A comparison of two interventions in a response to intervention (RtI) framework across student problem type

Lisa Maloney

Follow this and additional works at: https://dsc.duq.edu/etd

Recommended Citation

This Immediate Access is brought to you for free and open access by Duquesne Scholarship Collection. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of Duquesne Scholarship Collection. For more information, please contact phillipsg@duq.edu.
A COMPARISON OF TWO INTERVENTIONS IN A RESPONSE TO INTERVENTION (RTI) FRAMEWORK ACROSS STUDENT PROBLEM TYPE

A Dissertation

Submitted to the School of Education

Duquesne University

In partial fulfillment of the requirements for

the degree of Doctor of Philosophy

By

Lisa A. Maloney, M.Ed., NCC, NCSC

May 2015
Copyright by

Lisa A. Maloney

2015
DUQUESNE UNIVERSITY
SCHOOL OF EDUCATION
Department of Counseling, Psychology and Special Education

Dissertation

Submitted in Partial Fulfillment of the Requirements
For the Degree of Doctor of Philosophy (Ph.D.)

Executive Counselor Education and Supervision Program

Presented by:

Lisa Maloney
B.S., Human Development & Family Studies/Child Adolescent Development
M.S.Ed, Counselor Education – School/Elementary

MARCH 16, 2015

A COMPARISON OF TWO INTERVENTIONS IN A RESPONSE TO INTERVENTION (RTI) FRAMEWORK ACROSS STUDENT PROBLEM TYPE

Approved by:

_____________________________________________, Chair
Jered Kolbert, Ph.D.
Professor of Counselor Education
Department of Counseling, Psychology, and Special Education
School of Education
Duquesne University

_____________________________________________, Member
Matthew Bundick, Ph.D.
Associate Professor of Counselor Education
Department of Counseling, Psychology, and Special Education
School of Education
Duquesne University

_____________________________________________, Member
Laura Crothers, D.Ed.
Associate Professor of School Psychology
Department of Counseling, Psychology, and Special Education
School of Education
Duquesne University

_____________________________________________, Member
Rachel Robertson, Ph.D.
Assistant Professor of Special Education
School of Education
University of Pittsburgh

iii
ABSTRACT

A COMPARISON OF TWO INTERVENTIONS IN A RESPONSE TO INTERVENTION (RTI) FRAMEWORK ACROSS STUDENT PROBLEM TYPE

By
Lisa A. Maloney, M.Ed.

May 2015

Dissertation supervised by Dr. Jered Kolbert

Students indicated as tier two candidates in a Response to Intervention (RtI) framework require evidence-based intervention to increase positive behaviors. This study examined the effectiveness of two tier two behavior interventions (BEP/CICO and Strong Kids small group social skills training) across two groups at the second tier of a RtI behavior framework. Specifically, student problem type (internalizing or externalizing) was evaluated with treatment outcomes to determine which intervention was more successful. In addition, each intervention was evaluated in terms of treatment integrity with typical school personnel (school counselors) and perception of social validity. This study utilized a randomized block design with 3rd – 5th grade students in four schools in the same school district at three time intervals (pre-test, post-test, and four month follow-up). Multiple three-way repeated measures ANOVAs were conducted to determine if groups were different at each time point. Follow-up analyses include one-way paired t-tests and one-way ANOVAs on change scores. Although students in both
groups showed significantly increased scores at post-test, students in the small group skills training (Strong Kids) intervention group showed greater long term gains than students in the BEP/CICO group. Also, students identified as externalizers indicated higher scores at four-month follow-up than students identified as internalizers. Descriptive data on treatment integrity and social validity are reviewed. Study implications, limitations, and directions for future research are also highlighted.
DEDICATION

This dissertation is dedicated to my husband, Timothy Maloney and children, Jack Henry Maloney, Seth Richard Maloney, Brock Thomas Maloney, and Emily Grace Maloney.

For where your treasure is, there your heart will be also.

-Matthew 6:21
ACKNOWLEDGEMENT

If I have seen a little further, it is by standing on the shoulders of giants.

-Sir Isaac Newton

I would like to express my sincere gratitude to the members of my dissertation committee, Dr. Jered Kolbert, Dr. Laura Crothers, Dr. Rachel Robertson, and Dr. Matthew Bundick, for their support and assistance in developing this manuscript. I wish to sincerely acknowledge Dr. Jered Kolbert for your unwavering guidance and support during the course of this project and throughout my doctoral studies. Your dedication, timely responses, excellent feedback, and collaborative mentorship strengthened this dissertation, and allowed me to grow as a researcher and counselor educator.

I would like to thank the Hempfield Area School District, specifically Dr. Barbara Marin for your approval to conduct the study at the elementary schools in the district. I appreciate your vision and support during this project. I would also like to thank the administrators, teachers, students, and parents at the participating schools in the district. I would like to give an acknowledgement to the school counselors who made this project possible: Melissa Ciesielski, Julianne Scott, Sarah Taylor, and Shadia DelVitto. I can’t thank you enough for your role in making this study a success. I would also like to thank Jennifer Bauer for your support and collaboration during this project.

I thank my family and friends over the years, who not only supported my studies in higher education, but also my dissertation. All levels of support and encouragement were greatly appreciated.

I thank my husband Timothy Maloney, who has never wavered in his belief that I would finish this journey. You always imagine the great things I will do before I think of
doing them. I also thank my wonderful boys, Jack, Seth, and Brock for your patience, love, understanding, and sacrifice. It has been a long road and I could not have done it without you boys. Finally, to Emily Grace, my light, she is always with me.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>iii</td>
</tr>
<tr>
<td>DEDICATION</td>
<td>vi</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>vii</td>
</tr>
<tr>
<td>List of Tables</td>
<td>xiii</td>
</tr>
<tr>
<td>List of Figures</td>
<td>xv</td>
</tr>
<tr>
<td>CHAPTER 1 INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Response to Intervention</td>
<td>2</td>
</tr>
<tr>
<td>Definition of RtI behavior</td>
<td>2</td>
</tr>
<tr>
<td>Continuum of behavior interventions</td>
<td>4</td>
</tr>
<tr>
<td>Theoretical Foundation</td>
<td>5</td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td>6</td>
</tr>
<tr>
<td>Purpose of the Study</td>
<td>6</td>
</tr>
<tr>
<td>Conclusion</td>
<td>8</td>
</tr>
<tr>
<td>CHAPTER 2 LITERATURE REVIEW</td>
<td>9</td>
</tr>
<tr>
<td>Tier One - Universal Level</td>
<td>9</td>
</tr>
<tr>
<td>School-Wide Positive Behavior Support (SWPBS)</td>
<td>9</td>
</tr>
<tr>
<td>Universal Screening</td>
<td>11</td>
</tr>
<tr>
<td>Systematic Screening for Behavior Disorders (SSBD)</td>
<td>12</td>
</tr>
<tr>
<td>Tier Two - Secondary Level</td>
<td>13</td>
</tr>
<tr>
<td>Behavior Education Program (BEP/CICO)</td>
<td>13</td>
</tr>
<tr>
<td>Social skills training</td>
<td>17</td>
</tr>
<tr>
<td>Strong Kids curriculum</td>
<td>18</td>
</tr>
</tbody>
</table>
Conclusion .................................................................................................................. 20

CHAPTER 3 METHODOLOGY .............................................................................. 21

Research Design ....................................................................................................... 21
Research Questions and Hypothesis ........................................................................ 22
Sample ...................................................................................................................... 23
Measures .................................................................................................................. 24
  Systematic Screening for Behavior Disorders (SSBD) ........................................ 24
  Walker Assessment Scale .................................................................................... 25
  Behavior Education Program (BEP) measures .................................................... 26
    BEP fidelity check ............................................................................................... 26
    BEP social validity ............................................................................................. 26
  Strong Kids curriculum measures ...................................................................... 27
    Strong Kids fidelity check ................................................................................ 27
    Strong Kids social validity .............................................................................. 28
  Other treatment outcomes measures .................................................................. 28
    Office disciplinary referral .............................................................................. 28
    Grade point average and screening data ......................................................... 28
Procedures .............................................................................................................. 29
Data Analysis .......................................................................................................... 30
Conclusion .............................................................................................................. 31

CHAPTER 4 RESULTS ......................................................................................... 32

Descriptive Analysis and Sample ......................................................................... 32
Missing Data ............................................................................................................ 34
Assumptions ............................................................................................................ 34
Research Questions and Hypotheses ..................................................................... 35
Research Question 1a: Three-way repeated measures mixed factorial ANOVA

Hypothesis 1 and 2: WSI total score

Research Question 1b: Three-way repeated measures mixed factorial ANOVAs

Hypothesis 1 and 2: WSI teacher-preferred social, peer-preferred social, and school adjustment

Teacher-Preferred Social Sub-Scale
Peek-Preferred Social Sub-Scale
School Adjustment Sub-Scale

Research Question 2: Descriptive Statistics

Hypothesis 3 and 4

Check-in/Check-out (BEP)
Fidelity of BEP Implementation
Self-assessment of contextual fit in schools
Small Group Skills Training (Strong Kids)
Fidelity of Strong Kids implementation
Strong Kids Survey

Conclusion

CHAPTER 5 DISCUSSION

Summary of the Study

Major Findings

Research Question #1

Hypothesis 1
Hypothesis 2

Research Question #2

Hypothesis 3
Hypothesis 4
Limitations of the Study ........................................................................................................... 76
Implications for Practice............................................................................................................ 78
Recommendations for Future Research.................................................................................... 83
Conclusion................................................................................................................................. 85
References.................................................................................................................................. 87
Appendix A.................................................................................................................................. 105
Appendix B.................................................................................................................................. 106
Appendix C.................................................................................................................................. 108
Appendix D.................................................................................................................................. 112
Appendix E.................................................................................................................................. 115
Appendix F.................................................................................................................................. 119
Appendix G.................................................................................................................................. 120
Appendix H.................................................................................................................................. 123
LIST OF TABLES

Table 1 - Descriptive Analysis of Sample - Grade .................................................................33
Table 2 - Descriptive Analysis of Sample - Gender ...............................................................33
Table 3 - Descriptive Analysis of Sample - Problem Type ..................................................34
Table 4 - Descriptive Analysis of Sample - Intervention Group ..........................................34
Table 5 - WSI Total Descriptive Statistics ...........................................................................37
Table 6 - Three-way Repeated Measures ANOVA for Time and WSI Total between Groups and Problem Type ...............................................................................................37
Table 7 - Paired Sample t-tests on the interaction between Time and Problem-Type - WSI Total Score ................................................................................................................38
Table 8 - One-way ANOVA on gain scores WSI Total Score and Problem Type ............40
Table 9 - Paired Sample t-tests on the interactions between Time and Intervention Group - WSI Total Score ........................................................................................................41
Table 10 - One-way ANOVA on gain scores WSI Total Score and Intervention Group 42
Table 11 - WSI Teacher-Preferred Social Descriptive Statistics ........................................45
Table 12 - Three-way Repeated Measures ANOVA for Time and WSI Teacher-Preferred Social between Groups and Problem Type ......................................................46
Table 13 - Paired Sample t-tests on the interactions between Time and Problem Type - WSI Teacher Preferred Social ..........................................................................................47
Table 14 - One-way ANOVA on gain scores WSI Teacher-Preferred Social and Problem Type ..................................................................................................................48
Table 15 - WSI Peer-Preferred Social Descriptive Statistics .................................................49
Table 16 - Three-way Repeated Measures ANOVA for Time and WSI Peer-Preferred Social between Groups and Problem Type ................................................................. 50

Table 17 - Paired Sample t-tests on the interaction between Time and Problem Type - WSI Peer Preferred Social ........................................................................................................ 51

Table 18 - One-way ANOVA on gain scores WSI Peer-Preferred Social and Problem Type ................................................................................................................................. 52

Table 19 - Paired Sample t-tests on the interaction between Time and Intervention Group - WSI Peer Preferred Social ........................................................................................................ 54

Table 20 - One-way ANOVA on gain scores WSI Peer-Preferred Social and Intervention Group ................................................................................................................................. 55

Table 22 - Three-way Repeated Measures ANOVA for Time and WSI School Adjustment Scale ................................................................................................................................. 57

Table 23 - Paired Sample t-tests on Time and School Adjustment Scale ...................... 58

Table 24 - BEP - Treatment Fidelity Percentages .......................................................... 61

Table 25 - BEP - Social Validity Percentages ............................................................... 62

Table 26 - Strong Kids Social Skills Training - Treatment Fidelity Percentages ......... 64

Table 27 - Strong Kids Social Skills Training - Social Validity Percentages ................. 65
LIST OF FIGURES

Page
Figure 1 - Comparison Graphs WSI Total at Intervention Group ..........................38
Figure 2 - Comparison Graphs (paired t-test) at Problem Type – WSI Total Score up ....39
Figure 3 - Comparison Graphs (paired t-test) at Intervention Group – WSI Total Score 41
Figure 4 - Comparison Graphs at WSI Teacher-Preferred Social for Time at Intervention Groups.......................................................................................................................46
Figure 5 - Comparison Graphs (paired t-test) at Problem Type – WSI Teacher-Preferred Social..................................................................................................................................................47
Figure 6 - Comparison Graphs WSI Peer-Preferred Social Interactions for Time at Intervention Group...............................................................................................................................................51
Figure 7 - Comparison Graphs (paired t-test) at Problem Type – WSI Peer-Preferred Social..........................................................................................................................................................52
Figure 8 - Comparison Graphs (paired t-test) at Intervention Group – WSI Peer-Preferred Social................................................................................................................................................................54
Figure 9 - Comparison Graphs at WSI School Adjustment at Intervention Groups ..........58
Figure 10 - Comparison Graphs (paired t-test) – WSI School Adjustment.....................59
CHAPTER 1
INTRODUCTION

Since the reauthorization of the Individuals with Disabilities Education Act (IDEA) in 2004, school districts are challenged to use empirically based interventions in a systematic manner before determining eligibility for special education services (Zirkel, 2007). Many school districts are using a framework, known as Response to Intervention (RtI), to meet this challenge (Zirkel & Thomas, 2010a; Zirkel & Thomas, 2010b; Zirkel, 2011). RtI provides a continuum of increasingly intensive support for both academic and behavioral issues (Gresham, 2007). A large number of school age children (between 14-20% a year) are at risk for potential social, emotional, and mental health disorders (National Research Council & Institute of Medicine [NRC & IOM], 2009). Gresham (2005) suggests that RtI for behavior is timely as more than 20% of students in school could be diagnosed with mental illness. Yet, less than 1% of school students are identified as emotionally disturbed or receive services in school. Gresham (2005, 2007) stated that confusing and contradictory definitions of what categorizes an emotional disturbance are a roadblock for students to adequately receive school services. School district teams typically make reactive decisions based on the intensity of the behavior and teacher/staff tolerance. Schools are also reluctant to address mental health issues, often due to lack of resources and understanding how social and emotional issues impact academics (Gresham, 2005; Lane, Jolivette, Conroy, Nelson, & Benner, 2011).

There is an absence of rigorous research evaluating RtI interventions for behavior within the context of a continuum of support services. This chapter will introduce the RtI model, describe theoretical foundations for the study, identify the statement of the
problem, and describe the purpose of the study, including research questions and hypotheses.

Response to Intervention

Definition of RtI behavior. Response to Intervention (RtI) is a systemic problem-solving approach with several critical features. First, RtI encompasses universal interventions in the general education curriculum. Second, at-risk students are continuously monitored for progress during intervention stages. Third, students are offered a continuum of increasingly intensive services supported by empirical research. Fourth, interventions and decision making on student progress are driven by relevant, research based data. Last, RtI interventions at all levels are implemented with treatment fidelity, and considered socially valid by stakeholders (Fox, Carta, Strain, Dunlap, & Hemmeter, 2010).

For many years school personnel have struggled with addressing student needs in the areas of social-emotional and behavioral issues (Lane et al., 2011). Challenging behavior in children can take on many variations and forms (Hawken & Johnston, 2007). In the past, a great deal of time would be spent intervening with a very small number of students due to disruptive behavior in the classroom that was impeding the learning of others (Saeki et al., 2011). The RtI framework provides clear expectations at each level of intervention and preventative measures; however, there are still many challenges in addressing student behavior in school. Unlike academic issues, student behavior is not easy to operationalize, measure, and demonstrate growth (Gresham, 2004). Therefore, normative data on behavior is not readily available (Gresham, 2007). Gresham (2007) also indicates that referral for behavior services are often based on student behavior as
compared to the rest of the class and teacher tolerance for misbehavior. Another issue is that teachers often view student misbehavior as a reflection of their classroom management skills, and may be reluctant to refer a student for intervention (Tillery, Varjas, Meyers, & Collins, 2010).

According to Lane et al. (2011), students with unaddressed behavior issues are in danger of future problems at home, in school, and in the community. Students are typically categorized with internalizing behavior patterns (anxious, withdrawn, overly shy), or externalizing behavior patterns (disruptive, aggressive). Some children present with both types of behavior. According to Gresham, Lane, MacMillan, and Bocian (1999), students in each category have specific behaviors and require appropriate interventions to meet their needs. Although several studies investigated the effect of interventions on externalizing behavior (Benner, Nelson, Sanders, & Ralston, 2012; Cheney, et al., 2009; Hawken, Bundock, Kladiss, O’Keefe, & Barrett, 2014; Mitchell, 2012) and internalizing behavior (Marchant, Brown, Calderella, & Young, 2010; Marchant, Solano, Fisher, Calderella, Young & Renshaw, 2007), there is a lack of research studies which take both presenting problem types into consideration.

Early prevention efforts with young children are linked with a reduction in the diagnosis of mental health and emotional/behavior disorders in later years. Also, it is recommended that children will benefit from universal prevention efforts and intervention at all levels. Interventions should reflect best practices and be evidenced by empirical data (NRC & IOM, 2009). Some advantages of RtI are earlier identification of behavioral issues; higher likelihood of preventative measures to avert future issues; assessment and development of a clear, fluid program that includes systematic screening
and interventions; and an at-risk versus deficit based philosophy (Gresham, 2007). Also, RtI addresses the over identification of minority students classified as emotionally disturbed due to lack of prevention and specific intervention efforts (Gresham, 2007; Harris-Murri, King, & Rostenberg, 2006).

Continuum of behavior interventions.

Hawken, Vincent, and Schumann (2008) outlined a three-tier RtI pyramid model. The primary level of intervention (tier one) is universal for students, which means all students are exposed to the intervention. At tier one, roughly 80% of students will respond at this level. Students respond to tier one interventions by following schoolwide and classroom rules and expectations. Universal interventions are for all settings and all students. These preventative and proactive practices typically include school-wide positive behavior support (SWPBS) and bully prevention programs. The secondary level of intervention (tier two) addresses students selected as non-responders at tier one. These interventions will address approximately 15% of the student population. Selected interventions include daily monitoring of behavior, such as the Behavior Education Program (BEP; Crone, Hawken, & Horner, 2010) and small group intervention. These interventions should be easy to access for students and be considered highly efficient by school personnel. The tertiary level of support (tier three) focuses on students who require intensive interventions. This level addresses approximately 5% of the student population and entails more individualized interventions based upon the function of the behavior. A key component of RtI is that students are selected for interventions based upon a universal screening process that appropriately identifies at-risk students (Gresham, 2007; Hawken et al., 2008; Lane et al., 2009). Also, consistent monitoring of
student progress to determine eligibility to move through tiers is essential (Fuchs & Fuchs, 2005).

**Theoretical Foundation**

RtI is grounded in social learning theory, applied behavior analysis (ABA), and behavior theory, specifically operant conditioning (Gresham, 2004). Inherent in the philosophy of the RtI framework is that children learn through their environments and the reciprocity of social relationships (Merrell, 2002). Social learning theory, developed by Bandura (1977, 1986), reflects how students acquire new behavior through exposure to modeling of positive behaviors. The adoption of a School-wide Positive Behavior Support (SWPBS; tier one) program reflects this type of environmental interaction with behavior. Students are expected to adhere to universal school expectations and rules, and given opportunities to model and practice appropriate behaviors. Also, small social group intervention that encompasses modeling, feedback, and practice is rooted in social learning theory.

Behavior theory and ABA, developed by Skinner (1953), are also theoretical underpinnings for this model. Behavior theory, including the tenet of operant conditioning and positive reinforcement, is demonstrated in RtI through the use of daily behavior report cards (tier two) and positive behavior support plans (tier three). The process of ABA includes identification of the function of student problem behavior to determine a pattern of behavior antecedent, behavior description, and behavior consequence. Functional Behavior Assessments (FBA, tier three) are an example of ABA in the RtI framework.
Statement of the Problem

Students with social, emotional, and behavior issues struggle in the school setting with academic concerns, peer relationships, and self-regulation. Without early prevention or intervention, these students are at-risk for future involvement with mental health, juvenile justice, and drug and alcohol systems (Lane et al., 2011). Lane et al. (2011) also identified four recommendations to address behavior concerns and decrease emotional disturbance in school age children. First, interventions must be evidence-based and implemented consistently and appropriately. Second, students are offered increasingly intensive levels of support. Third, student progress data is consistently monitored and utilized to make decisions regarding increasing or decreasing interventions intensity. Fourth, teacher and parent understanding of behavior concerns and interventions are paramount. These recommendations reflect a three-tier model of RtI services for behavior.

In order to address these issues and potential problems with social, emotional, and behavior issues, many schools are adopting the RtI model to address behavior concerns. There is a dearth of strong empirical research that has evaluated the effectiveness of specific RtI interventions for behavior, especially at the second tier (Mitchell, Stormont, & Gage, 2011). Also, student behavior type, either internalizing or externalizing, needs further evaluation to determine if certain interventions are more beneficial to either group at the secondary level (Lane et al., 2011; Mitchell et al., 2011).

Purpose of the Study

The purpose of this study is to compare the effectiveness of two treatment interventions across two groups at the second tier of a RtI behavior framework.
Specifically, student problem type (internalizing or externalizing) was evaluated with treatment outcomes to determine which intervention is more successful. In addition, the intervention was evaluated in terms of treatment integrity with typical school personnel (school counselors) and perception of social validity. To summarize, the study will increase existing literature on targeted group intervention by addressing the following research questions:

1. **R1**: In this sample, which intervention is more effective, BEP or small group social skills training?
   a. **H1**: One of the interventions will be more effective in increasing positive behaviors and decreasing negative behaviors, as measured by the teacher ratings and screening data than the other intervention (BEP/CICO and Strong Kids small group) at post-test and at follow-up (four months post-intervention).
   b. **H2**: There will be a significant interaction for student behavior as measured by teacher rating scales and screening data, for the intervention group (BEP/CICO and Strong Kids small group) and student problem type (internalizing and externalizing) at post-test and at follow up (four months post-intervention).

2. **R2**: What is the social validity for each intervention?
   a. **H3**: School personnel (school counselors) can implement the interventions with typical resources, as measured through fidelity checklists.
b. H4: School personnel find the interventions to be socially valid as measured through social validity questionnaires at the conclusion of the study.

**Conclusion**

In summary, many states are adopting RtI to address academic and behavior issues in students. Response to Intervention addresses many disparities in how schools address behaviors, which include providing a systemic process for determining student need, continuous progress monitoring for interventions at each tier, systematic decision making using student data, and utilization of preventative measures. More experimental research in the area of tier two behavior interventions is needed to inform school practice.
CHAPTER 2

LITERATURE REVIEW

RtI for academic and behavioral issues in the school can be compared to a standard medical model of care. Benchmarks are set for “normal” sequences (e.g., height, weight, cholesterol level) and monitored universally. If a person does not meet the benchmark, the evidence-based interventions are initiated (change in diet, medication). The individual is monitored closely and as needed, levels of intervention increase and decrease depending on response to change in diet or medication regime. In comparison, a RtI model in a school setting includes universal screening for all students, consistent progress monitoring to ensure treatment integrity and effectiveness, research-based interventions, and increasing data points as a student moves between tiers of interventions. A key component to the RtI model is ensuring that the intervention and level of intervention match the behavioral needs of the student (Gresham, 2007).

Tier One - Universal Level

**School-wide Positive Behavior Support (SWPBS).** A strong foundation at the first level of intervention is essential in identifying and treating students at later levels (Sprick, 2009). Mitchell et al. (2011) evaluated current research conducted on tier two interventions within a RtI framework and found less than one third of the studies demonstrated fidelity at the first tier. Most of the studies did not measure whether tier one had a strong foundation. Without treatment fidelity at every level, a continuum of services cannot be evidenced. Tier one SWPBS targets students’ social competency through school wide rules and expectations, reinforcement for following prosocial
expectations, school safety and climate, academic achievement, and consistent and appropriate discipline practices (McIntosh, Filter, Bennett, Ryan, & Sugai, 2010).

Schools utilizing a comprehensive tier one program for both academics and behavior demonstrated decreased problem behavior and increased academic engagement (McIntosh, Chard, Boland, & Horner, 2006; Sadler & Sugai, 2009). McIntosh et al. (2006) reported that combining academic and behavior supports reduced the number of students in more intensive tiers. Students in kindergarten through third grade showed increases in reading scores and decreases in problem behavior as measured through office disciplinary referrals (ODR). The authors indicated that problem behavior usually manifests itself after age eight; therefore, studies conducted with older children are essential. Sadler and Sugai (2009) had similar findings in a study evaluating student behaviors and reading scores over the course of a 10-year implementation of SWPBS. The study participants were kindergarten through third grade students.

Support from school personnel is identified as an essential component of an effective SWPBS. A leadership team is established to carry out SWPBS targets (Sprague & Horner, 2006). Horner et al. (2009) conducted a randomized, wait-list analysis of SWPBS in 66 schools. The study assessed the relationship among SWPBS implementation fidelity by typical personnel in the school setting and the students’ perception of safety, reading achievement, and ODRs. It was determined that schools could implement universal interventions with typical school resources and staff. Also, schools implementing SWPBS were perceived as significantly safer than schools not implementing a universal tier of intervention. In addition, SWPBS was linked to increases in reading scores in grade three and a decrease in ODRs. This study is
important as it indicates that school personnel can intervene at a universal level with standard resources and be successful on SWPBS targets.

The *School-wide Evaluation Tool* (SET) is a valid and reliable measure for treatment fidelity at the universal level (Horner et al., 2004). If treatment fidelity is not established at the universal level, then a continuum of services is not present. The SET evaluates universal knowledge of schoolwide expectations, information regarding monitoring and reinforcement of appropriate behavior, consistent consequences for misbehavior, the use of universal data, and the presence of a leadership team.

**Universal Screening**

Kalberg, Lane, and Menzies (2010) directed schools to utilize multiple sources in identifying students in need of behavior support. Some common data points include ODRs, teacher rating scales, and multiple-gate screening systems. This review will briefly describe the relevant literature regarding ODRs, teacher rating scales, and a multiple-gate system: the *Systematic Screening for Behavior Disorders* (SSBD: Walker & Severson, 1992).

According to Marchant et al. (2009), the use of comprehensive screening tools increases the likelihood that the intervention will match the behavior issue; therefore, ensuring greater success. In a study conducted by McIntosh, Campbell, Carter, Russell, and Zumbo (2009), ODRs were found to be strong indicators of externalizing problem behavior. Externalizing behavior can be defined as disruptive, aggressive, and defiant (Walker & Severson, 1992). In addition, researchers have identified the need to address students with internalizing behavior issues (McIntosh, Campbell, Carter, & Dickey, 2009; Severson, Walker, Hope-Doolittle, Kratochwill, & Gresham, 2007; Walker, Cheney,
Stage, & Blum, 2005). Internalizing behavior is characterized as overly shy, withdrawn, or fearful (Walker & Severson, 1992). Therefore, a screening tool that is not sensitive to both internalizing and externalizing issues is not adequate.

Independent teacher rating scales, including the Student Risk Screening Scale (SRSS), have been evaluated to determine their effectiveness in identifying students at risk for social and emotional issues (Lane et al., 2009). As with research conducted with office disciplinary referrals as the screening tool, students who exhibited internalizing behaviors were overlooked for intervention. Recently a companion to the SRSS has been developed to address this need, the Student Internalizing Behavior Screener (SIBS: Cook et al., 2011). Although relatively new, the SIBS demonstrated acceptable reliability and validity. More research on the psychometric properties of the SIBS is necessary; therefore, for this study the SRSS/SIBS universal screening tools were not utilized.

**Systematic Screening for Behavior Disorders (SSBD).** The Systematic Screening for Behavior Disorders (SSBD) is a highly supported measure for identifying students at risk for internalizing and externalizing behaviors (Lane et al., 2009; Severson et al., 2007). Lane et al. (2009) compared the SSBD against other standard screening measures (e.g., ODRs, teacher rating scales) and found it to be the most sensitive and comprehensive screening tool in current use. The SSBD is a multiple-gated system, where students’ progress into later gates is based upon specific criteria. At gate one, teachers rank students according to internalizing and externalizing characteristics. The top three students, in both internalizing and externalizing categories, identified with the most concern are then moved to the second stage for further assessment. At gate two, the classroom teacher completes teacher-rating scales for the six identified students.
Students who receive scores exceeding normal expectations are then referred to gate three. The students are then observed directly during academic and social situations (Walker & Severson, 1992). The SSBD has been nationally normed with 4,500 cases at gate two and 1,300 cases at gate three (Gresham, 2007; Severson et al., 2007).

Walker et al. (1990) reported that the SSBD maintains robust psychometric properties and is sensitive in identifying students in need of intervention. These properties are outlined in chapter three. These findings were replicated in another study and the SSBD was determined to be valid and reliable (Walker et al., 1994). This study also reported that males were more likely to be identified as externalizers and females were more likely to be identified as internalizers. The SSBD has also been supported with preschool children (Feil, Walker, & Severson, 1995) and adolescents (Caldarella, Young, Richardson, Young, & Young, 2008).

**Tier Two - Secondary Level**

Children, identified through the SSBD process or another universal screening measure, are selected for tier two interventions. Tier two interventions are typically easy to access, deliver, and monitor with a large group of students (Hawken et al., 2008). Mitchell et al. (2011) reviewed 13 studies evaluating tier two group interventions for behavior. The researchers reported that studies assessing the Behavior Education Program (BEP) and small group social skills training, such as the Strong Kids Curriculum, were most prevalent.

**Behavior Education Program (BEP/CICO).** The Behavior Education program (BEP), also known as Check-in/Check-out (CICO) is a structured tier two intervention, which provides daily monitoring and feedback to students identified at risk for behavioral
issues. The student uses a daily behavior report card (DBRC) to document behavior aligned with school-wide expectations at tier one. Every morning the student checks in with an adult facilitator, then carries the DBRC from class to class and receives feedback and reinforcement from the teacher using a point system. At the end of the day, the student checks out with the BEP facilitator and takes the form home for parent signature (Crone et al., 2010).

There is a large body of research evaluating the BEP. Several studies have investigated the effects of the BEP on reducing problem behaviors as measured through ODRs (Hawken, 2006, 2007; Hawken, O'Neil, & MacLeod, 2011; Todd, Campbell, Meyer, & Horner, 2008). Hawken (2006) conducted a quasi-experimental study with 10 students identified as needing increased behavior support through ODR and teacher nomination. A decrease in ODRs was reported for seven of the students. Hawken (2007) conducted a similar study with 12 elementary school students. Students demonstrated significant decreases in problem behavior. Both studies cited the lack of behavior function prior to research as a limitation.

Two studies assessed perceived behavior function prior to treatment implementation (Hawken et al., 2011; McIntosh et al., 2009). McIntosh et al. (2009) utilized ODRs and teacher rating scales to determine student responsiveness. Students were grouped based upon function of their behavior. Students were either in peer/adult maintained function group (n=18) or academic escape function group (n=16). Peer/adult maintained function is defined as behavior that is reinforced by the attention of adults and peers, this behavior is often viewed as disruptive. Academic escape function is described as behaviors that allow the student to engage in other activities instead of schoolwork,
such as nurse’s visits or frequent bathroom breaks. Function was assessed pre/post intervention using a multivariate analysis of variance (MANOVA). Students in the adult/peer attention group showed significant decreases in ODRs and increases in teacher rating of prosocial behavior. The students in the escape function group showed no change in either measure. Hawken et al. (2011) replicated previous studies and assessed the effects of the BEP on ODRs. The researcher also included a measure of function prior to implementation. Problem behavior was reportedly reduced 71-80% across function types. Function types included adult/peer maintained, escape maintained and tangible item maintained functions. More robust experimental studies are necessary to support the effects of function on BEP.

Campbell and Anderson (2008) conducted a single subject reversal design study with two students. The researchers completed functional behavior assessments (FBA) prior to implementing the BEP. The authors concluded that a greater reduction in problem behavior was evident once function was determined. The students, who were striving for peer attention, had more success once researchers initiated peer related activities as rewards. FBA is a process that is typically used in tier three for intense individualized interventions (Gresham, 2007). Functional behavior assessments are time and resource intensive; therefore, attempting to use FBAs with approximately 15% of the student population may be taxing to school personnel.

Expanding on the BEP literature, three studies have measured treatment fidelity in schools using standard personnel (Campbell & Anderson, 2011; Fairbanks, Sugai, Guardino, & Lathrop, 2007; Todd et al., 2008). Fairbanks et al. (2007) noted a decrease in negative behavior and increase in positive social behavior for four out of ten second
grade students. The researchers indicated that school personnel with minimal additional resources easily executed the BEP with high treatment fidelity. Todd et al. (2008) had similar findings using single-subject, multiple baselines with four students. Office disciplinary referrals decreased and school personnel easily implemented the intervention. Campbell and Anderson (2011) used a more rigorous design and determined that ODRs were significantly lower after BEP. High treatment integrity by typical school staff and high social validity scores suggest that interventionists found BEP both useful and effective. Hawken et al. (2014) conducted a systematic review of the literature on check-in/check-out. Of the 28 studies evaluated (single subject and group studies), 21 favored BEP/CICO in some capacity. Of the eight group designs, all had at least one outcome favoring the BEP/CICO or showed growth from pre-test to post-test. The effect sizes for the studies range from small to large.

A recent study by Mong, Johnson, and Mong (2011) evaluated the outcomes of the BEP on behavior and mathematics performance. The results indicated an increase in math performance and decrease in behavioral issues. These findings need to be replicated and expanded as research combining both behavior and academic supports is scarce in the literature. An experimental study by Simonsen, Myers, and Briere (2011) greatly enhanced the literature on tier two interventions. The study, conducted with middle school students identified as needing targeted support, was the first to evaluate BEP against another intervention using an experimental design. Students were identified as needing intervention, then randomly placed in either the treatment group (BEP) or control group (standard practice). Standard practice in this study consisted of social skills groups led by middle school counselors. The standard practice intervention was not
consistent among the counselors in the control group. The researchers used multiple data points to determine effectiveness of both interventions, including ODRs, teacher rating scales, and direct observation. Students in the BEP group engaged in significantly less off-task behavior and showed higher gains on problem-solving subscales. The students in the standards practice group had more gains on positive social skills. In addition, students in the BEP group showed a decrease in ODRs as compared to the control group.

The majority of BEP literature in this review utilized small sample sizes, between 2-12 participants. Also, a large number of the studies did not use rigorous experimental designs to determine effectiveness. Simonsen et al. (2011) states “studies should seek to compare empirically supported target group interventions (e.g. CICO and social skills instruction)” (p. 45). Mitchell et al. (2011) recommends that future researchers utilize a process identifying both externalizing and internalizing students. Unfortunately, the studies reviewed for BEP and ODRs include teacher nomination, which identified only externalizing students for treatment.

**Social skills training.** The literature regarding the effectiveness of social skills training is not as plentiful as it is for BEP. According to Gresham, Sugai, and Horner (2001), the success of social skills training on treatment outcomes is varied. This variance is due to differences in population characteristics, behavior function, and treatment integrity. More recent literature on social skills training indicates more promising results (Gresham, Van, & Cook, 2006; Lane, Wehby, Menzies, Doukas, Munton, & Gregg, 2003; Marchant et al., 2007). Gresham et al. (2006) used multiple measures to evaluate small group skills training at a high level of intervention (between 2-3 hours per week). It was concluded that higher levels of intervention for social skills
increased positive social behaviors and decreased negative behaviors. It was also determined that treatment integrity was essential to student success. Lane et al. (2003) evaluated seven elementary students identified a tier two for at risk behavior. Students participated in a 10-week social skills group facilitated by doctoral students. Participants showed a decrease in disruptive behaviors, an increase in academic engagement, and an increase in positive playground interactions. In both of the aforementioned studies, specific methods and social skill interventions from the *Social Skills Intervention Guide* (Elliott & Gresham, 1991) were utilized. Marchant et al. (2007) evaluated small group social skills instruction in combination with behavior reinforcements and self management systems with students identified with internalizing behavior characteristics. Students increased in positive social behavior. Small group intervention included components from *Skillstreaming* (McGinnis, 2011) and *Boys Town* (Dowd & Tierney, 2005) social skills programs. A limitation of the study was that the small group skill training was part of a package implementation with the other components. It was recommended that future studies include only small group skills training, behavior reinforcement, or self-management systems. The evidence from these studies is supportive of social skills training with elementary school students. However, school personnel did not implement the interventions. The literature in this area needs expanded to include effectiveness of small group training implemented with typical staff (Mitchell et al., 2011).

**Strong Kids curriculum.** The Strong Kids curriculum is an evidence based form of social skills training intervention that can be implemented by standard school personnel. The series focuses on the improvement of social and emotional competence
(Merrell, Carrizales, Feuerborn, Gueldner, & Tran, 2007; Merrell, Parisi, & Whitcomb, 2007). Merrell, Juskelis, Tran, and Buchanan (2008) conducted a preliminary study to determine if Strong Kids altered symptoms of emotional issues and knowledge regarding social and emotional competency. The participants in three groups showed increases in both areas according to treatment measures.

Four other studies have been conducted regarding Strong Kids with similar results (Caldarella, Christensen, Kramer, & Kronmiller, 2009; Gunter, Caldarella, Korth, & Young, 2012; Kramer, Caldarella, Christensen, & Shatzer, 2010; Whitcomb & Merrell, 2012). Two comparative studies used quasi-experimental design with classrooms in preschool (Gunter et al., 2012) and second grade (Caldarella et al., 2009). The researchers reported an increase in emotional regulation, a decrease in internalizing behaviors, and an increase in positive teacher-student relationships. No change in behavior was evidenced with children identified as externalizers.

Kramer et al. (2010) conducted a pre-test/post-test time series to evaluate social behaviors in four kindergarten classrooms. Teachers implemented Strong Kids with all students. The researchers reported significant increases in pro-social behavior and decreases in internalizing behaviors. Whitcomb and Merrell (2012) conducted a similar study with four first grade classrooms. Researchers reported similar results in previous studies. Participants in this study also showed an increase in knowledge about social skills.

The four previous studies were conducted with Strong Kids utilized as a universal intervention. However, Merrell et al. (2007) indicates the curriculum can be used in both classrooms and in small groups. More research is needed on this curriculum as it is
implemented as a tier two intervention. Furthermore, the studies in this section showed
evidence of a reduction in internalizing behaviors, but more evidence is needed to
determine the outcomes of social skills training on both internalizing and externalizing
behaviors.

**Conclusion**

Several gaps in current research on this topic are evident through this review of
literature. First, there is a lack of strong experimental research on tier two interventions,
especially with students in intermediate grades 3-5. Studies comparing established tier
two interventions are necessary to enhance the treatment options of school personnel.
Second, student behavior types, including internalizing and externalizing behaviors,
require further research with an emphasis on student response to specific interventions.
Last, research is needed to determine if typical school personnel can implement
interventions with treatment integrity and reinforce the social validity of the
interventions.

In order to begin to address these gaps, this study compared effectiveness of two
treatment interventions at the second tier. Specifically, treatment outcomes were
evaluated to determine if either intervention [(BEP/CICO or small group skills training
(Strong Kids curriculum)] was more successful with certain problem types (internalizing
or externalizing). In addition, perceptions of social validity of the interventions were
measured.
CHAPTER 3

METHODOLOGY

The primary purpose of this study was to compare effectiveness of two treatment interventions across two groups at the second tier of a RtI behavior framework. Specifically, student problem type (internalizing or externalizing) was evaluated with treatment outcomes to determine which intervention was more successful. The secondary purpose of the study was to determine if each intervention maintained treatment integrity with typical school personnel (school counselors) and was considered socially valid by the implementers. The Walker Assessment Scale/Walker Survey Instrument (WAS/WSI: Walker & McConnell, 1988; Duerr Evaluation Resources, 2013), screening data, and grade point average were used to measure student behavior. A stratified random sample of students in grades 3-5 in four schools in the same district was used in this study.

This chapter describes the quantitative research methods used to complete this study. The chapter includes the following sections: research design, research questions and hypotheses, sample, measures, procedure, and data analysis.

Research Design

This experimental study utilized a pre-test/post-test/follow-up randomized block design. After universal screening identified students as tier two candidates, students in four schools were separated into internalizing or externalizing identified problem-type and then randomly assigned to one of two groups (BEP or Strong Kids small group). The independent variables were BEP and Strong Kids small group interventions and identified student problem-type. The dependent variables were student scores on teacher rating scales (total score and three subscales: teacher-preferred social behaviors, peer-
preferred social behaviors, and school adjustment behaviors), number of office
disciplinary referrals (ODRs), number of non-emergency visits to the nurse, attendance,
behavior grades on report card, and grade point average. Repeated measures analysis of
variance was used to analyze the data to determine if the groups were significantly
different immediately after the intervention and then over time. Post hoc evaluations
were conducted with paired t-tests and one-way ANOVAs comparing gain scores.

**Research Questions and Hypotheses**

1. **R1:** Which intervention is more effective, BEP or Strong Kids small group social
   skills training?
   
   a. **H1:** One of the interventions will be more effective in increasing positive
      behaviors and decreasing negative behaviors, as measured by the teacher
      ratings and screening data than the other intervention (BEP/CICO and
      Strong Kids small group) at post-test and at follow-up (four months post-
      intervention).
   
   b. **H2:** There will be a significant interaction for student behavior as
      measured by teacher rating scales and screening data, for the intervention
      group (BEP/CICO and Strong Kids small group) and student problem type
      (internalizing and externalizing) at post-test and at follow up (four months
      post-intervention).

2. **R2:** What is the social validity for each intervention?
   
   a. **H3:** School personnel (school counselors) can implement the interventions
      with typical resources, as measured through fidelity checklists.
b. H4: School personnel find the interventions to be socially valid as measured through social validity questionnaires at the conclusion of the study.

Sample

The study sample was derived from four elementary schools in the northeastern United States. All four schools are in the same district. School populations range from 280-600 students. Participants were selected from a smaller group of students identified as needing two tier two interventions through universal screening for behavior in grades three through five. The district demographics are 97.24% white, .55% black, 1.29%, multi-racial, .18% Asian, .37% American-Indian/Alaskan, and .37% Hispanic. Students with IEP’s are 8.5% of the population and 38% of students are identified as economically disadvantaged.

The sample was selected through a multi-gated universal screening tool, the SSBD (Walker & Severson, 1992). First, in stage one, the classroom teacher ranked all students in the classroom according to internalizing (shy, unassertive, fearful) and externalizing behavior (aggression, defiance, non-compliance). Second, in stage two: the top three ranked students’ behavior was measured using the Walker Assessment Scale/Walker Survey Instrument (WAS/WSI: Sprague, 2010; Walker & McConnell, 1988). Typically, research has not included the third gate of the SSBD, which is direct observation (Mitchell et al., 2011). This study utilized the district’s third gate of screening, which included a review of data in the following areas over a nine week period: office disciplinary referrals (2 or more), non-emergency visits to the nurse (4 or more), attendance (6 or more absences), and behavior grades on most recent report card.
(25% of scores indicate “needs improvement”). Students who received less than a total score of 61 on the WAS/WSI and met at least one other criterion listed above were randomly assigned to one of the treatment groups (internalizing and externalizing students were evenly distributed using stratified random sample). Students who were excluded from the study are students identified as having an emotional disturbance, and students whose behavior impedes their learning and that of others and requires a positive behavior support plan through special education services designated in an Individualized Education Program (IEP). Also, students with extremely violent or aggressive behaviors were not included in the study. These students are considered tier three candidates due to the severity of their behavior, and are not appropriate for a tier two intervention.

Measures

**Systematic Screening for Behavior Disorders (SSBD).** The SSBD (Walker & Severson, 1992) is considered a reliable and valid measure for identifying students at risk for behavior disorders. The SSBD has been highly evaluated and determined to be the “gold standard” of behavior screening (Lane et al., 2009). The SSBD includes teacher nomination for behavior concerns for both internalizing and externalizing behavior type and teacher rating scales to determine the extent of perceived behavior problems. For this study, stage one of the multi-gating system was utilized. Stage one has strong evidence of reliability and validity. Interrater reliability was determined comparing scores from pairs of teachers and teacher/teacher-aides (.89-.94) for the externalizing component and (.82-.90) for the internalizing component. Test-retest reliability coefficients were reported at (.81-.88) for externalizing and (.74-.79) for internalizing. Sensitivity of the instrument was measured and determined to be adequate. Stage two instruments, the
Maladaptive Rating Scale and the Critical Events Index, were correlated with the Walker-McConnell Scale of Social Competence and School Adjustment (WMS). The coefficients reported were (.57, .79, and .44, p < .001). Although the reliability coefficients were moderate, they were considered statistically significant. A shortened version of the WMS, The Walker Assessment Survey (WAS/WSI) is the stage two rating scale used in this study. The Walker Survey Instrument (WSI) is an alternate name for the WAS. This is the instrument currently being utilized within Gate 2 of the SSBD in the district where the research was conducted.

Walker Assessment Scale. The Walker Assessment Scale/Walker Survey Instrument (WAS/WSI; Walker & McConnell, 1988) is a measure that has been used as a gate two instrument with the SSBD (Sprague, 2010). It is a shortened version of the Walker-McConnell Scale of Social Competence and School Adjustment, Elementary Version (WMS; Walker & McConnell, 1988). The WMS has 43 items as compared to the WAS/WSI, which has 19. Both scales indicate subgroups: teacher-preferred social interactions, peer-preferred social interactions, and social adjustment. The WMS was standardized with 1,812 students in grade K-6. The WMS has good reliability coefficients for internal consistency (α > .90), test-retest (r = .97 at two weeks and r = .61 at six months), and moderate coefficients for interrater reliability (.53-.77). Content validity of the WMS was determined to be sufficient via careful selection and review of behavioral descriptors by experts (Demaray & Ruffalo, 1995). The WMS was compared to the WAS/WSI in eight other studies with positive effects (rS = .90 or higher). Two research studies evaluated the WMS against other behavior rating scales and identified the WMS as a psychometrically sound instrument (Harness, Epstein, Riser, & Pearson, 1999; Webber,
Scheuermann, & Wheeler, 1992). The WMS and WAS/WSI were correlated and found to be highly related across subscales with teacher-preferred behavior ($r=.95$), peer-preferred behavior ($r=.96$), school adjustment ($r=.99$), and total score ($r=.98$) (Duerr Evaluation Resources, 2013). These data suggest that the shorter version of the WMS, the WAS/WSI, can be used with great confidence to gather student data on social competence and school adjustment.

**Behavior Education Program (BEP) measures.**

**BEP fidelity check.** For this study, fidelity of BEP interventions was assessed on three randomly selected days with each interventionist. Data were collected on five areas: (a) student attending morning check-in with counselor, (b) student taking his or her daily report card to each class and being evaluated by each teacher, (c) student attending end of day check-out with the counselor, (d) parent signature being obtained on the daily report card, and (e) school counselor collecting the data for progress monitoring. Data were summarized using percentage scores by dividing the number of students who adhered to each area by the total number of students in the study who are receiving check-in/check-out intervention. This procedure was utilized in a previous study and indicated high levels of implementation of services (>80%) except in the area of parent signature on the document (48%) (Hawken, 2006). I also utilized the BEP Fidelity of Implementation Measure (BEP-FIM) to determine the overall BEP implementation fidelity in each school (Crone et al., 2010).

**BEP social validity.** For this study, the Self-Assessment of Contextual Fit in Schools was utilized to determine if the counselors find the BEP to be an effective and easy to use intervention (Horner, Salentine, & Albin, 2003). This self-assessment is a 16-
item Likert-scale questionnaire with a six-point continuum (1=strongly disagree to 6=strongly agree). The questions fall into eight domains rating the interventionist’s knowledge of the treatment and his or her ability to implement the treatment with standard school resources. According to Benazzi, Horner, and Good (2006):

The contextual fit questionnaire was based on factor analysis results provided by Sandler et al. (2002) and from content validity results reported by Salantine & Horner (2002), documenting statistically significant covariation between contextual fit scores from the Contextual Fit Rating Scale and the likelihood that typical behavior support team members would select an intervention for implementation. (p. 165)

The contextual fit questionnaire has been utilized in other studies to document the social validity of the identified intervention (Campbell & Anderson, 2011; Rodriguez, Loman, & Horner, 2009).

**Strong Kids curriculum measures.**

**Strong Kids fidelity check.** Implementation fidelity of the Strong Kids curriculum was assessed through a series of scheduled observations. The components for each lesson are included in an implementation checklist. Sections of the lessons are checked off as “not implemented”, “partially implemented”, or “fully implemented”. A percentage score for lesson fidelity was obtained by taking the number of components observed in each lesson by the total number of components available. This type of fidelity check was utilized in several studies evaluating the Strong Kids curriculum (Gueldner, 2006; Levitt, 2009; Tran, 2007; Whitcomb, 2009). The school counselors evaluated their lesson fidelity on three occasions.
**Strong Kids social validity.** The authors of the Strong Kids curriculum were invested in creating a program that was considered “useful, engaging, appropriate, interesting, and easy to use” (Merrell, 2010, p. 62). Social validity for the Strong Kids curriculum can be measured using a brief survey (Marchant et al., 2010). The *Strong Kid Survey* is a 32-item experimental questionnaire that assesses social validity on five domains (a) alignment with goals and expectations, (b) procedural acceptance, (c) satisfaction with results, (d) program feasibility, and (e) general likes and dislikes. The responses are on a 5-point Likert scale (1=strongly disagree to 5=strongly agree) (Levitt, 2009). The survey was developed using the principles to assess for social validity as described by (Wolf, 1978). Several research studies utilized the Strong Kids Survey to determine if the treatment interventionists found the Strong Kids curriculum socially valid and feasible (Gueldner, 2006; Gueldner & Merrell, 2011; Harlacher, 2008; Kramer et al., 2010; Levitt, 2009; Merrell, 2010; Nakayama, 2008).

**Other treatment outcomes measures.**

**Office disciplinary referral.** For this study, office disciplinary referrals (ODR’s) were utilized to determine evidence of student problem behavior. Office disciplinary referrals are considered a valid measure of a problem behavior, and typically identify students with externalizing behavior problems (Irvin et al., 2006; McIntosh et al., 2009; Mitchell et al., 2011).

**Grade point average and screening data.** Grade point average (GPA) and other screening data (nurse’s visits, attendance, and behavior grade on report card) were also measured before and after treatment.
Procedures

First, interventionists (school counselors) participated in a review of Strong Kids small group and BEP procedures to maintain fidelity and universality. School counselors identified tier two students through a previously established universal screening procedure. Assent to participate in the study was obtained from the four school counselors in each building (Appendix D). Once students were identified as tier two behavior candidates, parent permission letters were sent home to obtain consent for student data to be utilized in the study. The researcher did not take part in any screening or identification of students for tier two services. Once parent permission was received, the school counselors met with the students, reviewed the voluntary assent form and obtained student signatures. Once both parent permission (Appendix C) and student assent (Appendix E) was given, the school counselor and researcher separated the students into internalizing and externalizing groups and then randomly assigned each student to one of two treatment groups, either BEP or Strong Kids small group social skills. Screening data for each student was obtained from the school counselor [teacher nomination procedure (WAS/WSI), absences, number of visits to nurse, report card information, grade point average, and office disciplinary referrals].

Students received the assigned standard practice over the course of an eight-week period with the elementary counselor. Students randomly assigned to the BEP group were given a standardized daily behavior report card (Appendix I). The student checked in each morning with the counselor in the school counselor office to obtain his or her card. The student then carried his or her card to each class throughout the day and received teacher feedback regarding behavior on the form. Students earned up to two
points per class for positive behavior. The students checked out with the school counselor at the end of the day and took the daily report card home to his or her parent for signature. The intervention lasted eight weeks and took approximately 7-10 minutes each day for feedback and check-in/check-out procedures. The BEP procedures outlined were consistent at all four elementary building with the same reinforcements and reward systems.

The students assigned to the small group skills training group met once a week for 30-minute sessions over an eight-week period. The school counselors utilized the Strong Kids curriculum to administer the intervention. The topics covered in the curriculum are: understanding feelings, dealing with anger, understanding other people’s feelings, clear and positive thinking, solving problems, and letting go of stress. Each session included a review of previous skills, introduction of new skills, model and role-play of new skills, and closure of the session.

After the eight-week sessions for both interventions, screening data was again collected, allowing for comparisons between data collected before the implementation of services and data collected after implementation. Fidelity checklists were conducted at three random time points throughout the study with the school counselor. Social validity surveys were conducted at the end of the study on both interventions. Screening data were also collected at four months post-intervention to make a determination of long-term intervention effects.

**Data Analysis**

A comparison of two groups, with two levels, using repeated measures analysis of variance (ANOVA) was conducted. Intervention effectiveness was evaluated according
to treatment group (BEP/CICO vs. Strong Kids small group) and student problem type (internalizing vs. externalizing). If the ANOVA indicated significant differences between groups, then follow-up one-way paired t-tests were conducted to determine specific group differences. Also, one-way ANOVAs on student gain scores delineated differences at each time point between groups. Social validity and treatment fidelity were reported with descriptive statistics.

**Conclusion**

This study evaluated two behavior interventions at the secondary tier level. Measurements on treatment fidelity with each intervention are included. Student information, including teacher rating scales, ODRs, GPA, attendance, nurse visits, behavior grade on report card, and student self-assessment were collected prior to intervention and upon completion of each intervention group. Multiple repeated measure ANOVAs were conducted to examine research question #1. A follow-up analysis was conducted if there was significance found on ANOVAs, which include paired t-tests and one-way ANOVAs on gain scores. Research Question #2 was examined through descriptive statistics to describe the interventionists’ perception of the interventions’ social validity and the interventionists’ ability to conduct the interventions with typical resources.
CHAPTER 4

RESULTS

This chapter presents the descriptive and statistical results. The findings are presented via graphs and narratives. First, descriptive statistics are reported for all variables in the study. Next, statistical assumptions are examined in order to determine if statistical analyses are viable with this data set. Finally, results of the analyses for each research question are explored. To conduct all statistical computations, SPSS 22 (SPSS 2014) statistical software was utilized. G*Power 3.0 (Faul, Erdfelder, Lang, & Buchner, 2007) was used to determine effect sizes.

Descriptive Analysis and Sample

The data sample represents 39 third, fourth, and fifth grade students, in four schools in the same school district, who participated in the study. The participants were selected through universal behavior screening in each building as tier two behavior candidates. School counselors reviewed screening data, including teacher nominations, teacher rating scales, report card data, non-emergency visits to the nurse, office disciplinary referrals, and attendance. Students were identified into two problem-type groups (internalizing or externalizing) based on teacher nomination forms, and then randomly assigned to one of two treatment groups (BEP or Strong Kids small group). The interventions conducted by the school counselor lasted eight weeks. Post-data were collected at that time. Four months after treatment, another set of data was collected on each student to investigate long-term effects.

The original sample was comprised of 17 third grade students, 8 fourth grade students, and 14 fifth grade students (Table 1). There were 33 males and 6 females in the
study (Table 2). Students came from four schools, 17 students from school #1, 8 students from school #2, 5 students from school #3, and 9 students from school #4. Students were identified as either internalizing (18) or externalizing (21) (Table 3) and then randomly assigned to either BEP (18 students) or Strong Kids small group (21) (Table 4). Originally, the sample had 40 students, but one student in school #2 dropped out of the study due to being placed on homebound instruction. All students had pre-referral data and post-intervention data. The participants also had parental consent, student assent and were recommended through schoolwide universal screening as tier two intervention candidates.

Table 1

*Descriptive Analysis of Sample – Grade*

<table>
<thead>
<tr>
<th>Grade</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 3</td>
<td>17</td>
<td>43.6</td>
</tr>
<tr>
<td>Grade 4</td>
<td>8</td>
<td>20.5</td>
</tr>
<tr>
<td>Grade 5</td>
<td>14</td>
<td>35.9</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2

*Descriptive Analysis of Sample – Gender*

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>33</td>
<td>84.6</td>
</tr>
<tr>
<td>Female</td>
<td>6</td>
<td>15.4</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 3

*Descriptive Analysis of Sample – Problem Type*

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internalizing</td>
<td>18</td>
<td>46.2</td>
</tr>
<tr>
<td>Externalizing</td>
<td>21</td>
<td>53.8</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4

*Descriptive Analysis of Sample – Intervention Group*

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong Kids Small Group</td>
<td>21</td>
<td>53.8</td>
</tr>
<tr>
<td>BEP (Behavior Education</td>
<td>18</td>
<td>46.2</td>
</tr>
<tr>
<td>Program)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>100</td>
</tr>
</tbody>
</table>

**Missing Data**

Data were collected from 39 students in four buildings from the same school district. All students had pre-referral data and post-intervention data; however, six of the students do not have follow-up data from four months after intervention due to moving outside of the district.

**Assumptions**

Multiple 2x2x3 factorial repeated measures analysis of variance (ANOVA) were conducted for scores on the Walker Assessment Scale (WAS)/Walker Survey Instrument (WSI) before intervention, immediately following intervention, and four months post-intervention. The repeated measures ANOVAs must meet the following assumptions: homogeneity of variance, normality, independence of observation, equal covariance matrices, and sphericity (Stevens, 2009). It was determined that the variances in the population from which the groups were sampled were equal as the Levene’s test was not significant. Normality was assessed using the Shapiro-Wilk’s test of normality. The
dependent variables used in the study (WSI Total, WSI peer-preferred social, WSI teacher-preferred social, and WSI school adjustment) were normally distributed across all three-time periods. The following dependent variables (pre-screening data) were omitted due to not meeting the normality assumptions (office disciplinary referrals, nurse’s visits, absences, report card data, and grade point averages). All student responses were not influenced by those of another; therefore meeting the independence of observation assumption. Equal covariance of matrices, which is an added assumption to measure the repeated factor across groups, was evaluated using the Box’s M test; this assumption was also not violated. Mauchly’s test indicated that the assumption of sphericity had been violated in two of the repeated measures ANOVAs; therefore, degrees of freedom were corrected using the Huynh-Feldt and Greenhouse-Geisser statistic.

**Research Questions and Hypotheses**

This study attempted to answer two research questions. The first research question asked which intervention increases student scores from pre-test to post-test and four months post-test. The interactions for identified problem type and intervention group were also explored. The second research question examined the social validity for each intervention (BEP/CICO and Strong Kids small group). The purpose of this study was to compare the effectiveness of two treatment interventions across two groups at the second tier of a RtI behavior framework. Student problem type (internalizing or externalizing) was evaluated with treatment outcomes to determine which intervention was more successful. In addition, the study reviewed treatment integrity of each intervention and the interventionists’ perception of social validity. Multiple three-way (2x2x3) repeated measures factorial ANOVAs were used to evaluate the first research
question, with follow-up paired t-tests and one-way ANOVAS on gain scores for post-hoc analysis. Descriptive statistics were used to evaluate the second research question. SPSS 22.0 was used to analyze the results. All analyses in this study used a \( p < .05 \) level of significance. Effect size was analyzed using G*Power 3.0 (Faul et al., 2007).

**Research Question 1a: Three-way repeated measures mixed factorial ANOVA**

**Hypothesis 1 and 2: WSI total score.** The first research question was designed to determine which group intervention was more effective in increasing pro-social behavior and decreasing negative behavior. A three-way repeated measures factorial ANOVA (Table 6) was conducted with between-subjects factors, group and problem type; and within subjects factors, student’s WSI Total score at three time periods [pre-intervention, post-intervention (eight weeks of intervention), and post-post-intervention (four months after intervention)]. It was hypothesized that one of the interventions would be more effective in increasing positive behaviors and decreasing negative behaviors, as measured by the teacher ratings than the other intervention at post-test and follow up. It was also hypothesized that there would be a significant interaction for student behavior for intervention group (BEP/CICO and Strong Kids small group) and student problem type (internalizing or externalizing) at post-test and at follow-up (four months after intervention).

Levene’s Test of Homogeneity of Variance and Box’s test of covariance equality were computed and found to be non-significant. Mauchly’s test was conducted to assess for the assumption of sphericity. The test indicated that the assumption of sphericity had been violated, \( \chi^2(2) = 11.170, p = .004, (p<.05) \). Therefore, the degrees of freedom were
corrected using Huynh-Feldt statistic, due to $\varepsilon > .750$, $\varepsilon = .867$. The results show a significant time effect, $F(1.734, 43.643) = 7.374, p = .002 \text{ (} p < .01 \text{)}$, this represents a large effect, $d = .505$. There was a significant interaction between time and treatment group, $F(1.734, 43.643) = 4.475, p = .020 \text{ (} p < .05 \text{)}$. This represents a medium treatment effect, $d = 393$. There was also a significant interaction between time and problem-type $F(1.734, 43.643) = 5.537, p = .009 \text{ (} p < .01 \text{)}$. This represents a medium effect, $d = .436$. There was not a significant interaction between time, intervention group, and problem-type $F(1.734, 43.643) = .057, p = .924 \text{ (} p > .05 \text{)}$.

Table 5

**WSI Total Descriptive Statistics**

<table>
<thead>
<tr>
<th></th>
<th>Pre-WSI $M$</th>
<th>$SD$</th>
<th>Post-WSI $M$</th>
<th>$SD$</th>
<th>4 mo. Post WSI $M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BEP/CICO</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalizing</td>
<td>53.17</td>
<td>7.36</td>
<td>54.67</td>
<td>3.67</td>
<td>48.00</td>
<td>16.43</td>
</tr>
<tr>
<td>Externalizing</td>
<td>50.60</td>
<td>6.87</td>
<td>55.30</td>
<td>11.35</td>
<td>59.00</td>
<td>13.29</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>51.56</td>
<td>6.93</td>
<td>55.06</td>
<td>9.05</td>
<td>54.88</td>
<td>15.04</td>
</tr>
<tr>
<td><strong>Small Group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalizing</td>
<td>53.00</td>
<td>7.23</td>
<td>61.50</td>
<td>7.52</td>
<td>61.00</td>
<td>12.17</td>
</tr>
<tr>
<td>Externalizing</td>
<td>44.33</td>
<td>4.64</td>
<td>53.44</td>
<td>10.04</td>
<td>65.89</td>
<td>12.53</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>48.41</td>
<td>7.31</td>
<td>56.18</td>
<td>9.26</td>
<td>63.59</td>
<td>12.23</td>
</tr>
</tbody>
</table>

43.643) = 5.537, $p = .009 \text{ (} p < .01 \text{)}$. This represents a medium effect, $d = .436$. There was not a significant interaction between time, intervention group, and problem-type $F(1.734, 43.643) = .057, p = .924 \text{ (} p > .05 \text{)}$.

Table 6

**Three-way Repeated Measures ANOVA for Time and WSI Total between Groups and Problem Type**

<table>
<thead>
<tr>
<th>Effect</th>
<th>$Df$</th>
<th>$F$</th>
<th>$p$ value</th>
<th>Partial Eta Squared</th>
<th>Power</th>
<th>$d$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>1.734</td>
<td>7.374</td>
<td><strong>.002</strong></td>
<td>.203</td>
<td>.898</td>
<td>.505</td>
</tr>
<tr>
<td>Time * Problem Type</td>
<td>1.734</td>
<td>5.537</td>
<td><strong>.009</strong></td>
<td>.160</td>
<td>.793</td>
<td>.393</td>
</tr>
<tr>
<td>Time * Group</td>
<td>1.734</td>
<td>4.475</td>
<td>* .020</td>
<td>.134</td>
<td>.699</td>
<td>.436</td>
</tr>
<tr>
<td>*Problem Type * Group</td>
<td>1.734</td>
<td>.057</td>
<td>.924</td>
<td>.002</td>
<td>.058</td>
<td>.045</td>
</tr>
</tbody>
</table>

*p ≤ .05, **p ≤ .01
In order to determine which groups were different, post-hoc comparisons were conducted using paired samples t-tests across both groups and problem identification (Table 7). The paired tests were time 1 – time 2, time 2-time 3, and time 1- time 3.

Table 7

*Paired Sample t-tests on the interaction between Time and Problem-Type - WSI Total Score*

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p-value (one-tailed)</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internalizing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1 Time 1</td>
<td>51.33</td>
<td>7.30</td>
<td>-3.95</td>
<td>***.000</td>
<td>.935</td>
</tr>
<tr>
<td>Time 2</td>
<td>59.61</td>
<td>6.41</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 2 Time 2</td>
<td>58.57</td>
<td>6.93</td>
<td>.919</td>
<td>.375</td>
<td>.245</td>
</tr>
<tr>
<td>Time 3</td>
<td>55.43</td>
<td>15.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 3 Time 1</td>
<td>53.07</td>
<td>7.00</td>
<td>-.506</td>
<td>.621</td>
<td>.135</td>
</tr>
<tr>
<td>Time 3</td>
<td>55.43</td>
<td>15.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Externalizing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1 Time 1</td>
<td>47.38</td>
<td>6.49</td>
<td>-3.704</td>
<td>***.000</td>
<td>.809</td>
</tr>
<tr>
<td>Time 2</td>
<td>54.62</td>
<td>10.85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 2 Time 2</td>
<td>54.42</td>
<td>10.50</td>
<td>-2.217</td>
<td>*.020</td>
<td>.508</td>
</tr>
<tr>
<td>Time 3</td>
<td>62.26</td>
<td>13.06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 3 Time 1</td>
<td>47.63</td>
<td>6.59</td>
<td>-4.855</td>
<td>***.000</td>
<td>1.11</td>
</tr>
<tr>
<td>Time 3</td>
<td>62.26</td>
<td>13.06</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p ≤ .05, ***p ≤ .001
Figure 2. Comparison Graphs WSI Total at Problem Type

Paired t-tests (Figure 2) indicated that internalizing students exhibited significant increases on the WSI Total Scores from pre-test ($M=51.33$, $SD = 7.30$) to post-test ($M = 59.61$, $SD = 6.41$), $t(17) = -3.965$, $p < .001$ (one-tailed). This represents a very strong effect, $d = .935$. Students identified as externalizers showed significant growth in scores from pre-test ($M=47.38$, $SD =6.49$) to post-test ($M=54.62$, $SD=10.85$), $t(20)=-3.704$, $p < .001$, this represents a very large effect, $d = .809$. Externalizing students also showed significant growth from post-test ($M = 54.42$, $SD = 10.50$) to four months post-test ($M = 62.26$, $SD = 13.06$), $t(18) = -2.217$, $p < .05$; this represents a large effect, $d = .508$.

Externalizers showed significant growth from pre-test ($M = 47.63$, $SD = 6.59$) to four months post-test ($M = 62.26$, $SD = 13.06$), $t(18) = -4.855$, $p < .001$, and the effect size was extremely large, $d = 1.11$.

In order to determine if compared groups were different over time and determine if the differences were statistically significant, follow-up one-way ANOVAs (Table 8)
Table 8

One-way ANOVA on gain scores WSI Total Score and Problem Type

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>p value</th>
<th>Partial Eta Squared</th>
<th>Power</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-Pre</td>
<td>.011</td>
<td>.916</td>
<td>.000</td>
<td>.051</td>
<td>.232</td>
</tr>
<tr>
<td>Ppost-Post</td>
<td>5.298</td>
<td>*.029</td>
<td>.154</td>
<td>.605</td>
<td>.426</td>
</tr>
<tr>
<td>Ppost-pre</td>
<td>7.524</td>
<td>**.010</td>
<td>.206</td>
<td>.755</td>
<td>.509</td>
</tr>
</tbody>
</table>

*p ≤ .05, **p ≤ .01

were conducted comparing student gain scores. Students identified as externalizers showed significant growth over students identified as internalizers on the WSI total score from post-test to four month follow up $F(1, 32) = 5.298, p = .029, p < .05, d = .426$, which indicates a medium effect size. Externalizing students also showed significant growth from pre-test to four month follow up $F(1,32) = 7.524, p = .010, p < .05, d = .509$, which represents a large effect size.

Paired t-tests (Table 9) indicated that students who participated in the Strong Kids small group condition showed significant growth on WSI Total Scores from pre-test ($M=47.81, SD = 6.95$) to post-test ($M = 57.43, SD = 9.48$), $t(20) = -5.811, p < .001$ (one-tailed). This represents a very strong effect, $d = 1.27$. Students in Strong Kids small group also showed significant growth in scores from post-test ($M = 57.24, SD =9.61$) to four months post-test ($M = 63.59, SD = 12.23$), $t(16)=-2.202, p < .05$ (one tailed), this represents a large effect, $d = .531$. Students participating in Strong Kids small group also showed significant growth from pre-test ($M = 48.41, SD= 7.31$) to four months post-test ($M = 63.58, SD = 12.23$), $t(16) = -4.35, p < .001$(one-tailed), this represents a very large effect, $d = 1.08$. Students who participated in BEP/CICO showed significant growth
from pre-test \((M = 50.83, SD = 7.06)\) to post-test \((M = 56.33, SD = 9.35)\), \(t(17) = -2.381, p < .05\) (one-tailed), the effect size was large, \(d = .561\).

Table 9

**Paired Sample t-tests on the interactions between Time and Intervention Group - WSI Total Score**

<table>
<thead>
<tr>
<th>Intervention Group</th>
<th>Pair</th>
<th>Time</th>
<th>(M)</th>
<th>(SD)</th>
<th>(T)</th>
<th>(p)-value (one-tailed)</th>
<th>(d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong Kids Small Group</td>
<td>Pair 1</td>
<td>Time 1</td>
<td>47.81</td>
<td>6.95</td>
<td>-5.811</td>
<td>***.000</td>
<td>1.27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time 2</td>
<td>57.43</td>
<td>9.48</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time 3</td>
<td>63.59</td>
<td>12.23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pair 2</td>
<td>Time 2</td>
<td>57.24</td>
<td>9.61</td>
<td>-2.202</td>
<td>*.021</td>
<td>.531</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time 3</td>
<td>63.59</td>
<td>12.23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pair 3</td>
<td>Time 1</td>
<td>48.41</td>
<td>7.31</td>
<td>-4.350</td>
<td>***.000</td>
<td>1.08</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time 3</td>
<td>63.59</td>
<td>12.23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEP/CICO</td>
<td>Pair 1</td>
<td>Time 1</td>
<td>50.83</td>
<td>7.06</td>
<td>-2.381</td>
<td>*.015</td>
<td>.561</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time 2</td>
<td>56.33</td>
<td>9.35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time 3</td>
<td>54.88</td>
<td>15.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pair 2</td>
<td>Time 2</td>
<td>55.06</td>
<td>9.05</td>
<td>.042</td>
<td>.967</td>
<td>.010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time 3</td>
<td>54.88</td>
<td>15.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pair 3</td>
<td>Time 1</td>
<td>51.56</td>
<td>6.93</td>
<td>-.833</td>
<td>.209</td>
<td>.209</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time 3</td>
<td>54.88</td>
<td>15.04</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(*p \leq .05, ***p \leq .001\)

---

**Figure 3.** Comparison Graphs (paired t-test) at Int. Group – WSI Total Score
Table 10 - One-way ANOVA on gain scores WSI Total Score and Intervention Group

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>p value</th>
<th>Partial Eta Squared</th>
<th>Power</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-Pre</td>
<td>2.152</td>
<td>.151</td>
<td>.058</td>
<td>.297</td>
<td>.248</td>
</tr>
<tr>
<td>Ppost-Post</td>
<td>2.168</td>
<td>.152</td>
<td>.070</td>
<td>.296</td>
<td>.274</td>
</tr>
<tr>
<td>Ppost-pre</td>
<td>7.086</td>
<td>*.013</td>
<td>.196</td>
<td>.730</td>
<td>.494</td>
</tr>
</tbody>
</table>

*p≤ .05

In order to determine if compared groups were different over time and determine if the differences were statistically significant, follow-up one-way ANOVAs (Table 10) were conducted comparing student gain scores. On the WSI Total Score, students in Strong Kids small group showed significant growth over students in BEP/CICO from pre-test to four month follow up $F(1, 32) = 7.086, p = .013, p < .05, d = .494$, which indicates a medium effect size.

It was hypothesized that one of the interventions would be more effective in increasing positive behaviors and decreasing negative behaviors than the other intervention. The null hypothesis was rejected; students who participated in the Strong Kids small group condition showed greater gains on the WSI Total Score from post-test to follow-up, and from pre-test to four months follow-up. Students in BEP/CICO and Strong Kids small group made significant gains from pre-test to post-test; however, students in the Strong Kids small group condition showed greater gains with a larger effect size. Student gain scores indicated that students in small groups showed significantly more growth from post-test to four month follow-up and from pre-test to follow-up than students in BEP/CICO. It was also hypothesized that there would be a significant interaction for student behavior as measured by teacher rating scales for the intervention group and student problem type. Although there was a significant
interaction for time and intervention group and time and problem type, there was not a significant three-way interaction. Students identified as internalizers and students identified as externalizers showed significant growth from pre-test to post test. Students identified as externalizers also showed significant growth on the WSI total score from post-test to four month follow up and from pre-test to four month follow up. Student gain scores indicated that students identified as externalizers showed significantly higher scores on the WSI total from post-test to four month follow-up and pre-test to follow-up than internalizers. Therefore, scores were influenced by the student’s placement in treatment group and his or her identified problem type, but scores were not influenced by both factors simultaneously.

**Research Question 1b: Three-way repeated measures mixed factorial ANOVAs.**

**Hypothesis 1 and 2: WSI teacher-preferred social, peer-preferred social, and school adjustment.** The first research question was designed to explore and determine how identified internalizing and externalizing students respond to each intervention. Due to the significance found on the main effects and interactions on WSI Total score, three-way repeated measures factorial ANOVAs were conducted on each of the three sub-scales: teacher-preferred social interactions (WSITP), peer-preferred social interactions (WSIPP), and school adjustment behaviors (WSISA). Teacher-preferred social interactions include compromising with peers, accepting constructive criticism from peers, and responding appropriately to conflict. Peer-preferred social interactions include sharing laughter with peers, interacting with a number of different peers, and inviting peers to share activities. School adjustment behaviors include using free time
appropriately, having good work habits, and doing seatwork assignments as directed.
Classroom teachers completed WSIs for each student in the study at each time interval (pre-intervention, post-intervention, and post-post intervention). Classroom teachers were trained to observe student interactions and to complete the instrument accurately. In order to ascertain how students identified as internalizing and externalizing performed at each time interval, the three sub-scales were evaluated separately. The decision was made to use three repeated measures ANOVAs instead of a RM MANOVA due to the significance found on the WSI Total Score in research question one with both main effects and interactions. Repeated measures ANOVA delineated areas in which students’ increased positive behaviors (teacher-preferred social interactions, peer-preferred social interactions, and school adjustment). Also, MANOVA requires dependent variables to be correlated to some extent (Mayers, 2013). After completing a Pearson’s two-tailed correlation analysis, the three sub-scales were not correlated highly enough to warrant a MANOVA test. When levels of significance were found, post-hoc analyses were conducted.

*Teacher-preferred social sub-scale.* A three-way (2x2x3) repeated measures factorial ANOVA was conducted with between-subject factors, group and problem-type and within subjects factor student scores on teacher-preferred social interaction sub-scale at the three time intervals (Table 12). It was hypothesized that one of the interventions would be more effective in increasing positive behaviors and decreasing negative behaviors for both internalizing and externalizing students. It was also hypothesized that a significant interaction would be present for treatment groups (BEP/CICO and Strong Kids small group) and problem type (internalizing and externalizing).
Table 11

WSI Teacher-Preferred Social Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Pre-WSI M</th>
<th>SD</th>
<th>Post-WSI M</th>
<th>SD</th>
<th>4 mo. Post WSI M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEP/CICO</td>
<td>14.50</td>
<td>1.87</td>
<td>14.33</td>
<td>2.25</td>
<td>12.50</td>
<td>4.76</td>
</tr>
<tr>
<td>Internalizing</td>
<td>13.30</td>
<td>2.63</td>
<td>14.00</td>
<td>4.33</td>
<td>16.90</td>
<td>3.51</td>
</tr>
<tr>
<td>Externalizing</td>
<td>13.75</td>
<td>2.38</td>
<td>14.13</td>
<td>2.90</td>
<td>15.25</td>
<td>4.45</td>
</tr>
<tr>
<td>Total</td>
<td>15.88</td>
<td>3.72</td>
<td>16.38</td>
<td>4.60</td>
<td>17.25</td>
<td>3.49</td>
</tr>
<tr>
<td>Small Group</td>
<td>11.56</td>
<td>4.10</td>
<td>14.00</td>
<td>3.33</td>
<td>17.00</td>
<td>3.32</td>
</tr>
<tr>
<td>Internalizing</td>
<td>13.59</td>
<td>4.40</td>
<td>15.12</td>
<td>4.48</td>
<td>17.12</td>
<td>3.30</td>
</tr>
<tr>
<td>Externalizing</td>
<td>17.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>16.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Levene’s test of homogeneity of variance and Box’s test of covariance equality were computed and found to be non-significant. Mauchly’s test of sphericity was conducted and also found to be non-significant. The results show a significant time effect $F(2, 58) = 3.976, p = .024$ ($p < .05$). This represented a medium effect, $d = .371$.

There was a significant interaction between time and problem type $F(2, 58) = 5.494, p = .007$ ($p < .05$). This represented a medium effect, $d = .435$. There was not a significant interaction between time and intervention group $F(2, 58) = 1.516, p = .228$ ($p > .05$). Additionally, there was not a significant interaction between time, intervention group, and problem type, $F(2, 58) = .382, p = .684$ ($p > .05$).

In order to determine which groups were different, post-hoc comparisons were conducted using paired samples t-tests across intervention groups (Table 13). The paired tests were time 1 – time 2, time 2 - time 3, and time 1- time 3.

Paired t-tests (Figure 5) indicated that externalizing students exhibited significant increases on the WSI teacher-preferred social scores from pre-test ($M=12.54, SD = 4.61$) to post-test ($M = 14.05, SD = 3.57$), $t(20) = -2.386, p < .05$ (one-
tailed). This represents a large effect, $d = .523$. Externalizing students also showed significant growth from post-test ($M = 14.00$, $SD = 3.73$) to four months post-test ($M = 16.95$, $SD = 3.33$), $t(18) = -2.522$, $p < .01$, this represents a large effect, $d = .581$. Externalizers showed significant growth from pre-test ($M = 12.47$, $SD = 3.42$) to four months post-test ($M = 16.95$, $SD = 3.33$), $t(18) = -4.577$, $p < .001$; the effect size was extremely large, $d = 1.05$. Paired sample t-tests with internalizing students were not significant.

Table 12

<table>
<thead>
<tr>
<th>Effect</th>
<th>df</th>
<th>$F$</th>
<th>$p$ value</th>
<th>Partial Eta Squared</th>
<th>Power</th>
<th>$D$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>2</td>
<td>3.976</td>
<td>**024</td>
<td>.121</td>
<td>.702</td>
<td>.371</td>
</tr>
<tr>
<td>Time * Problem Type</td>
<td>2</td>
<td>5.494</td>
<td>**007</td>
<td>.159</td>
<td>.832</td>
<td>.435</td>
</tr>
<tr>
<td>Time * Group</td>
<td>2</td>
<td>1.694</td>
<td>.228</td>
<td>.050</td>
<td>.310</td>
<td>.223</td>
</tr>
<tr>
<td>Time * Problem Type * Group</td>
<td>2</td>
<td>.382</td>
<td>.684</td>
<td>.013</td>
<td>.109</td>
<td>.115</td>
</tr>
</tbody>
</table>

*p≤ .05; ** $p ≤ .01
Figure 4. - Comparison groups WSI Teacher-Preferred social at Intervention Groups

Table 13

Paired Sample t-tests on the interactions between Time and Problem Type - WSI Teacher Preferred Social

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p-value (one-tailed)</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internalizing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1 Time 1</td>
<td>14.44</td>
<td>3.62</td>
<td>-1.250</td>
<td>.114</td>
<td>.295</td>
</tr>
<tr>
<td>Time 2</td>
<td>15.61</td>
<td>3.62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 2 Time 2</td>
<td>15.50</td>
<td>3.80</td>
<td>.272</td>
<td>.365</td>
<td>.074</td>
</tr>
<tr>
<td>Time 3</td>
<td>15.21</td>
<td>4.61</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 3 Time 1</td>
<td>15.29</td>
<td>3.05</td>
<td>.052</td>
<td>.203</td>
<td>.010</td>
</tr>
<tr>
<td>Time 3</td>
<td>15.21</td>
<td>4.61</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Externalizing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1 Time 1</td>
<td>12.54</td>
<td>4.61</td>
<td>-2.386</td>
<td>*.013</td>
<td>.522</td>
</tr>
<tr>
<td>Time 2</td>
<td>14.05</td>
<td>3.57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 2 Time 2</td>
<td>14.00</td>
<td>3.73</td>
<td>-2.522</td>
<td>**.010</td>
<td>.581</td>
</tr>
<tr>
<td>Time 3</td>
<td>16.95</td>
<td>3.33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 3 Time 1</td>
<td>12.47</td>
<td>3.42</td>
<td>-4.577</td>
<td>***.000</td>
<td>1.05</td>
</tr>
<tr>
<td>Time 3</td>
<td>16.95</td>
<td>3.33</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p ≤ .05, **p ≤ .01, ***p ≤ .001
Figure 5. Comparison Graphs (paired t-tests) Problem Type – WSI Teacher-Preferred Social

Table 14 - One-way ANOVA on gain scores WSI Teacher-Preferred Social and Problem Type

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>p value</th>
<th>Partial Eta Squared</th>
<th>Power</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-Pre</td>
<td>.191</td>
<td>.665</td>
<td>.005</td>
<td>.071</td>
<td>.276</td>
</tr>
<tr>
<td>Ppost-Post</td>
<td>4.222</td>
<td>*.049</td>
<td>.127</td>
<td>.511</td>
<td>.381</td>
</tr>
<tr>
<td>Ppost-pre</td>
<td>8.748</td>
<td>**.006</td>
<td>.232</td>
<td>.816</td>
<td>.550</td>
</tr>
</tbody>
</table>

*p ≤ .05, **p ≤ .01

In order to determine if comparison groups were different over time and determine if the differences were statistically significant, follow-up one-way ANOVAs (Table 14) were conducted comparing student gain scores. Students identified as externalizers showed significant growth over students identified as internalizers from post-test to four month follow up $F(1, 32) = 4.222, p = .049, p < .05, d = .381$, which indicates a medium effect size. Externalizing students also showed significant growth
from pre-test to four month follow up $F(1,32) = 8.748, p = .006, p < .05, d = .550$, which represents a large effect size.

It was hypothesized that one of the interventions would be more effective in increasing positive behaviors and decreasing negative behaviors than the other intervention. Due to the lack of interaction for time and treatment group, the null hypothesis is rejected; students in the BEP/CICO and Strong Kids small group scored equivalently on the teacher-preferred subscale of the WSI. It was also hypothesized that there would be a significant interaction for student behavior as measured by teacher rating scales for the intervention group and student problem type. Although there was a significant interaction for time and problem type, there was not a significant three-way interaction. Students identified as externalizers showed more gains from pre-test to post-test, post-test to four months follow-up, and from pre-test to follow-up. One-way ANOVAs on student gain scores determined that externalizing students had a significantly higher score on the teacher-preferred social sub-scale than internalizing students from post-test to four months follow-up and from pre-test to follow-up. The null hypothesis was accepted; student scores were not influenced by both intervention group and problem type. In the area of teacher-preferred social interactions, the student’s identified problem type had a significant effect on his or her performance over time; however, the treatment group alone and treatment group and problem type did not influence scores.

*Peer-preferred social sub-scale.* A three-way ($2\times 2\times 3$) repeated measures factorial analysis of variance (ANOVA) was conducted with between-subjects factors, group and problem-type; and within-subjects factor, student scores on the peer-preferred subscale
on the WSI across three time periods (Table 16). It was hypothesized that one of the interventions would be more effective in increasing positive behaviors for internalizing and externalizing students than the other. It was also hypothesized that a significant interaction would be present for treatment groups (BEP/CICO and Strong Kids small group) and problem type (internalizing and externalizing).

Table 15

**WSI Peer-Preferred Social Descriptive Statistics**

<table>
<thead>
<tr>
<th></th>
<th>Pre-WSI</th>
<th></th>
<th>Post-WSI</th>
<th></th>
<th>4 mo. Post WSI</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td><strong>BEP/CICO</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalizing</td>
<td>22.00</td>
<td>6.26</td>
<td>24.00</td>
<td>4.10</td>
<td>17.50</td>
<td>7.23</td>
</tr>
<tr>
<td>Externalizing</td>
<td>22.70</td>
<td>5.31</td>
<td>25.40</td>
<td>8.00</td>
<td>24.80</td>
<td>6.43</td>
</tr>
<tr>
<td>Total</td>
<td>22.44</td>
<td>5.49</td>
<td>24.88</td>
<td>6.68</td>
<td>22.06</td>
<td>7.45</td>
</tr>
<tr>
<td><strong>Small Group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalizing</td>
<td>19.38</td>
<td>5.15</td>
<td>24.63</td>
<td>5.01</td>
<td>22.50</td>
<td>5.37</td>
</tr>
<tr>
<td>Externalizing</td>
<td>20.00</td>
<td>5.45</td>
<td>22.78</td>
<td>6.90</td>
<td>27.67</td>
<td>5.15</td>
</tr>
<tr>
<td>Total</td>
<td>19.71</td>
<td>5.16</td>
<td>23.65</td>
<td>5.98</td>
<td>25.24</td>
<td>5.74</td>
</tr>
</tbody>
</table>

Levene’s test of homogeneity of variance, Box’s M test of covariance equality and Mauchly’s test of sphericity were conducted and found non-significant. The results show a significant time effect, \( F(2, 58) = 4.412, p = .016 \) (\( p < .05 \)). This represents a medium effect, \( d = .390 \). Also, there was a significant time and problem type interaction, \( F(2, 58) = 5.164, p = .009 \) (\( p < .01 \)). This represents a medium effect, \( d = .422 \). There was a significant time and intervention group interaction, \( F(2, 58) = 4.960, p = .010 \) (\( p \leq .01 \)). This represents a medium effect, \( d = 413 \). There was not a significant three-way interaction for time, intervention group, and problem type, \( F(2, 58) = .273, p = .762 \) (\( p > .05 \)).

Paired sample t-tests (Table 17) were conducted to determine difference in groups and problem-type. T-tests were conducted across groups and problem identification were measured at three time intervals, time 1 – time 2, time 2 – time 3, and time 1 – time 3.
Paired t-tests (Figure 7) indicated that internalizing students exhibited significant increases on WSI Total Scores from pre-test ($M=19.78$, $SD=5.46$) to post-test ($M=24.94$, $SD=4.53$), $t(19)=-5.064$, $p < .001$ (one-tailed). This represents a very strong effect, $d=1.19$. Students identified as internalizers also showed significant decreases in scores from pre-test ($M=24.36$, $SD=4.48$) to four month post-test ($M=20.36$, $SD=6.50$),
Table 17

*Paired Sample t-tests on the interaction between Time and Problem Type - WSI Peer Preferred Social*

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p-value (one-tailed)</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internalizing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>19.78</td>
<td>5.46</td>
<td>-5.064</td>
<td>***.000</td>
<td>1.19</td>
</tr>
<tr>
<td>Time 2</td>
<td>24.94</td>
<td>4.53</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 2</td>
<td>24.36</td>
<td>4.48</td>
<td>2.264</td>
<td>.020</td>
<td>.605</td>
</tr>
<tr>
<td>Time 3</td>
<td>20.36</td>
<td>6.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>20.50</td>
<td>5.59</td>
<td>.066</td>
<td>.376</td>
<td>.017</td>
</tr>
<tr>
<td>Time 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Externalizing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>21.52</td>
<td>5.43</td>
<td>-2.611</td>
<td>**.008</td>
<td>.570</td>
</tr>
<tr>
<td>Time 2</td>
<td>24.43</td>
<td>7.34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 2</td>
<td>24.16</td>
<td>7.42</td>
<td>-1.210</td>
<td>.121</td>
<td>.278</td>
</tr>
<tr>
<td>Time 3</td>
<td>26.16</td>
<td>5.88</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>21.42</td>
<td>5.41</td>
<td>-3.098</td>
<td>**.003</td>
<td>.711</td>
</tr>
<tr>
<td>Time 3</td>
<td>26.16</td>
<td>5.88</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p ≤ .01, ***p ≤ .001

*Figure 7. Comparison Graphs (paired t-test) at Problem Type – WSI Peer-Preferred Social*

\(t(13) =, p < .05\), this represents a large effect, \(d = .605\). Externalizing students showed significant growth from pre-test \((M = 21.52, SD = 5.43)\) to post-test \((M = 24.43, SD = 7.34)\), \(t(20) = -2.611; p < .05\), this represents a moderate effect, \(d = .570\). Externalizing
students also showed significant growth from pre-test \(M = 21.42, SD = 5.41\) to four months post-test \(M = 26.16, SD = 5.88\), \(t(18) = -3.098, p < .05\); this represents a large effect size, \(d = .711\).

Table 18

\begin{tabular}{cccccc}
\hline
 & \textit{F} & \textit{p value} & Partial Eta Squared & Power & \textit{d} \\
\hline
Post-Pre & 1.553 & .221 & .042 & .228 & .209 \\
Ppost-Post & 7.436 & *.011 & .204 & .750 & .506 \\
Ppost-Pre & 5.436 & *.027 & .158 & .616 & .433 \\
\hline
\end{tabular}

\*\(p \leq .05\)

In order to determine if the two groups were different over time and determine if the differences were statistically significant, follow-up one-way ANOVAs were conducted comparing student gain scores (Table 18). Students identified as externalizers showed significant growth over students identified as internalizers from post-test to four month follow up \(F(1, 32) = 7.436, p = .011, p < .05, d = .506\), which indicates a large effect size. Externalizing students also showed significant growth from pre-test to four month follow up \(F(1,32) = 5.436, p = .027, p < .05, d = .433\), which represents a large effect size.

Paired t-tests (Figure 8) indicated that students in Strong Kids small groups earned higher WSI peer-preferred social scores from pre-test \(M=19.52, SD = 4.74\) to post-test \(M = 24.19, SD = 5.84\), \(t(20) = -4.266, p < .001\) (one-tailed). This represents a very large effect, \(d = .951\). Small group students also showed significant growth on WSI peer preferred social scores from pre-test \(M=19.71, SD =5.16\) to four month post-test \(M = 25.24, SD=5.74\), \(t(16)=-3.446, p < .001\), this represents a very large effect, \(d = .835\). Students participating in BEP/CICO showed significant growth from pre-test \(M =
22.11, \(SD = 6.00\) to post-test \((M = 25.22, SD = 6.58), t(17) = -2.861, p < .05\), this represents a large effect, \(d = .673\).

In order to determine if comparison groups were different over time and determine if the differences were statistically significant, follow-up one-way ANOVAs (Table 20) were conducted comparing student gain scores. Students in Strong Kids small group showed significant increase in WSI peer-preferred social sub-scales from post-test to four month follow-up, \(F(1,32) = 4.338, p = .046, p < .05, d = .387\). Students in small group showed significant growth over students in BEP/CICO from pre-test to four month follow up \(F(1, 32) = 7.620, p = .010, p < .05, d = .512\), which indicates a large effect size.

Table 19

<table>
<thead>
<tr>
<th>Pair</th>
<th>Time</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p-value (one-tailed)</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong Kids Small Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1</td>
<td>Time 1</td>
<td>19.52</td>
<td>4.74</td>
<td>-4.266</td>
<td>***.000</td>
<td>.951</td>
</tr>
<tr>
<td></td>
<td>Time 2</td>
<td>24.19</td>
<td>5.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time 3</td>
<td>25.24</td>
<td>5.74</td>
<td></td>
<td></td>
<td>.347</td>
</tr>
<tr>
<td>Pair 2</td>
<td>Time 1</td>
<td>22.11</td>
<td>6.00</td>
<td>-2.861</td>
<td>**.005</td>
<td>.673</td>
</tr>
<tr>
<td></td>
<td>Time 2</td>
<td>25.22</td>
<td>6.58</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time 3</td>
<td>22.06</td>
<td>7.45</td>
<td></td>
<td></td>
<td>.358</td>
</tr>
<tr>
<td>Pair 3</td>
<td>Time 1</td>
<td>22.44</td>
<td>5.49</td>
<td>.197</td>
<td>.423</td>
<td>.049</td>
</tr>
<tr>
<td></td>
<td>Time 3</td>
<td>22.06</td>
<td>7.45</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p \leq .01, ***p \leq .001**
It was hypothesized that one of the interventions would be more effective in increasing positive behaviors and decreasing negative behaviors than the other intervention. The null hypothesis is rejected; students who participated in the Strong Kids small group condition showed more gains on the WSI peer-preferred social sub-scale from post-test to follow-up, and from pre-test to four months follow-up. Students who participated in BEP/CICO and the Strong Kids small group intervention made
significant gains from pre-test to post-test and students in small group showed greater gains with a larger effect size; however, the difference between group scores was not significant. Students’ gain scores indicated that students in the Strong Kids small group condition showed significant growth on WSI peer-preferred social subscales from post-test to four month follow-up and from pre-test to follow-up than students in BEP/CICO. It was also hypothesized that there would be a significant interaction for student behavior as measured by teacher rating scales for the intervention group and student problem type. Although there was a significant interaction for time and intervention group and time and problem type, there was not a significant three-way interaction. Students identified as internalizers showed significant growth from pre-test to post test on the peer-preferred social subscale with a very large effect size; however, on average these students showed a significant decline in scores from post-test to four months follow-up. Students identified as externalizers showed significant growth from pre-test to post-test and from pre-test to four month follow up. One-way ANOVAs compared student gain stores and indicated that students identified as externalizers showed significantly higher scores on the WSI peer-preferred subscale from post-test to four months follow-up than internalizing students. Although both internalizing students and externalizing students showed significant growth from pre-test to post-test on the peer-preferred subscale, the group scores were not significantly different from each other. The intervention group a student was placed in and the identified problem type both had a significant effect on their peer-preferred social ratings over time; however, scores were not influenced by both factors.

*School adjustment sub-scale.* A three-way (2x2x3) repeated measures factorial ANOVA was conducted with between subjects factors intervention group and problem
type; and within-subjects factor student scores at three time periods on school adjustment behaviors (Table 22). It was hypothesized that one of the interventions would be more effective in increasing positive behaviors and decreasing negative behaviors for internalizing and externalizing students than the other intervention. It was also hypothesized that a significant interaction would be present for treatment groups (BEP/CICO and Strong Kids small group) and problem type (internalizing and externalizing).

Levene’s test of homogeneity of variance and Box’s M test of covariance equality were computed and found to be non-significant. Mauchly’s test was conducted to assess for the assumption of sphericity. The test indicated that the assumption of sphericity had been violated, \( x^2(2) = 14.246, p = .001 \) (\( p < .05 \)).

Table 21

*WSI School Adjustment Descriptive Statistics*

<table>
<thead>
<tr>
<th></th>
<th>Pre-WSI ( M )</th>
<th>( SD )</th>
<th>Post-WSI ( M )</th>
<th>( SD )</th>
<th>4 mo. Post WSI ( M )</th>
<th>( SD )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BEP/CICO</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalizing</td>
<td>16.50</td>
<td>5.32</td>
<td>16.33</td>
<td>4.27</td>
<td>18.00</td>
<td>6.36</td>
</tr>
<tr>
<td>Externalizing</td>
<td>14.50</td>
<td>3.34</td>
<td>15.90</td>
<td>4.46</td>
<td>17.30</td>
<td>6.75</td>
</tr>
<tr>
<td>Total</td>
<td>15.25</td>
<td>4.14</td>
<td>16.06</td>
<td>4.25</td>
<td>17.56</td>
<td>6.40</td>
</tr>
<tr>
<td><strong>Strong Kids Small</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalizing</td>
<td>17.75</td>
<td>5.65</td>
<td>20.50</td>
<td>5.35</td>
<td>21.25</td>
<td>6.32</td>
</tr>
<tr>
<td>Externalizing</td>
<td>12.78</td>
<td>3.73</td>
<td>16.67</td>
<td>3.71</td>
<td>21.22</td>
<td>7.07</td>
</tr>
<tr>
<td>Total</td>
<td>15.12</td>
<td>5.24</td>
<td>18.47</td>
<td>4.82</td>
<td>21.24</td>
<td>6.51</td>
</tr>
</tbody>
</table>

Therefore, degrees of freedom were corrected using the Greenhouse-Geisser statistic because \( \varepsilon < .750, \varepsilon = .715 \). The results show a significant time effect, \( F(1.430, 41.465) = 5.752, p = .012 \) (\( p < .05 \)). This represents a medium effect, \( d = .446 \). There was not a significant interaction between time and intervention group, \( F(1.430, 41.465) = 1.346, p \)
= .265 (p > .05) and time and problem type \( F(1.430, 41.465) = .855, p = .399 (p > .05) \).

There was also not a significant three-way interaction between time, intervention group, and problem type, \( F(1.430, 41.465) = .437, p = .583 (p > .05) \).

Table 22

*Three-way Repeated Measures ANOVA for Time and WSI School Adjustment Scale*

<table>
<thead>
<tr>
<th>Effect</th>
<th>df</th>
<th>( F )</th>
<th>( p ) value</th>
<th>Partial Eta Squared</th>
<th>Power</th>
<th>( d )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>1.430</td>
<td>5.752</td>
<td>(*, .012)</td>
<td>.166</td>
<td>.750</td>
<td>.446</td>
</tr>
<tr>
<td>Time * Problem Type</td>
<td>1.430</td>
<td>.855</td>
<td>.399</td>
<td>.029</td>
<td>.190</td>
<td>.173</td>
</tr>
<tr>
<td>Time * Group</td>
<td>1.430</td>
<td>1.346</td>
<td>.265</td>
<td>.044</td>
<td>.237</td>
<td>.215</td>
</tr>
<tr>
<td>Time * Problem Type * Group</td>
<td>1.430</td>
<td>.437</td>
<td>.583</td>
<td>.015</td>
<td>.107</td>
<td>.123</td>
</tr>
</tbody>
</table>

*\(*p \leq .05\)*

---

*Figure 9. Comparison Graphs at WSI School Adjustment at Intervention Groups*

Paired sample t-tests were conducted with the three time measurements as the only factor (Table 23). The paired tests were time 1 – time 2, time 2 – time 3, and time 1 – time 3.
Table 23

*Paired Sample t-tests on Time and School Adjustment Scale*

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>p-value (one-tailed)</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1</td>
<td>Time 1</td>
<td>15.06</td>
<td>4.52</td>
<td>-3.635 ***.000</td>
<td>.572</td>
</tr>
<tr>
<td></td>
<td>Time 2</td>
<td>17.48</td>
<td>4.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 2</td>
<td>Time 2</td>
<td>17.30</td>
<td>4.65</td>
<td>-1.664 .053</td>
<td>.326</td>
</tr>
<tr>
<td></td>
<td>Time 3</td>
<td>19.46</td>
<td>6.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 3</td>
<td>Time 1</td>
<td>15.18</td>
<td>4.67</td>
<td>-3.090 **.002</td>
<td>1.10</td>
</tr>
<tr>
<td></td>
<td>Time 3</td>
<td>19.46</td>
<td>6.62</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p≤.01, *** p ≤ .001

Figure 10. Comparison Graphs (paired t-tests) – WSI School Adjustment

Paired sample t-tests (Figure 10) were conducted to determine if students scored differently on the WSI school adjustment subscale across the three time periods. Students showed a significant increase from pre-intervention \((M = 15.06, SD = 4.52)\) to post-intervention \((M = 17.48, SD = 4.61)\), \(t(38) = -3.635, p = .000 \text{ (p < .005)}\). This represents a large effect, \(d = .572\). Also, students showed significant gains in school adjustment behaviors from pre-intervention \((M = 15.18, SD = 4.67)\) to four month post-
intervention \((M = 19.46, SD = 6.62)\). \(t(32) = -3.090, p = .002 (p < .05)\). This represents a very large effect, \(d = 1.10\).

It was hypothesized that one of the interventions would be more effective in increasing positive behaviors and decreasing negative behaviors than the other intervention. Due to the lack of interaction for time and treatment group, the null hypothesis is rejected; students in BEP/CICO and Strong Kids small group scored equivalently on the school adjustment subscale of the WSI. It was also hypothesized that there would be a significant interaction for student behavior as measured by teacher rating scales for the intervention group and student problem type. There was not a significant interaction for time and problem-type and time and intervention group. There was also not a significant three-way interaction. Overall, students showed an increase in scores from pre-test to post test and from pre-test to four month follow up on the school adjustment sub-scale; however, scores were not influenced by treatment group, identified problem type, or an interaction of both factors.

**Research Question 2: Descriptive Statistics**

**Hypothesis 3 and 4.** In order to address the second question of this research study, “What is the social validity for each intervention?” a review of the questionnaires and observations was be provided. Specifically, this question refers to whether interventionists could implement the interventions with typical resources and found the interventions to be socially valid.

**Check-in/Check-out (BEP).**

**Fidelity of BEP implementation.** In order to determine the fidelity of the BEP (check-in/check-out) intervention, the BEP Fidelity of Implementation Measure (BEP-
FIM) was utilized. The BEP-FIM was modeled after the SET (Horner et al., 2004) and determines if schools are implementing check-in/check-out with fidelity. The BEP-FIM results come from the information gathered by the interventionist on a daily basis (Crone et al., 2010). The BEP-FIM is a twelve-item evaluation, which asks counselors to indicate a score between 0-2 on items such as, “Does the school budget contain an allocated amount of money to maintain the BEP? (0=No, 2=Yes) and “Do 90% of students on the BEP receive regular feedback from teachers (0=0-50%, 1=51-89%, and 2=90-100%)?”

Overall, school counselors implemented the BEP with an 84.55% average of fidelity (Table 24). Horner et al. (2004) identified 80% as the acceptable cut-off criterion for implementing prevention and intervention in the school setting. Some barriers to fidelity were lack of funding and resources to implement the intervention. These findings were consistent with other studies evaluating BEP treatment fidelity with range of scores 79.2% - 97% (Campbell & Anderson, 2011; Mitchell, 2012).

Table 24

*BEP - Treatment Fidelity Percentages*

<table>
<thead>
<tr>
<th>Item</th>
<th>School #1</th>
<th>School #2</th>
<th>School #3</th>
<th>School #4</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEP Coordinator</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>62.5%</td>
</tr>
<tr>
<td>BEP Budget</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>75%</td>
</tr>
<tr>
<td>Timely Support</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>Administrator Support</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td>Support system taught/reviewed yearly</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>90% of students check-in daily</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>90% of students check-out daily</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>90% students receive reinforcement</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>100%</td>
</tr>
</tbody>
</table>
90% receive feedback from teachers
90% receive feedback from parents
Data entered daily
BEP data used for decision making
Mean

<table>
<thead>
<tr>
<th></th>
<th>School #1</th>
<th>School #2</th>
<th>School #3</th>
<th>School #4</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of elements</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Skills needed</td>
<td>91.6%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>97.9%</td>
</tr>
<tr>
<td>Values are consistent with elements</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Resources available</td>
<td>100%</td>
<td>83%</td>
<td>100%</td>
<td>100%</td>
<td>95.75%</td>
</tr>
<tr>
<td>Administrative Support</td>
<td>91.6%</td>
<td>83%</td>
<td>100%</td>
<td>100%</td>
<td>93.65%</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Best interest of student</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Efficiency</td>
<td>91.6%</td>
<td>83%</td>
<td>100%</td>
<td>100%</td>
<td>93.65%</td>
</tr>
<tr>
<td>Mean</td>
<td>96.85%</td>
<td>93.63%</td>
<td>100%</td>
<td>100%</td>
<td>97.62%</td>
</tr>
</tbody>
</table>

Self-assessment of contextual fit in schools. The social validity of the BEP was measured using the Self-Assessment of Contextual Fit in Schools (Horner et al., 2003). This 16-item questionnaire assessed the counselors’ views of the intervention in eight categories (element knowledge, skills needed, consistent values, available resources, support, effectiveness, student best interest, and efficiency). Counselors evaluated the intervention on a 5-point Likert scale (1=Strongly Disagree, 5=Strongly Agree).
Overall, the contextual fit of the BEP was high at the completion of the study across the four schools ($M=97.62\%$) (Table 25). Administrative support ($M = 93.65\%$) and Efficiency ($M = 93.65\%$) were listed as the lowest areas on the survey; however, they are still considered high scores overall. This is consistent with other findings that found the BEP/CICO to be a socially valid intervention (Fairbanks et al., 2007; Filter et al., 2007; Gresham et al., 2006; Lane et al., 2009; Robertson & Lane, 2007). In this sample, it can be stated that school counselors found the BEP to be a valid resource that they could implement with effectiveness across the four schools and eight components.

**Small Group Skills Training (Strong Kids).**

**Fidelity of Strong Kids Implementation.** School counselors recorded treatment fidelity for lessons 4, 8, and 11. Results of the observations indicated that Lesson 4: Dealing with anger, was conducted with treatment fidelity with the following percentages: school #1 – 96\%, school #2 – 94\%, school #3 – 98\%, and school #4 – 77\%.

Lesson 8: The power of positive thinking, was conducted with treatment fidelity at these levels: school #1 – 98\%, school #2 – 95\%, school #3 – 98\%, and school #4 – 88\%.

Lesson 11: Behavior change: Setting goals and staying active was implemented with the following fidelity of treatment: school #1 – 96\%, school #2 – 93\%, school #3 – 88\%, and school # 4 – 88\% (Table 26). Other research on Strong Kids has indicated treatment fidelity scores that are commensurate at 95\% (Caldarella et al., 2009), 92\% (Kramer et al., 2010), at least 80\% for 4 of 6 lessons (Levitt, 2009), between 79\% - 94\% (Nakayama, 2008), and 84\% (Tran, 2007).

School counselors identified the following issues that may have impacted fidelity while implementing the intervention: insufficient time; redundancy in some areas,
especially with homework assignments; and difficulty teaching some concepts, for example, “anger doesn’t have to lead to aggression or frustration”.

Table 26

**Strong Kids Social Skills Training - Treatment Fidelity Percentages**

<table>
<thead>
<tr>
<th></th>
<th>School #1</th>
<th>School #2</th>
<th>School #3</th>
<th>School #4</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson 4</td>
<td>96%</td>
<td>94%</td>
<td>98%</td>
<td>77%</td>
<td>91.25%</td>
</tr>
<tr>
<td>Lesson 8</td>
<td>98%</td>
<td>95%</td>
<td>95%</td>
<td>88%</td>
<td>94%</td>
</tr>
<tr>
<td>Lesson 11</td>
<td>95%</td>
<td>90%</td>
<td>70%</td>
<td>100%</td>
<td>88.75%</td>
</tr>
<tr>
<td>M</td>
<td>96%</td>
<td>93%</td>
<td>88%</td>
<td>88%</td>
<td>91.25%</td>
</tr>
</tbody>
</table>

**Strong Kids Survey.** Social validity was measured at the completion of the study by administering the Strong Kids Survey. All four participating school counselors completed the survey. The questionnaire consisted of 21 items over four broad goals: Alignment of goals between teachers and curriculum; acceptability of procedures; satisfaction with results; and feasibility, importance, and confidence. The questionnaire is presented on 3-point Likert scales (i.e., 3=Very important, very feasible, very acceptable to 1=Not important, not feasible, not acceptable). The social validity ratings across counselors for the four areas were alignment of goals between teachers (counselors) and curriculum (100%); acceptability of procedures (98.44%); satisfaction with results (95.75%); and feasibility, importance, and confidence of implementing the intervention (87.5%). The total satisfaction of the intervention was 95.42%, suggesting a high level of social validity for this program (Table 27). An acceptable cut-off score in behavior intervention is indicated at 80%; therefore, the scores on social validity for the Strong Kids curriculum are well above acceptable (Horner et al., 2004).

Overall, the school counselors found the lessons in the Strong Kids program to be beneficial to students, easy to implement, and feasible within their school counseling
programs. Counselors identified time as an issue for some of the lessons and indicated a belief that small components of the curriculum could be removed and still maintain

Table 27

<table>
<thead>
<tr>
<th></th>
<th>School #1</th>
<th>School #2</th>
<th>School #3</th>
<th>School #4</th>
<th>School #5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alignment of goals</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Acceptability of procedures</strong></td>
<td>93.75%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Satisfactions with results</strong></td>
<td>100%</td>
<td>83%</td>
<td>100%</td>
<td>100%</td>
<td>95.75%</td>
</tr>
<tr>
<td><strong>Feasibility, importance, and confidence</strong></td>
<td>80%</td>
<td>80%</td>
<td>100%</td>
<td>90%</td>
<td>87.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>93.44%</td>
<td>90.75%</td>
<td>100%</td>
<td>97.5%</td>
<td>95.42%</td>
</tr>
</tbody>
</table>

effectiveness. The counselors also indicated that the skills presented were both relevant and important for students in grades 3-5 for increasing positive behaviors and pro-social skills.

**Conclusion**

In summary, although 2x2x3 factorial repeated measures ANOVAs showed interaction between time and treatment group and time and problem type, there was no three-way interaction for any of the four analyses. Student scores did increase and in some cases, gains were maintained over time. Students in both BEP/CICO showed significant increase in scores from pre-test to post-test, but were not different from each other. Students in the Strong Kids small group condition also showed long term gains as opposed to students in BEP/CICO. Both internalizing and externalizing showed increase in scores from pre-test to post-test; however, students identified as externalizers showed higher significant long-term gains. School counselors were able to provide the treatments with a high level of fidelity and also determined that both interventions were socially valid.
CHAPTER 5
DISCUSSION

Students struggling with behavior concerns in school are at-risk for academic and social issues. Without intervention, these students have an increased likelihood of involvement with juvenile justice, need for mental health services, and drug and alcohol treatment (Lane et al, 2011). This study attempted to add to the existing literature on targeted group interventions by comparing the effectiveness of two behavior treatment interventions across two groups at the second tier of a RtI framework. Specifically, student scores on behavior rating scales were investigated to determine if the student’s identified problem type and treatment group influenced student growth on the measures. In addition, the social validity and fidelity of each intervention was reviewed.

Summary of the Study

A 2x2x3 repeated measures factorial design was employed in the study. The 39 students in the sample were derived from a universal screening process in four schools across one district. On the universal screening tool, students were identified as tier two behavior candidates after meeting screening criteria. Also, classroom teachers identified students as presenting with either externalizing behavior characteristics or internalizing behavior characteristics. Once parent permission and student assent were obtained, students were randomly assigned to either BEP/CICO or Strong Kids small group skills training; however, the placement of internalizing and externalizing students was evenly distributed. School counselors assigned to each building conducted all interventions. Screening data were collected after eight weeks of intervention and then again four months after intervention. Treatment fidelity information was gathered throughout the
eight-week intervention phase. The school counselors completed social validity
questionnaires at post-intervention. Multiple three-way analyses of variance were used to
analyze the data, and post-hoc comparisons were conducted when significance was found
on the ANOVA. One-way ANOVAs on student gain scores were utilized to compare
student scores between groups.

This chapter presents a review of the study results and develops conclusions from
the data analysis. Limitations of the study, implications for practice, and
recommendations for future research are discussed.

Major Findings

Research Question #1. The first research question examined two behavior
interventions at the secondary tier of a RtI framework. Interventions were evaluated in
terms of treatment group, and then treatment group and problem type.

Hypothesis 1. The first hypothesis indicated that one of the interventions would
be more effective in increasing positive behaviors and decreasing negative behaviors, as
measured by teacher rating scales than the other intervention (BEP/CICO and Strong
Kids small group) at post-test and at follow-up (four months post-intervention). Results
indicated that on the WSI total score, students in small group and students in BEP/CICO
showed significant growth from pre-test to post-test; however, the group scores were not
statistically significantly different from each other. This implies that both interventions
were effective for students on the WSI total score. This is not a surprising result for the
BEP/CICO as it has been highly researched and found effective in majority of the studies
(Bruhn, Lane, & Hirsch, 2004; Hawken et al., 2014; Mitchell et al., 2011). The results of
this study have extended the literature on small group Strong Kids social skills training.
According to Bruhn et al. (2014), there is a need to investigate interventions that address social skill deficits at the tier two level. Although there was no difference in scores from pre-test to post-test between the groups, both groups did show significant growth after intervention. This implies that student success in small group is comparable to that of student success in BEP/CICO. This adds to the literature, as there have been no studies to date comparing BEP/CICO directly with another evidence-based intervention (small group/Strong Kids curriculum; Simonsen et al., 2011). The results of this study are consistent with Simonsen et al. (2011), which evaluated BEP/CICO with standard practice (small group counseling conducted by a school counselor). The researchers concluded that on teacher rating scales, student scores did not differ between groups from pre-test to post-test. The authors indicated that more significant findings between the groups were discovered when students were directly observed versus using teacher-rating scales alone. The lack of direct observation is a limitation of the present study. Students in the current study, who participated in small group, showed slightly more statistical growth with a larger effect size from pre-test to post-test. This finding is supported by research conducted by Hawken et al. (2014), which found effect sizes on BEP/CICO literature ranging from .15 to .60. However, contrary to this study, most of those evaluations favored BEP/CICO.

Studies measuring tier two interventions typically lack information regarding long-term effects of treatment (Miller et al., 2015; Mitchell et al., 2011). This study adds to the current literature by measuring student outcomes four months after intervention. Students in the Strong Kids small group condition showed significantly more growth from post-test to four month follow-up, and overall growth from pre-test to four month-
follow up on the WSI Total score than students in BEP/CICO. This is an interesting finding of the present study, as most evaluations of tier two interventions do not include follow-up data. It appears that not only did students in Strong Kids small group increase or maintain their scores from post-test, but also under certain circumstances students in BEP/CICO decreased their scores from post-test to follow-up.

Each sub-scale was evaluated separately to tease out specific behavior patterns for both BEP/CICO and Strong Kids small group participants. The first sub-scale, WSI teacher-preferred social interactions, includes behaviors that reflects positive social interactions as observed by teachers (e.g., responding to peer conflict and compromising with peers). Groups were not different on the teacher-preferred social sub-scale as there was no interaction; however there was a time effect. This indicates that both groups significantly increased their scores from pre-test to post-test, but the students’ treatment group had no influence on their performance on the WSI teacher-preferred social sub-scale. The second sub-scale, WSI peer-preferred social interactions, includes behaviors such as interacting with different peers appropriately. Students in BEP/CICO and Strong Kids small group showed significant growth from pre-test to post-test, but were not significantly different from each other. These findings are consistent with other research on BEP/CICO effectiveness, in which students demonstrated an increase in teacher rating scales of positive social behavior and a decrease in negative behaviors (Fairbanks et al., 2007; McIntosh et al., 2009). This also supports the previous literature that concluded that small group social skills training and BEP/CICO had favorable outcomes for students regarding handling conflicts with peers and increasing social interactions on the playground (Gresham et al., 2006; Lane et al., 2003; Robertson & Lane, 2007; Simonsen
et al., 2011). However, none of the previous research compared the two interventions with an evidence-based social skills curriculum in place of standard practice or small group. The small group skills training curriculum used in this study, Strong Kids, is evidence-based and found to be successful in increasing pro-social behavior in children. The results of this study extend the literature by comparing the intervention (Strong Kids) with another established intervention (BEP/CICO) and looking at long-term effects (Caldarella et al., 2009; Gunter et al., 2012; Kramer et al., 2010; Merrell et al. 2008; Whitcomb & Merrell, 2012). Mitchell et al. (2011) also called for research to examine how students maintain behavior gains on interventions. An interesting finding in this study is that students in the Strong Kids small group condition showed significant long-term maintenance gains over time as opposed to students in BEP/CICO at post-test and at four month follow-up on the WSI peer-preferred social skills sub-scale. Students in small group may have gained skills through the Strong Kids curriculum that increased their positive interactions with peers long-term. This finding extends the literature on tier two interventions because minimal research focuses specifically on long-term gains or maintenance of tier two behavior interventions.

Finally, the third sub-scale, WSI school adjustment behaviors, includes classroom behaviors, such as completing seatwork and following classroom rules and expectations. Students in BEP and small group showed significant gains from pre-test to post-test and from pre-test to four months follow-up; however, scores were not different from each other. There was no interaction between time and treatment group. This implies that students made significant gains on school adjustment behaviors from pre-test to post and from pre-test to four month follow-up; however the intervention condition did not
influence their score. This is consistent with studies reviewing both BEP/CICO and small group intervention indicating that intervention at the tier two level, whether it be BEP/CICO or small group, increase levels academic engagement and observation of on-task behavior (Bruhn et al., 2013; Harpole, 2012; Lane et al., 2003; Simonsen et al., 2011).

Students in both Strong Kids small group and BEP/CICO showed significant growth from pre-test to post-test on WSI Total and on the WSI peer-preferred interaction sub-scale. Students in Strong Kids small group appeared to have stronger long-term gains four month after intervention.

**Hypothesis 2.** A second hypothesis indicated that there would be a significant interaction for student behavior as measured by teacher rating scales for the intervention group (BEP/CICO or Strong Kids small group) and student problem type (internalizing or externalizing) at post-test and at follow-up (four months post-intervention). The absence of a significant three-way interaction did not support the hypothesis that one of the treatment measures would be more effective for internalizing or externalizing students. However, as there was an interaction between time and group and time and problem-type, findings regarding treatment group and problem-type can be reviewed. Since review of treatment group was discussed in hypothesis one discussion, the findings for problem-type will be highlighted.

Results indicated that on the WSI Total, both students who exhibited internalizing and externalizing behavior characteristics made significant growth from pre-test to post-post-test. This implies that students showed similar growth on either intervention regardless of their identified problem type. This result supports research by Gresham et
al. (1999), which found both internalizing and externalizing students to be similar in teacher observation of social competence as compared to controls. In terms of long-term effects, the research indicates that students who exhibit externalizing behavior showed significant gains over internalizing students from post test to four month follow-up, and overall gains from pre-test to follow-up. Perhaps this discrepancy over long-term effects is due to teacher rating that will reflect changes in externalizing behavior more readily than changes in internalizing behavior. Since students identified as internalizers exhibit behaviors that are categorized as subtler than externalizers, changes in behavior over time may be less apparent (Gresham et al., 1999). This may be a confounding factor in this study; however, the same teacher did not complete teacher-rating scales from post-test to follow-up. All teachers who completed the rating scales received the same training on the instrument.

The three sub-scales of the WSI were evaluated separately to delineate specific behavior patterns for internalizing and externalizing students. In terms of teacher preferred social interactions, externalizing students showed significant growth across all three time periods. Externalizing students also had a significantly higher score on the teacher-preferred sub-scale than internalizing students from post-test to follow-up, showing long-term effects; and overall growth, from pre-test to follow-up. On the peer-preferred sub-scale, students with both externalizing and internalizing behaviors showed significant growth from pre-test to post-test; however, their scores were not significantly different from each other. This implies that regardless of problem-type, the students performed better at post-test than before intervention. This confirms studies regarding externalizing and internalizing students’ positive outcomes with BEP/CICO and small
group (*Strong Kids*) treatment (Mitchell et al., 2011; Mitchell, 2012; Tran, 2007). Again, externalizing students showed greater gains than internalizing students from post-test to four months following the completion of the intervention. They also showed greater overall gains from pre-test to follow-up. In comparison, internalizing students showed a marked decrease from post-test to four months follow-up in the peer-preferred social sub-scale. In contrast, Marchant et al. (2007) found that students identified as internalizing showed higher ratings in positive peer social interactions four months after completion of the study. There was not an interaction on the third sub-scale, school adjustment, for either treatment group or problem-type. This suggests that students with both internalizing and externalizing behaviors showed similar results across all time periods regardless of their problem type.

Internalizing and externalizing students showed significant growth from pre-test to post-test on WSI total and the WSI peer-preferred interaction sub-scale. Externalizing students appeared to have stronger long-term gains four months after intervention. Due to the lack of a three way interaction for the WSI total and all sub-scales, it does not appear that we can assign treatment groups to students based on identified problem type (internalizing or externalizing); however, due to small sample size and low observed power for the three way interaction statistic, more research should be conducted in this area.

**Research Question #2.** In the second research question, the social validity for each intervention was evaluated. Both BEP/CICO and small group skills training (*Strong Kids*) were evaluated using descriptive data. Mitchell et al. (2011) identified a lack of research data on treatment fidelity and social validity to be a consideration for research
regarding tier two interventions. It is important to determine if treatment outcomes can be reproduced in schools with available resources and personnel.

**Hypothesis 3.** The third hypothesis is that school personnel (school counselors) can implement the interventions with typical resources, as measured through fidelity checklists. Due to the number of different interventionists in this study, the treatment fidelity of each intervention was essential in examining student outcomes and comparing data with confidence. Counselors at all four schools implemented the BEP with treatment integrity with a range of scores from 67% to 91.6%. Issues with treatment fidelity seemed to be specific to administrative duties, such as inputting student data into a spreadsheet daily, and having both administrator support and allocated resources for the intervention. This finding is consistent with previous research that administrative tasks (inputting data, budget) were rated lower than actual intervention (checking-in with students, providing feedback, etc.) (Harpole, 2012). It was also interesting to note that the four school counselors in this study had very little to no difficulty documenting daily teacher feedback and obtaining daily parent signature. This is unique to previous research that cited consistent parent feedback low on the rating scale (Hawken, 2006; Mitchell et al., 2011). Fidelity of the Strong Kids curriculum in the small group counseling setting was assessed using the Strong Kids Survey. The findings suggest that overall the school counselors adhered to the curriculum with a range of 88% - 96%. The counselors indicated that time in completing the entire lesson was generally a factor and that elementary aged-students had difficulty with some of the concepts, which required re-teaching of a lesson. These findings are comparable to other studies that have reviewed treatment integrity of the Strong Kids curriculum (Gueldner, 2006; Levitt,
2009; Tran, 2007, Whitcomb, 2009). These findings are important, as the fidelity of
treatment for each student may have impacted his or her scores on the teacher rating
scales post-intervention.

**Hypothesis 4.** The fourth hypothesis is that school personnel will find the
interventions to be socially valid as measured through social validity questionnaires at the
conclusion of the study. Social validity of the BEP was measured using the Self-
Assessment of Contextual Fit in Schools (Horner et al., 2003). The counselors from all
four schools rated the BEP/CICO program very high in terms of ease of use and
feasibility. This finding was consistent with other research studies that have reviewed
social validity of the BEP/CICO program (Campbell & Anderson, 2011; Harpole, 2012;
Mong et al., 2011; Todd et al., 2008). Other researchers have found lower ratings of
social validity from classroom teachers regarding the intervention (Mitchell, 2012;
Simonsen et al., 2011). This was partially due to teachers rating as observers as opposed
to treatment interventionists. This study did not evaluate classroom teacher perceptions
of the interventions. School counselors’ perceptions were considered alone, as they
conducted all of the interventions. The social validity of the Strong Kids curriculum was
also rated by the four counselors as high in terms of overall use and perceptions of
importance and feasibility. This reflects research conducted by Tran (2007) and
Gueldner (2007), which found teacher ratings to be high in terms of alignment of goals,
acceptability of procedures, satisfaction with results, and feasibility. The school
counselors in this study indicated that some of the concepts were difficult to teach and
that some of the lessons took longer than the time allotted. This feedback reflects findings in other research (Tran, 2007).

Limitations of the Study

The current study has several limitations in the area of internal validity, external validity, measurement, and statistical analyses that impact the generalizability of the findings. Although the participants in the study were randomly assigned to one of two treatment groups, the lack of an experimental control narrows the results and expands the possibility of an alternative explanation for the findings (Heppner, Wampold, & Kivlighan, 2008). Other threats to internal validity consisted of a small sample of students. Originally, the study called for participation at five schools in the same district; however, one of the schools chose not to participate. This reduced the pool of potential participants dramatically. Also, four counselors in different school conducted the interventions. Although steps were taken to control for variability among treatment presentation and follow-through (teacher and counselor training, consistent structure in BEP/CICO reward/reinforcement), individual counselor style may influence treatment integrity and student scores.

Threats to external validity limit the generalizability of the results to the general population. The sample consisted of identified tier two candidates in grade three through five from a suburban school district in southwestern Pennsylvania. The participants in this study were students in one district who met criteria as a tier two candidate, had parental consent, and who also agreed to participate. This limits the level of generalizability due to the district’s lack of demographic diversity and lack of information from students’ whose parents refused consent to participate. Also although
each school utilizes a school-wide positive behavior support framework, no fidelity measure at tier one was collected. Only one school had the data available before the study began, therefore; the Systematic Evaluation Tool (SET) was omitted by the internal review board, as it was not part of typical practice for all of the schools. Bruhn et al. (2014) noted that a large gap in tier two intervention literature is that tier one fidelity information is not listed in many studies. This study also suffers from that limitation. This information is valuable in determining the validity of identification of tier two candidates who are not responding at the first tier of intervention.

Another limitation for this study is that due to time constraints and summer break, two different teachers completed the WSI assessments (one teacher at pre-test and post-test and another teacher at follow-up). All teachers at each time period were given the same training; however, the inter-rater reliability of the WSI is moderate (.53 -.77). This suggests that the student scores from post-test to follow-up should be interpreted with caution. Also, using behavior ratings alone without other components, including direct observation, is another limitation of the current study. Riley-Tillman, Kalberer, and Chafoules (2005) indicate that behavior-rating scales are limiting as they give a “snapshot” of student progress without taking other factors into account. Stormont, Reinke, Herman and Lembke (2012) also call for multiple measures of student success to verify if treatments for internalizing and externalizing students are appropriate and effective. The original premise of the study encompassed other factors, including ODRs and student screening data, however, due to the significant lack of normality, the data was not utilized in this analysis. All of the social validity and treatment integrity responses by the school counselors were gathered through self-report questionnaires
whose psychometric properties have not been validated. It should also be noted that all four counselors in the study are colleagues of the researcher. This is a further limitation as the results of the treatment integrity and social validity scores may be inflated due to participant bias (Heppner et al., 2008).

Another limitation was the low sample size for a two-factor analysis. The study examined student scores at three time periods according to treatment group and identified problem type. The observed low power, when looking at both factors across three time periods, may have contributed to the lack of three-way interaction. Despite the above limitations, the present study demonstrated that students in both Strong Kids small group and BEP/CICO and students identified with internalizing and externalizing behavior characteristics can improve social competency and school adjustment scores after the interventions and in some cases over time.

**Implications for Practice**

The results of this study provide implications for theory, research, and practice in the fields of education and professional school counseling. The findings in this study confirm the theoretical underpinnings of behavior intervention for students. Student scores increased from pre-test to post-test in both intervention groups. Some scores continued to increase for four months post-treatment; however, others drastically declined over this span. The reason for this discrepancy is unknown. Stormont et al. (2012) affirmed that a child's environment reinforces his or her behavior. This statement is supported by social learning theory (Bandura, 1977, 1986). Student scores in BEP/CICO increased from pre-test to post-test and then gains were not maintained at the four month follow-up measurement. Students in BEP/CICO received daily reinforcement
for eight weeks. Once interventions ended, students did not receive any structured reinforcement for at least four months. Students were not given the opportunity to self-monitor behavior; whereas, students in the Strong Kids small group were taught skills that may have supported their behavior long-term. The principles of behavior theory indicate the need for reinforcement and structured fading from intervention (Skinner, 1953). Students in both groups showed progress from pre-test to post-test; however, long term effects were not always favorable. School district teams should consider structured fading procedures and treatment boosters to reinforce skills that students learned during treatment phase. This may support positive student scores and long-term gains. The theoretical implications of social learning theory and behavior theory should be considered, especially as it relates to long-term effects of interventions.

The findings in this study support needed research in the area of tier two behavior interventions. According to Mitchell et al. (2011), there is a shortage of strong empirical evidence on this topic. This study met four out of five recommended criteria outlined by the authors. First, the current study utilized a strong research design and included a comparison of evidence-based practices for both treatment groups. Second, measures for student progress had appropriate psychometric properties. Third, the current study identified favorable statistically evident findings. Fourth, long term gains were assessed. The single criterion not met was that the study did not include a control group. Although a control group is ideal in comparing group interventions, there is an ethical challenge in identifying students in need of intervention and then withholding services so the student can act as a control. This study also expanded the literature to include rigorous evaluation of students in grades 3-5.
These results can inform practice for educators, especially professional school counselors. Due to positive outcomes of this study, educators should consider implementing a multi-tiered framework for RtI behavior. Many schools are adopting RtI for academics, especially reading; however, there is a need for schools to consider implementation of tiered interventions for behavior (Hawken et al., 2008). Stormont et al. (2012) indicated that schools looking to adopt this framework should begin with the implementation of a tier one universal level of support, including PBIS (Positive Behavior Interventions and Supports). The introduction of a behavior component in a schoolwide framework can be daunting to school personnel. Gresham (2007) suggests this is due to lack of universal expectations for acceptable behavior as opposed to academics. Acceptability measures for behaviors are often dependent upon stakeholder tolerance (observation of behavior) as opposed to established criteria (student scores on reading/math benchmark; Hawken et al., 2008). Schools looking to begin tier one intervention for behavior can begin by establishing baseline data through the Systematic Evaluation Tool (SET; Horner et al., 2004).

Once a strong tier one foundation is established, school personnel should identify a systematic universal screening tool that includes identification of internalizing behavior problems (McIntosh et al., 2007; Severson et al., 2007; Walker et al., 2005). The school will then follow with establishing data-driven decision-making criteria for movement through tiers. Also, resources and training need to focus on implementing and providing evidence-based interventions at all tiers of the framework.

Gresham (2007) suggests that interventions at the second tier should include evidence-based practices that match the needs of the student. School personnel should
provide a menu of support services to address student concerns. Stormont et al. (2012) listed the following evidence-based interventions for externalizing students: *Coping Power Program* (Lochman, Wells, & Lenhart, 2008), *First Steps to Success* (Walker, Stiller, & Golly, 1997), *Strong Kids* (Merrell et al., 2007), *Behavior Education Program* (Crone et al., 2010), and *Check and Connect School Engagement Program* (Christianson, Stout, & Pohl, 2012). The authors also listed evidence-based programs for internalizing students: *Coping Cat* (Kendall, Furr, & Podell, 2010), BEP (Crone et al., 2010) with modified daily goal to reflect internalizing symptoms, psychoeducation, self-monitoring, *Strong Kids* (Merrell et al., 2007), and *Second Step* (Committee for Children, 1988). *Skillstreaming* is another evidence-based program not previously listed that can address internalizing and externalizing behaviors, both individually and in small group (McGinnis, 2011). There are versions of this program at all grade levels (PreK-12). Research has suggested that when behavior issues are addressed, students show an increase in school performance (Muscott, Mann, & LeBrun, 2008). School districts should include budget and allocated resources for behavior intervention on a multi-tiered system of support.

School counselors can use the research from this study to inform their comprehensive school counseling program. For many years, school counselors have struggled with role identity and confusion (Hatch, 2014). In these times of increased budget cuts, it is imperative for the school counselor to solidify their role as a valuable educator and leader in the school environment (Hatch, 2014). School counselors can align their counseling program with a multi-tiered support framework (Ockerman, Mason, & Hollenbeck, 2012). Ryan, Kaffenberger, and Carroll (2011) suggest that
school counselors are poised to be educational leaders in a response to intervention model as the principles of RtI directly align with that of a comprehensive school counseling program. A comprehensive school counseling program utilizes preventative efforts for all students (tier one), data-driven decision making for students who require intervention (tier two), evidence-based interventions that match student need (tier two/three), and collaboration with stakeholders to determine alternate strategies for students in need of further support (tier three). The counselors in this study are team leaders for schoolwide positive behavior supports in their respective buildings. The counselors also conducted the two evidence-based interventions to identified students as an extension of their comprehensive school counseling programs.

Small group skills training, specifically Strong Kids and BEP/CICO have been identified as possible tier two evidence-based programs for both internalizing and externalizing students (Stormont et al., 2012). Based on the findings of this study (students in both BEP/CICO and Strong Kids small group made significant gains at post-test and students in small group maintained those gains at follow-up), school counselors may consider the use of small group skills training over BEP/CICO.

According to Crone et al. (2010), the BEP/CICO program requires a BEP coordinator to fulfill several duties, which include: lead both check-in/check-out with students daily, enter data into spreadsheets to track progress at least weekly, maintain records, share student progress with team, organize and create agenda for monthly team meetings, lead team meetings, and share data and decision-making with other teachers and parents. The suggested time allotment for this role is 9-13 hours per week. The BEP/CICO program can accommodate around 20-25 students at a time. In contrast, the
*Strong Kids* program is a twelve-week curriculum with each lesson lasting approximately 45-50 minutes (Merrell et al., 2007). The Strong Kids program can be used in regular education whole classroom lessons, special education classrooms, and small group counseling sessions. The school counselor may be the only interventionist in a building for tier two and tier three behavior interventions. Small group skills training, specifically the *Strong Kids* curriculum may be a preferable intervention that is more time efficient and provides for more students.

**Recommendations for Future Research**

Although the current research study contributed to the literature base on tier two interventions, there are several considerations for future research. This study evaluated two evidence-based interventions at the secondary tier; however, future studies should include a measurement of the school’s adherence to a tier one positive behavior support system. If schools do not have an established foundation at tier one, then identifying children “at risk” due to non-responsiveness is questionable (Mitchell et al., 2011).

Another consideration for future research is to include multiple methods and multiple informants to identify students in need of intervention, and to provide progress monitoring on the student’s response (Bruhn et al., 2014; Riley-Tillman et al., 2005; Stormont et al., 2012). Bruhn et al. (2014) suggested that the risk of over-identifying students in need of service outweighs the risk of under-identifying students. The authors also indicate that multiple data sources should be utilized to identify students and monitor student progress before, during, and after intervention. Stormont et al. (2012) also proposed that a comprehensive method of gathering data (rating scales, ODRs, direct observation), including collaboration with teachers, is best practice. Riley-Tillman et al.
(2005) cautions the use of behavior rating scales independently of other observations. Although they are more feasible than direct observation, they are more subjective and open to bias.

The current study examined students in grades 3-5 in a suburban school district in Pennsylvania. Future research should expand the sample to include more culturally and ethnically diverse participants. According to Harris-Murri et al. (2006), minority students are overrepresented in special education classrooms, especially in emotional support programs. This study also measures student scores over time (four month follow-up); however, there was a change in classroom due to summer break at the end of the intervention phase. This change in raters and classroom settings may have affected results. Future studies should utilize a calendar year with interventions beginning in the fall and lasting for the prescribed amount of time. Follow-up data can be gathered with the same teacher at pre-test, post-test, and at the end of the school year to determine long term gains. Yong and Cheney (2013) identified twelve studies that evaluated tier two interventions within a multi-tiered system of support. The authors list five essential components of sustainable tier two intervention programs (RE-AIM): reach, effectiveness, adoption, implementation, and maintenance. Only two of the studies outlined maintenance procedures to ensure treatment gain sustainability (Cheney et al., 2009; Nelson, Hurley, Synhorst, Epstein, Stage, & Buckley, 2009). More research regarding measurement and exploration of long term effects and specific strategies (e.g., treatment boosters post-intervention, fading procedures, self-management of behavior, practicing social skills in classroom) is needed. In this study, there was no documented information regarding self-management and fading components of the BEP/CICO
program (Crone et al. 2010) and the Strong Kids program (Merrell et al., 2007). This lack of information or delivery may have produced variable results at follow-up.

In the current study, the student’s identified problem type was considered before randomly assigning groups to treatment. Another consideration for future research is to identify the function of behavior when determining an appropriate intervention for a student. According to Reinke, Stormont, Clare, Latimore, and Herman (2013) student behavior typically falls into two behavior functions: attention-maintained or escape-maintained. There is a need for future research to consider the function of the student’s behavior (Campbell & Anderson, 2008; Hawken et al., 2011; McIntosh et al., 2009; Reinke et al., 2013).

A final consideration would be for future research to include information on academic progress as it relates to student success on behavioral interventions. This study utilized a pre-test, post-test, follow-up quasi-experimental research design with randomization on stratified samples (internalizers and externalizers were evenly distributed across treatment groups). Future research should also include rigorous experimental designs to determine treatment effectiveness for students identified as non-responders at the first tier of behavior intervention.

**Conclusion**

This chapter presented the major findings of the study. The results of the first hypothesis indicated that students in both treatment groups showed significant gains directly after intervention. Students in Strong Kids small group showed greater long-term effects than students in BEP/CICO. The second hypothesis was evaluated, and although there was not a three-way interaction for time, treatment group, and problem-type on any
of the measurements; there was a significant finding between time and problem-type (internalizing and externalizing students). Both internalizing and externalizing students showed gains immediately after intervention; yet, externalizing students showed long-term gains at follow-up. Study limitations including issues with internal validity, external validity, measurement and statistical analysis were reviewed. Implications of the study in relation to theory, research, and practice were also highlighted. Finally, considerations for future research were presented.
References


Caldarella, P., Young, E. L., Richardson, M. J., Young, B. J., & Young, K. R. (2008). Validation of the systematic screening for behavior disorders in middle and junior
high school. *Journal of Emotional and Behavior Disorders, 16*, 105-117.

Retrieved from [http://ebx.sagepub.com/](http://ebx.sagepub.com/)


Informing universal interventions. Preventing School Failure, 53, 131-143.

Retrieved from http://www.tandfonline.com/toc/vpsf20/current - .VQopmWR4ris


youth, and young adults: Research advances and promising interventions.


Sprague, J. (2010, May 9). We are working on "all" but still worry about the "few":

Enhancing school wide prevention programs with supports for at risk students


Publishers.


Appendix A

IRB Approval Letter

DUQUESNE UNIVERSITY
Office of Research
301 ADMINISTRATION BUILDING ▶ PITTSBURGH, PA 15282-0202

Dr. Joseph C. Kush
Chair, IRB-Human Subjects
Office of Research
Phone (412) 396-6328 Fax (412) 396-5176
E-mail: kushj@dug.edu

March 18, 2013

Re: A comparison of two educational practices in three intervention groups in a response to intervention (RTI) framework across student problem type – (PROTOCOL # 13-26)

Dr. Jered Kolbert
School of Education
Duquesne University
Pittsburgh PA 15282

Dear Dr. Kolbert,

Thank you for submitting the research proposal of you and your student Ms. Lisa Maloney to the Institutional Review Board at Duquesne University.

Based on the review of IRB representative Dr. Ara J. Schmitt and my own review, your study is approved as Exempt based on 45-CFR-46.101.b.1 regarding research conducted in established or commonly accepted educational settings, involving normal educational practices.

The consent form is attached, stamped with IRB approval and expiration date. You should use the stamped form as the original for copies you display or distribute.

The approval pertains to the submitted protocol. If you wish to make changes to the research, you must first submit an amendment and receive approval from this office. In addition, if any unanticipated problems arise in reference to human subjects, you should notify the IRB chair before proceeding. In all correspondence, please refer to the protocol number shown after the title above.

Once the study is complete, please provide our office with a short summary (one page) of your results for our records.

Thank you for contributing to Duquesne’s research endeavors.

Sincerely yours,

Joseph C. Kush, Ph.D.

C: Dr. Ara J. Schmitt
IRB Records
Appendix B

District Approval Letter

DUQUESNE UNIVERSITY
600 FORBES AVENUE • PITTSBURGH, PA 15282

DISTRICT CONSENT TO CONDUCT A RESEARCH STUDY

TITLE:
A comparison of two educational practices in three intervention groups in a Response to Intervention (RtI) framework across student problem type

INVESTIGATOR:
Lisa Maloney, M.Ed.
Professional School Counselor
Doctoral Candidate, Counselor Education and Supervision

Telephone: (724) 493-0329
Email: maloney1@duq.edu

SOURCE OF SUPPORT:
This study is being conducted as partial fulfillment of the requirements for the doctoral degree in Counselor Education and Supervision (ExCES) at Duquesne University.

PURPOSE:
The purpose of the study is to compare two standard interventions regularly conducted by elementary school counselors with students in grades 3-5.

Students are being asked to participate in a research project that seeks to investigate common school-based interventions for students in school with minor behavior concerns. Parents will give permission for their child’s data to be used in the research study. The primary interventionist will be the Elementary School Counselor at five of the six elementary schools (Maxwell is excluded due to dual relationships). Student data will be coded into an excel spreadsheet and screening data will be collected pre-intervention, post-intervention, and after the first nine weeks of the next school year. Students will be randomly assigned to one of three groups (small group intervention, daily behavior report card, or both interventions).
RISKS AND BENEFITS: There are no risks greater than those encountered in everyday life.

COMPENSATION: There is no compensation for participating in this group. Likewise, participation in the project will require no monetary cost to you.

CONFIDENTIALITY: All student and school information will never be revealed to anyone who evaluates or reads this research. No identifying information will be used in the data analysis. All written materials and consent forms will be stored in a locked file in the researcher's office. Data will only appear in statistical data summaries. All materials will be destroyed within 5 years which is standard for educational evaluations.

RIGHT TO WITHDRAW: Parents and students have a right to withdraw at any time.

SUMMARY OF RESULTS: A summary of the results of this research will be supplied to the district, at no cost, upon request.

PERMISSION: Mrs. Maloney has permission to conduct this study in the Hempfield Area School District elementary schools.

[Signatures and dates]
Appendix I

DUQUESNE UNIVERSITY
600 FORBES AVENUE  •  PITTSBURGH, PA 15282

PARENT PERMISSION TO PARTICIPATE IN A RESEARCH STUDY

TITLE: A comparison of two educational practices in three intervention groups in a Response to Intervention (RtI) framework across student problem type

INVESTIGATOR: Jered Kolbert, Ph.D., LPC, NCC
Program Director, Counselor Education
Associate Professor
Department of Counseling, Psychology, and Special Education (DCPSE)
Duquesne University
600 Forbes Avenue
110D Caneyin Hall
Pittsburgh, PA 15282

Telephone: (412) 396-4471
Email: jeredkolbert@gmail.com

STUDENT INVESTIGATOR: Lisa Maloney, M.Ed.
Professional School Counselor
Doctoral Candidate, Counselor Education and Supervision

Telephone: (724) 493-0329
Email: maloneyl@duq.edu

SOURCE OF SUPPORT: This study is being conducted as partial fulfillment of the requirements for the doctoral degree in Counselor Education and Supervision (ExCES) at Duquesne University.

PURPOSE: The purpose of the study is to compare two standard interventions regularly conducted by elementary school counselors with students in grades 3-5.
Your child is being asked to participate in a research project that seeks to investigate common school-based interventions for students receiving two services with the elementary school counselor over an eight-week period. Once parent permission is given your child’s data to be used in the study, screening data will be obtained from the school counselor (teacher nomination procedure, absences, number of visits to nurse, report card information, grade point average, and office disciplinary referrals). School counselors will meet with students, review the voluntary assent form, and obtain student signatures. Students will then be randomly assigned to one of the three intervention groups: (BEP only, small group only, or BEP/small group combined). Your child will receive the intervention over an eight-week period with his or her elementary school counselor. Students randomly assigned to the BEP only group will be given a standardized daily behavior report card. The student will check in each morning with the school counselor in the school counselor office to obtain their card. They will carry the card with them throughout the day and receive teacher feedback on the card of up to two points earned per class for positive behavior. The students will check out with the school counselor at the end of the day and take their daily report card home to their parent for signature. This intervention will last eight weeks and take approximately 7.10 minutes each day for feedback and check-in/check-out procedures. Students assigned to the small group only intervention will participate in small group skills training once a week for 30-minute sessions over an eight-week period. The school counselors will utilize the *Strong Kids* curriculum to administer the intervention. The topics covered in the *Strong Kids* curriculum are understanding feelings, dealing with anger, understanding other people’s feelings, clear and positive thinking, solving problems, and letting go of stress. The small group sessions will include reviewing previous skills, introducing new skills, modeling and role-playing new skills, and closing the session. Students who are placed in the combined group will receive both interventions with the school counselor over the eight-week period. Students will
receive services from the elementary school counselor during a mutually agreed upon time with the classroom teacher. Your consent will allow student data to be obtained at four points: after parental consent is given, after eight weeks of intervention, approximately four weeks post-intervention, and approximately four months post-intervention. The researcher will not have direct contact with your child. Your child’s identity will be coded by the school counselor in their school before data is entered into the Excel spreadsheet. Access to the coded data is the only request being asked of you and your child for this study.

RISKS AND BENEFITS: There are no risks greater than those encountered in everyday life. Upon completion of the study, if an intervention is found to be more effective, your child will have the option of receiving the more effective intervention.

COMPENSATION: There is no compensation for participating in this group. Likewise, participation in the project will require no monetary cost to you or your child.

CONFIDENTIALITY: Your child’s personal identity, screening data, and post-intervention data will never be revealed to anyone who evaluates or reads this research. Their school counselor will give your child a unique code for input into the research database. No identifying information will be included in the data analysis. All written materials and consent forms will be stored in a locked file in the researcher’s office. Your child’s data will only appear in statistical data summaries. All materials will be destroyed within 5 years, which is standard for educational evaluation.

RIGHT TO WITHDRAW: Your child is under no obligation to participate in this study. You are free to withdraw your permission and your child is free to withdraw consent to participate at any time without receiving any negative consequences to you or your child, and your child’s data will not be used.

SUMMARY OF RESULTS: A summary of the results of this research will be supplied to you, at no cost, upon request.

VOLUNTARY CONSENT: I have read the above statements and understand what is being requested of me. I also understand that my child’s participation is voluntary and that I may withdraw consent.
at any time, for any reason. On these terms, I certify that I am willing to allow my child to participate in this research project.

I understand that should I have any further questions about my participation in this study, I may call any of the following:

- Mrs. Lisa Maloney, M. Ed., West Hempfield Elementary School Counselor, Doctoral Candidate at (724) 493-0329
- Dr. Jered Kolbert, Doctoral Committee Chair/Advisor at (412) 396-4471.
- Dr. Joseph Kush, Chair of the Duquesne University Institutional Review Board, 412-396-1151.

Please print and sign your name below if you choose to allow your child to participate in the study.

Parent Signature ___________________________ Date

Researcher’s Signature ______________________ Date

Revised: October, 2009
Appendix D

School Counselor Assent

SCHOOL COUNSELOR CONSENT TO PARTICIPATE IN A RESEARCH STUDY

TITLE: A comparison of two educational practices in three intervention groups in a Response to Intervention (RtI) framework across student problem type

INVESTIGATOR: Jered Kolbert, Ph.D., LPC, NCC
Program Director, Counselor Education
Associate Professor
Department of Counseling, Psychology, and Special Education (DCPSE)
Duquesne University
600 Forbes Avenue
110D Canevin Hall
Pittsburgh, PA 15282

Telephone: (412) 396-4471
Email: kolberti@duq.edu

STUDENT INVESTIGATOR: Lisa Maloney, M.Ed.
Professional School Counselor
Doctoral Candidate, Counselor Education and Supervision

Telephone: (724) 493-0129
Email: maloney1@duq.edu

SOURCE OF SUPPORT: This study is being conducted as partial fulfillment of the requirements for the doctoral degree in Counselor Education and Supervision (ExCES) at Duquesne University.

PURPOSE: The purpose of the study is to compare two standard interventions regularly conducted by elementary school counselors with students in grades 3-5.

You are being asked to participate in a research project that seeks to investigate common school-based interventions for

Revised: October, 2009
students in your school with minor behavior concerns. If you agree to participate in the study you will be responsible for obtaining parental consents and coding children into a research database. You will be asked to report screening data to the researcher for students whose parents have agreed to participate in the study, and school based tier one fidelity data. As is your standard practice, you will be asked to conduct two interventions with three groups over an eight-week period. Once the interventions are completed, you will be asked to again collect screening data and then a collection of screening data will be obtained approximately eight weeks and then four months post-intervention. Before the interventions are conducted, you will receive lesson plans, and consistent protocols for each intervention. In addition, the researcher will observe the interventions on three occasions to determine treatment fidelity across schools. Finally, at the end of the intervention intervals, you will be asked to complete a social validity survey to assess the intervention and its ease in use and perceived effectiveness. This is the only request that will be asked of you.

RISKS AND BENEFITS: There are no risks greater than those encountered in everyday life.

COMPENSATION: There is no compensation for participating in this group. Likewise, participation in the project will require no monetary cost to you.

CONFIDENTIALITY: Your personal identity, thoughts, and opinions will never be revealed to anyone who evaluates or reads this research. No identifying information will be used in the data analysis. All written materials and consent forms will be stored in a locked file in the researcher's office. Your data will only appear in statistical data summaries. All materials will be destroyed within 5 years which is standard for educational evaluations.

RIGHT TO WITHDRAW: You are under no obligation to participate in this study. You can withdraw consent to participate at any time without receiving any negative consequences and your data will not be used. In addition, your participation in the study may be terminated without his or her consent if the
investigators determine it is unsafe for him or her to continue.

SUMMARY OF RESULTS: A summary of the results of this research will be supplied to you, at no cost, upon request.

VOLUNTARY CONSENT: I have read the above statements and understand what is being requested of me. I also understand that my participation is voluntary and that I am free to withdraw his or her consent at any time, for any reason. On these terms, I certify that I am willing to participate in this research project.

I understand that should I have any further questions about my participation in this study, I may call any of the following:

- Mrs. Lisa Malone, M. Ed., West Hempfield Elementary School Counselor, Doctoral Candidate at (724) 493-0329.
- Dr. Jared Kolbert, Doctoral Committee Chair/Advisor at (412) 396-4471.
- Dr. Joseph Kush, Chair of the Duquesne University Institutional Review Board, 412-396-1151.

Please print and sign your name below if you choose to participate in the study.

Participant's Signature ___________________________ Date __________

____________________________ __________________________
Researcher's Signature Date __________

Revised: October, 2009
Appendix E

Student Assent

STUDENT ASSENT TO PARTICIPATE IN RESEARCH

TITLE: A comparison of two educational practices in three intervention groups in a Response to Intervention (RtI) framework across student problem type

INVESTIGATOR: Jered Kolbert, Ph.D., LPC, NCC
Program Director, Counselor Education
Associate Professor
Department of Counseling, Psychology, and Special Education (DCPSE)
Duquesne University
600 Forbes Avenue
110D Caneven Hall
Pittsburgh, PA 15282

Telephone: (412) 396-4471
Email: jeredkolbert@gmail.com

STUDENT INVESTIGATOR: Lisa Maloney, M.Ed.
Professional School Counselor
Doctoral Candidate
Counselor Education and Supervision
Telephone: (724) 493-0329
Email: maloney1@duq.edu

SOURCE OF SUPPORT: This study is being conducted as partial fulfillment of the requirements for the doctoral degree in Counselor Education and Supervision (ExCES) at Duquesne University.

WHY ARE YOU DOING THIS RESEARCH? This research is trying to learn the best way to help children with problems in school. Some children have trouble following rules, making friends, or staying on
WHAT AM I BEING ASKED TO DO?

You are being asked to participate in a research project that will help adults in the school, including your school counselor, understand which is the best way to help kids who are having some minor trouble in the classroom. Your parents have already agreed that you can work with the school counselor to get this extra help. If you and your parent agree to let us see your information, you will be placed into one of three groups:

1. You might be a part of your school’s check-in/check-out program. You would meet every morning with your school counselor in her office for about five minutes and get a daily behavior report card. You would then take the card to each class and your teacher will tell you how you did in that class with your behavior. At the end of the day you will check out with your school counselor for about five minutes. Then you will take your card home for your parents to see. This would happen for eight weeks.

2. You also might be part of a group that sees the school counselor once a week for thirty minutes to learn some new skills that will help you in school. Your school counselor will work with you on knowing your feelings, handling anger, dealing with problems, and understanding other people’s feelings. You would be in the group for eight weeks.
3. You also might be in a group where you go to both check-in/check-out and small group. You would be getting check-in/check-out and be a part of the small group for eight weeks. This study only wants to look at your school information. If you agree to participate in the study, you will only need to allow Mrs. Maloney to look at your information four different times. The first will be right after you and your parent give consent. The second time will be in about eight weeks, after you are done working with your school counselor. The third time will be about four weeks once you are finished with your program. The last time will be about four months from when you are done to see if what learned has helped you.

**HOW DOES THIS HELP AND IS THERE ANY WAY I CAN GET HURT?**

The chances of you getting hurt by participating in this study would be no different than your chances of getting hurt in school or in your school counselor's office. While you might not benefit directly, your participation in this research may help teachers, principals, parents, school counselors, and other school helpers make the best choice when deciding how to help students.

**WILL I GET PAID?**

You will not receive any money for participating, and participating in the study will not cost you any money.

**WILL PEOPLE KNOW WHAT I DID OR SEE MY INFORMATION?**

Your personal identity, records, and information will never be revealed to anyone who evaluates or reads this research. Your school counselor will give you code and put all of the information into the computer under that code. All of the signed forms (parent and student) will be stored in a locked file in the researcher's office. All of the information will only be revealed in future research through math formulas and graphs, which

*Revised: October, 2009*
group together everyone's responses. All materials will be destroyed at the completion of the research.

CAN I STOP IF I WANT TO?

You do not need to participate in this study. You are free to stop at any time without being punished by anyone. Your parent is also free to take away their consent for you to participate.

CAN I KNOW WHAT YOU FOUND OUT?

A summary of the results of this research will be supplied to you, at no cost, if you ask your school counselor.

VOLUNTARY CONSENT:

I have read the above statements, and listened when my counselor reviewed them and understand what is being asked of me. I also understand that my participation is voluntary and that I am free to change my mind at any time, for any reason. On these terms, I certify that I am willing to participate in this research project.

I understand that should I have any further questions about my participation in this study, I may call any of the following:

- Mrs. Lisa Maloney, M. Ed., West Hempfield Elementary School Counselor, Doctoral Candidate at (724) 493-0329.
- Dr. Jered Kolbert, Doctoral Committee Chair/Advisor at (412) 396-4471.
- Dr. Joseph Kush, Chair of the Duguesne University Institutional Review Board, 412-396-1151.

Please print and sign your name below if you choose to participate in the study.

Participant’s Signature ___________________________ Date ________________

Researcher’s Signature ___________________________ Date ________________

Revised: October, 2009
March 18, 2013

Dear Parent/Guardian:

Please consider allowing your child to participate in this important study. Mrs. Lisa Maloney, School Counselor at West Hempfield Elementary is conducting a study to see what school counselor interventions increase positive prosocial behaviors and academic performance with elementary students in grade 3-5.

Your child was selected through the district’s winter universal screening for Response to Intervention and Instruction (RTII). The criteria for selection includes a teacher nomination procedure and for a student to meet at least ONE of the following conditions:

- Six or more absences or tardies (excluding doctor excuses and educational field trips)
- Four or more visits to the nurse (excluding chronic illness or emergency)
- Four or more “needs improvement” scores on the last report card in the personal and/or academic growth section
- Two or more office disciplinary referrals (including bus referrals)

Please note that a student’s participation in the study does not indicate a significant behavior issue at school. In fact, students selected for the study have only minor presenting behavior issues. Please review the attached parent permission for the child to participate in the study. Once we receive your permission, your child will take part in a daily check-in/check-out intervention, weekly small group intervention, or both interventions. If your child is already receiving an intervention, the intervention may change but all children identified will be given intervention. We will let you know which intervention your child will receive once we receive all parent permissions.

Your child’s interventions will be conducted with their school counselor, Mrs. Ryan and/or Ms. Aleandri, intern. By giving permission for the study, Mrs. Maloney will only have access to your child’s data. The data will be coded and no identifying information on your child will be given.

If you are in agreement for Mrs. Maloney to use your child’s data, please sign on the last page of the parent permission. Please return signed permissions by Friday, March 22. Please do not hesitate to contact either your child’s school counselor or Mrs. Maloney with questions. The numbers are listed below.

Thank you for your consideration,

(Counselor Name)
School Counselor
(Counselor Phone)

Lisa A. Maloney, M.Ed.
Researcher and Doctoral Candidate
724-493-0329
Appendix G

Correspondence with Duerr Resources (Agent for H. Walker)

From: Christine <christine@duerrevaluation.com>
Date: Monday, February 4, 2013 5:24 PM
To: Lisa Maloney <maloney98@comcast.net>
Subject: Re: Walker-McConnell Scale Inquiry

Hi Lisa,
The websites to download the WMS Elementary USER'S and TECH manual are as follows:

http://www.duerrevaluation.com/wmssdata/WMS_TECH_ELEM_MANUAL.PDF

http://www.duerrevaluation.com/wmssdata/WMS_USER_ELEM_MANUAL.PDF

If you have any questions about accessing the information, please contact me. Any questions about the form development should be directed to Dr. Walker.

Hope this helps with your dissertation!
Christine

Good Morning!

Thank you so much for your quick response and help.

Here is my purpose statement:

The purpose of this study is to compare effectiveness of two treatment interventions across three groups at the second tier.

Specifically, student problem type (internalizing or externalizing) will be evaluated with treatment outcomes to determine which intervention is more successful. In addition, the interventions will be evaluated in terms of treatment integrity with typical school personnel (school counselors) and perception of social validity.

My procedures include universal screening of students to determine need for intervention at the second tier level. Response to Intervention (RTI). I would like to use the WAS/WSI at the second gate of screening— with the first gate using teacher nomination and ranking system from Dr. Walker’s Systematic Screening for Behavior Disorders. I have purchased the SSBD and could use the instruments at Gate 2, but I like the WAS better and it is shorter (which is teacher friendly)! Some of principals/counselors I am working with were uncomfortable with some of the questions in the Critical Events Index (used in the SSBD).

I hope this helps!

Lisa

From: Christine <christine@duerrevaluation.com>
Date: Monday, February 4, 2013 11:19 AM
To: Lisa Maloney <maloney98@comcast.net>
Subject: Re: Walker-McConnell Scale inquiry

Good morning Lisa,

Yes, we do know the WSI and WAS are the same. The Walker Assessment Scale (WAS) came to be just as a name change because the WSI at the time was attached to the California Department of Mental Health’s EMH program. When it became clear other people (other than the State of California) were interested in purchasing the form as a measurement tool for their early intervention programs, the WSI was cloned and the WAS was available as an assessment instrument (with Bill Walker’s blessing) if the form was being used by a program that was not EMH. With the elimination of EMH funded programs last year any of the forms can be used. Typically the WSI is used as a screener to select children to receive services. Due to the shortened version, teachers are more receptive to completing the form. The reliability of the form is 96% accurate when compared to the longer WMS.

How to your intend to incorporate the WAS in to your dissertation? If you can provide me with a brief synopsis, I’ll respond to your question.

Just received your check for the forms and manual, so I’ll be back in touch with you about that later today!

Good luck...

Christine

Hello again!
Sorry for so many questions :)  

Do you know if the Walker Survey Instrument (WSI) and the Walker Assessment Scale (WAS) are the same instrument? They are both shortened versions of the Walker-McConnell Scale of Social Acceptance and School Adjustment? They are both 19 items. I hope to use the WAS for my dissertation and wondered if you had ever heard of the WSI, if they were the same, and what is Dr. Walker’s preference when citing them? I can contact him directly, but I am having trouble finding contact info. 

Thanks so much Christine!

Lisa

---

From: Christine <christine@duerrevaluation.com>  
Date: Thursday, January 31, 2013 1:24 PM  
To: Lisa Maloney <maloney86@comcast.net>  
Subject: Re: Walker-McConnell Scale Inquiry

No other research has been done about the WMS/WSA that I know of. The California Department of Mental Health (which was disbanded last year and reorganized into another State Department) had used the WMS for one of their statewide programs for 15 years. Program was called Early Mental Health Initiative (EMHI) and we acted as the statewide evaluator for the program. Hope that helps...

Christine

Research about the instrument and/or studies conducted using the instrument.

Thanks Christine!

Lisa Maloney, M.Ed.  
Professional School Counselor  
469 Wendel Road  
Erie, PA 16502  
724-850-2749  
maloney86@msdpa.net

On Jan 31, 2013, at 12:58 PM, Christine <christine@duerrevaluation.com> wrote:

Hi Lisa, 
Do you know programs that successfully used the WMS/WSA or research about the WMS/WSA instrument? 

Christine

Hi Christine,

Are you aware of any current or recent studies using the WMS and/or WAS? I am having trouble locating anything after 2005. 

Thanks!

Lisa

---

From: Christine <christine@duerrevaluation.com>  
Date: Tuesday, January 29, 2013 2:16 PM  
To: Lisa Maloney <maloney86@comcast.net>  
Subject: Re: Walker-McConnell Scale Inquiry

Lisa, 
The second page of the brochure reflects information on the manuals. Each of them may be downloaded from a website for $25 each. See below:

**OPTION 5**

**Manuals:**

All manuals, $25.00 each

Manuals available for download in PDF form include:

- The Elementary Version of the Walker-McConnell Scale of Social Competence and School Adjustment. Technical Manual. This manual covers procedures and results in establishing the technical adequacy and psychometric properties of the Elementary version of the Walker-McConnell Scale. Topics addressed include the selection of the survey scale, scale validation procedures, reliability and development of the normative sample for the scale.

**OR**

provides information and guidelines on effective use of the Walker-McConnell Scale of Social Competence and School Adjustment. 
Elementary version. Included are instructions for administering, scoring and interpreting student profiles produced through the use of the 
WMS.

OR

same as the Elementary Technical Manual noted above except the focus is the Adolescent version.

OR

the Elementary User's Manual noted above except the focus is the Adolescent version.

Hope that helps…
Christine

Thanks Christine for all of your help! How do I get the manuals – which of the options is it? The 300.00 one?
Lisa

From: Christine <christine@dueerevaluation.com>
Date: Tuesday, January 29, 2013 10:36 AM
To: Lisa Maloney <maloney99@comcast.net>
Subject: Re: Walker-McConnell Scale Inquiry

Good morning Lisa,
You can purchase the WAS or WMS from us as we act as the agent for Hill Walker. Cost is 75 cents per form. I have attached 
an order form if you are interested.
Christine

Thanks Christine - any idea on where I could purchase the WAS?
Thanks for your help!
Sent from my iPad

On Jan 17, 2013, at 10:03 AM, Christine <christine@dueerevaluation.com> wrote:

Good morning Lisa,
The 19-item Walker Assessment Scale (WAS) is a subset of the 43-item Walker McConnell Scale (WMS). I have attached a document that reflects the reliability surrounding the use of the WAS compared to the WMS. I am not sure if this is what you are looking for… but it is a place to start.

Let me know if this is what you needed.
Christine Fetherstonhaugh
Evaluation Manager
Dueer Evaluation Resources
55 Hanover Lane
Chico, CA 95923
530-893-3734

Hi Christine,

I am very interested in the Walker-McConnell Scale and even more so the 19 item shortened version. Can you share information with me regarding psychometric properties and/or let me know how I can get them. I am able to find the properties of the long version, but I am having trouble finding information on the shortened version. Any information is greatly appreciated.

Thanks,
Lisa Maloney
724-493-0329
<WMS vs WAS.doc>
# Appendix H

Sample Daily Behavior Report Card

## Be an Excellent Student Today (B*E*S*T)

**Date:** _______  **Student Name:** ___________________________  **Rm.:** _______

**Check-in Initial:** _______  **Daily Goal:** _______%  **Earned:** _______ out of _______

**Check-out Initial:** _______

2 = yes; 1 = so-so; 0 = no

<table>
<thead>
<tr>
<th>Goals</th>
<th>Workshop</th>
<th>Reading</th>
<th>Specials</th>
<th>Lunch</th>
<th>Math</th>
<th>SS/Sci/Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care for Self</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✰ Complete homework assignments</td>
<td>2 1 0</td>
<td>2 1 0</td>
<td>2 1 0</td>
<td>2 1 0</td>
<td>2 1 0</td>
<td>2 1 0</td>
</tr>
<tr>
<td>✰ Stay on task</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care for Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✰ Be nice to other students</td>
<td>2 1 0</td>
<td>2 1 0</td>
<td>2 1 0</td>
<td>2 1 0</td>
<td>2 1 0</td>
<td>2 1 0</td>
</tr>
<tr>
<td>✰ Be nice to adults</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care for Property</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✰ Bring all materials to class</td>
<td>2 1 0</td>
<td>2 1 0</td>
<td>2 1 0</td>
<td>2 1 0</td>
<td>2 1 0</td>
<td>2 1 0</td>
</tr>
<tr>
<td>✰ Keep desk neat and clean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Comments:** _______________________________________________________

____________________________________________________________________

**Teacher Signature:** ___________________________  **Date:** _______  **Parent Signature:** ___________________________  **Date:** _______

Grades 3-4/2011