschool children: A review of recent research. *Journal of Child Psychology and Psychiatry*, *36*, 113–149.

Castro Olivo, S. (2006). *The effects of a culturally-adapted social-emotional learning curriculum on social-emotional and academic outcomes of latino immigrant high school students*. Unpublished doctoral dissertation, University of Oregon, Eugene.

Chalk, K., & Bizo, L. A. (2004). Specific praise improves on-task behaviour and numeracy enjoyment: A study of year four pupils engaged in the numeracy hour. *Educational Psychology in Practice, 20,* 336-350.

Collaborative for Academic, Social, and Emotional Learning (2008). Background on social and emotional learning. Retrieved August 22, 2010 from http://www.casel.org/downloads/SEL&CASELbackground.pdf.

Colvin, G., Sugai, G., Good, R. H., & Lee, Y. (1997). Using active supervision and precorrection to improve transition behaviors in an elementary school. *School Psychology Quarterly, 12,* 344-363.

Costello E.J., & Janiszewski, S. (1990). Who gets treated? Factors associated with referral in children with psychiatric disorders. *Acta Psychiatrica Scandinavica, 81*, 523–529.

Cunningham P.J., & Freiman, M.P. (1996). Determinants of ambulatory mental health services use for school-age children and adolescents. *Health Services Research, 31*, 409–427.

DiGennaro, F. D., Martens, B. K., & McIntyre, L. L. (2005). Increasing treatment integrity through negative reinforcement: Effects on teacher and student behavior. *School Psychology Review, 34*, 220–231.

Doll, B., & Lyon, M. A. (1998). Risk and resilience: Implications for the delivery of educational and mental health services in schools. *School Psychology Review, 27*, 348-363.

Domitrovich, C. E., & Greenberg, M. T. (2000). The study of implementation: Current findings from effective programs that prevent mental disorders in school-aged children. *Journal of Educational & Psychological Consultation, 11*, 193–221.

Domitrovich, C. E., Greenberg, M. T., Kusche, C., & Cortes, R. (2004). *Manual for the Preschool PATHS Curriculum*. South Deerfield, MA: Channing-Bete Company.

Domitrovich, C. E., Cortes, R. C., & Greenberg, M. T. (2007). Improving young children's social and emotional competence: A randomized trial of the Preschool PATHS Curriculum. *Journal of Primary Prevention, 28*, 67-91.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor,R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*, 405-432.

Epstein, M. H., & Synahorst, L. (2009). Preschool behavioral and emotional rating scale (PreBERS): Test-Retest reliability and inter-rater reliability. *Journal of Child and Family Studies, 17,* 853-862.

Evidence-Based Medicine Working Group (1992). Evidence based medicine: A new approach to teaching the practice of medicine. *Journal of the American Medical Association, 268,* 2420–2425.

Fantuzzo, J., Bulotsky-Shearer, R., McDermott, P. A., McWayne, C., Frye, D., & Perlman, S. (2007). Investigating dimensions of social-emotional classroom behavior and school readiness for low-income urban preschool children. *School Psychology Review, 36,* 44-62.

Faust, J. J. (2006). *Preventing depression and anxiety: An evaluation of a social-emotional curriculum*. Unpublished education specialist project, University of Wisconsin, Whitewater.

Flay, B.R. (1986). Efficacy and effectiveness trials (and other phases of research) in the development of health promotion programs. *Preventive Medicine, 14*, 451-474.

Fox , L., & Hemmeter, M.L. (2009). A program-wide model for supporting social emotional development and addressing challenging behavior in early childhood settings. In W. Sailor, G. Dunlap, G. Sugai, and R. Horner (Eds.), *Handbook of positive behavior support* (pp.177-202). New York, NY: Springer.

Feuerborn, L. L. (2004). *Promoting emotional resiliency through classroom instruction: The effects of a classroom-based prevention program*. Unpublished doctoral dissertation, University of Oregon, Eugene.

Gadow, K.D., & Nolan, E.E. (2002). Differences between preschool children with ODD, ADHD, and ODD + ADHD symptoms. *Journal of Child Psychology and Psychiatry, 43*, 191-201.

Garon, N., Bryson, S.E., & Smith, I.M. (2008). Executive functioning in preschoolers: A review using an integrative framework. *Psychological Bulletin, 134,* 31-60.

Greenberg, M. T., Weissberg, R. P., O'Brien, M. U., Zins, J. E., Fredericks, L., Resnik, H., et al. (2003). Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning. *American Psychologist, 58*, 466–474.

Greenspan, S.I., & Meisels, S.J. (1996). Toward a new vision for the developmental assessment of infants and young children. *Zero to Three, 14,* 1-8.

Gueldner, B. A. (2006). *An investigation of the effectiveness of a social-emotional learning program with middle school students in a general education setting and the impact of consultation support using performance feedback*. Unpublished doctoral dissertation, University of Oregon, Eugene.

Halfon, N., Mendonca A., & Berkowitz G. (1995). Health status of children in foster care: The experience of the center for the vulnerable child. *Archives of Pediatric and Adolescent Medicine, 149*, 386-392.

Han, S. S., & Weiss, B. (2005). Sustainability of teacher implemen- tation of school-based mental health programs. *Journal of Abnormal Child Psychology, 33*, 665–679.

Harlacher, J. E. (2008). *Social and emotional learning as a universal level of support: Evaluating the follow-up effect of Strong Kids on social and emotional outcomes*. Unpublished doctoral dissertation, University of Oregon, Eugene.

Herman, K. C., Merrell, K. W., Reinke, W. M., & Tucker, C. M. (2004). The role of school psychologists in preventing depression. *Psychology in the Schools, 41,* 763-775.

Hoagwood K., Burns, B. J., Kiser, L., Ringeisen, H., Schoenald, S. K. (2001). Evidence-based practice in child and adolescent mental health. *Psychiatric Services, 52*, 1179-1189.

Ialongo, N. S., Werthamer, L., Kellam, S. G., Brown, C. H., Wang, S., & Lin, Y. (1999). Proximal impact of two first-grade preventive interventions on the early risk behaviors for later substance abuse, depression, and antisocial behavior. *American Journal of Community Psychology, 27*, 599–641.

Institute of Education Sciences (2012). Request for Applications. U.S. Department of Education.

Isava, D. M. (2006). *An investigation of the impact of a social-emotional learning curriculum on problem symptoms and knowledge gains among adolescents in a residential treatment center*. Unpublished doctoral dissertation, University of Oregon, Eugene.

Izard, C. E., Trentacosta, C. J., King, K. A., & Mostow, A. J. (2004). An emotion-based prevention program for Head Start children. *Early Education and Development*, *15,* 407-422.

Jimerson, S., Egeland, B., Sroufe, A., & Carlson, B. (2000). A prospective longitudinal study of high school dropouts examining multiple predictors across development. *Journal of School Psychology, 38,* 525-549.

Johnston, J.M., & Pennypacker, H.S. (1993). *Strategies and tactics of behavioral research* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.

Joseph, G. E., & Strain, P. S. (2003). Comprehensive evidence-based social-emotional curricula for young children: An analysis of efficacious adoption potential. *Topics in Early Childhood Special Education, 23*, 65–76.

Keppel, G. & Zedeck, S. (1989). *Data analysis for research designs.* New York: W.H. Freeman and Company.

Klerman, G. L., & Weissman, M. M. (1989). Increasing rates of depression. *Journal of the American Medical Association, 261*, 2229-2235.

Kramer, T. J., Caldarella, P., Christensen, L., & Shatzer, R. H. (2010). Social-emotional learning in kindergarten classrooms: Evaluation of the Strong Start curriculum. *Early Childhood Education Journal, 37*, 303-398.

Kupersmidt, J. B., & Coie, J. D. (1990). Preadolescent peer status, aggression, and school adjustment as predictors of externalizing problems in adolescence. *Child Development,*
61, 1350-1362.

Kusche, C. A., & Greenberg, M. T. (1994). *The PATHS curriculum*. South Deerfield, MA: Channing- Bete Co.

Ladd, G. W., Kochenderfer, B. J. & Coleman, C. (1997). Classroom peer acceptance, friendship and victimization: Distinct relational systems that contribute uniquely to children's school adjustment. *Child Development, 68*, 1181-1197.

Leaf, P.J., Alegria, M., Cohen, P., et al. (1996). Mental health service use in the community and schools: results from the four-community MECA study. *Journal of the American Academy of Child and Adolescent Psychiatry, 35,* 889-897.

LeBuffe, P.A., & Naglieri, J.A. (1999). *The Devereux Early Childhood Assessment*. Lewisville, NC: Kaplan Press.

Levitt, V. H. (2009). *Promoting social-emotional competency through quality teaching practices: The impact of consultation on a multidimensional treatment integrity model of the Strong Kids program*. Unpublished doctoral dissertation, University of Oregon, Eugene.

Marchant, M., Brown, M., Caldarella, P., & Young, E. (2010). Effects of Strong Kids curriculum on students with internalizing behaviors: A pilot study. *Journal of Evidence-Based Practices for Schools, 11*, 124-143.

Masten, A. S., & Garmezy, N. (1985). *Risk, vulnerability and protective factors in developmental psychopathology.* In B. B. Lahey & A. E. Kazdin (Eds.), *Advances in clinical child psychology.* New York: Plenum.

McLelland, M. M., Morrison, F. J., & Holmes, D. L. (2000). Children at risk for early academic problems: The role of learning-related social skills. *Early Childhood Research Quarterly, 15,* 307-329.

Mendez, J. L., Fantuzzo, J., & Cicchetti, D. (2002). Profiles of social competence among low income African American preschool children. *Child Development, 73*, 1085-1100.

Merikangas, K. R., Nakamura, E. F., & Kessler, R. C. (2009). Epidemiology of mental disorders in children and adolescents. *Dialogues in Clinical Neuroscience*, *11*, 7-20.

Merrell, K. W. (2010). Linking prevention science and social-emotional learning: The Oregon Resiliency Project. *Psychology in the Schools, 47*, 55-70.

Merrell, K.W., & Buchanan, R. (2006). Intervention selection in school-based practice: Using public health models to enhance systems capacity of schools. *School Psychology Review, 35,* 167-180.

Merrell, K. W., & Gueldner, B. A. (2010). *Social and emotional learning in the classroom: Promoting mental health and academic success.* New York, NY: Guilford Press.

Merrell, K. W., Juskelis, M. P., Tran, O. K., & Buchanan, R. (2008). Social and emotional learning in the classroom: Impact of Strong Kids and Strong Teens on students' social-emotional knowledge and symptoms. *Journal of Applied School Psychology*, 24, 209-224.

Merrell, K. W., Whitcomb, S. A., & Parisi, D. (2008). *Strong Start: Pre-K: A social and emotional learning curriculum*. Peoria, IL: Paul H. Brookes Publishing Co.

Miao, Y., Darch, C., & Rabren, K. (2002). Use of precorrection strategies to enhance reading performance of students with learning and behavior problems. *Journal of Instructional Psychology, 29*, 162-174.

Miller-Johnson, S., Coie, J. D., Maumary-Gremaud, A., Lochman, J., & Terry, R. (1999). Relationship between childhood peer rejection and aggression and adolescent delinquency severity and type among African American youth. *Journal of Emotional and Behavioral Disorders, 7,* 137-146.

Nakayama, N. J. (2008). *An investigation of the impact of the Strong Kids curriculum on social-emotional knowledge and symptoms of elementary aged students in a self-contained special education setting*. Unpublished doctoral dissertation, University of Oregon, Eugene.

Noell, G.H., Witt, J.C., LaFleur, L.H., Mortenson, B.P., Ranier, D.D., & LeVelle, J. (2000). Increasing intervention implementation in general education following consultation: A comparison of two follow-strategies. *Journal of Applied Behavior Analysis, 33,* 271-284.

O'Connell, M.E., Boat, T., & Warner, K.E. (2009). *Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities.* Washington, DC: National Academies Press.

Olsen, S. L., & Hoza, B. (1993). Preschool developmental antecedents of conduct problems in children beginning school. *Journal of Clinical Child & Adolescent Psychology, 22,* 60-67.

O'Neil, R., Walsh, M., Parke, R. D., Wang, S. & Strand, C. (1997). A longitudinal assessment of the academic correlates of early peer acceptance and rejection. *Journal of Clinical Child Psychology, 26,* 290-303.

Owens, P.L., Hoagwood, K., Horwitz, S.M., Leaf, P.J., Poduska, J.M., Kellam, S.G., & Ialongo, N.S. (2002). Barriers to children's mental health services. *Journal of American of Child and Adolescent Psychiatry, 41*, 731-738.

Padgett, D.K., Patrick, C., Burns, B.J., Schlesinger, H.J., & Cohen, J. (1993). The effect of insurance benefit changes on use of child and adolescent outpatient mental health services. *Medical Care, 31*, 96-110.

Parker, J. G., & Asher, S. R. (1987). Peer relations and later personal adjustment: Are low-accepted children at risk? *Psychological Bulletin, 102,* 357-389.

Payton, J., Weissberg, R.P., Durlak, J.A., Dymincki, A.B., Taylor, R.D., Schellinger, K.B., & Pachan, M. (2008). *The positive impact of social and emotional learning for kindergarten to eighth-grade students: Findings from three scientific reviews.* Chicago, IL: Collaborative for Academic, Social, and Emotional Learning.

Powell, D., Dunlap, G., & Fox, L. (2006). Prevention and intervention for the challenging behaviors of toddlers and preschoolers. *Infants and Young Children, 19*, 25-35.

Rosenberg W., & Donald A. (1995). Evidence based medicine: an approach to clinical problem-solving. *British Medical Journal, 310,* 1122–1126.

Rounsaville, B.J. Carroll, K.M., & Onken, L.S. (2001). A stage model of behavioral therapies research: Getting started and moving on from Stage I. *Clinical Psychology: Science and Practices, 8* (2), 133-142.

Shonkoff, J. P., & Phillips, D. A. (2000). *From neurons to neighborhoods: The science of early childhood development.* Washington, DC: National Academies Press.

Shure, M. (2000). *I Can Problem Solve (ICPS): An interpersonal cognitive problem-solving program for children.* Champaign, IL: Research Press.

Shure, M. B., & Spivak, G. (1982). Interpersonal cognitive problem solving in young children: A cognitive approach to prevention. *American Journal of Community Psychology*, *10,* 341-356.

Stormont, M. A., Smith, S. C., & Lewis, T. J. (2007). Teacher implementation of precorrection and praise statements in Head Start classrooms as a component of a program-wide system of positive behavior support. *Journal of Behavioral Education, 16,* 280-290.

U.S. Department of Education (2005). *Technical Assistance Center on Positive Behavioral Interventions and Support.* Retrieved April 22, 2011 from http://www.pbis.org/main/htm

Vitaro, F., Larocque, D., Janosz, M., & Tremblay, R. E. (2001). Negative social experiences and dropping out of school. *Journal of Educational Psychology, 93*, 312-319.

Von Brock, M. B., & Elliott, S. N. (1987). The influence of treatment effectiveness information on the acceptability of classroom interventions. *Journal of School Psychology, 25,* 131-144.

Walker, H. M., Horner, R. H., Sugai, G., Bullis, M., Sprague, J. R., & Bricker, D., & Kaufman, M. J. (1996). Integrated approaches to preventing antisocial behavior patterns among school age children and youth. *Journal of Emotional and Behavioral Disorders*, *4*, 194-209.

Webster-Stratton, C. (1990). Long-term follow-up of families with young conduct problem children: From preschool to grade school. *Journal of Clinical Child Psychology 19*, 144-149.

Webster-Stratton, C. H., & Hammond, M. (1997). Treating children with early-onset conduct problems: A comparison of child and parent training interventions. *Journal of Counseling and Clinical Psychology, 65*, 93-109.

Webster-Stratton, C., & Reid, J. (2003). Training Head Start parents and teachers in a partnership model to promote children's school readiness and social competence: A strategy to prevent substance abuse and conduct problems. In P. Tolin (Ed.), *Preventing substance abuse*.

Webster-Stratton, C., & Reid, J. (2004). Treating conduct problems and strengthening social and emotional competence in young children (ages 4–8 years): The Dina Dinosaur treatment program. *Journal of Emotional and Behavioral Disorders, 29*, 221-240.

Wells, J., Barlow, J., & Stweart-Brown, S. (2003). A systematic review of universal approaches to mental health promotion in schools. Health Education, 103, 197-220.

West, J., Denton, K., & Reaney, L.M. (2001). *The kindergarten years: Findings from the Early Childhood Longitudinal Study.* Washington, DC: National Center for Education Statistics.

Whitcomb, S. A. (2009). *Strong Start: Impact of direct teaching of a social emotional learning curriculum and infusion of skills on emotion knowledge of first grade students*. Unpublished doctoral dissertation, University of Oregon, Eugene.

White, J., Moffitt, T. E., Earls, F., Robins, L., & Silva, P. (1990). How early can we tell? Predictors of childhood and adolescent delinquency. *Criminology, 28,* 507-535.

World Health Organization (2004). *Prevention of mental disorders: Effective interventions and policy options: A summary report.* Geneva, Switzerland: World Health Organization. Department of Mental Health and Substance Abuse.