



2023

Measuring the Effect of an Intervention on Student Engagement and Reading Comprehension

Kaitlin Reichart

Follow this and additional works at: https://ecommons.luc.edu/luc_diss



Part of the [Psychiatric and Mental Health Commons](#)

Recommended Citation

Reichart, Kaitlin, "Measuring the Effect of an Intervention on Student Engagement and Reading Comprehension" (2023). *Dissertations*. 4002.

https://ecommons.luc.edu/luc_diss/4002

This Dissertation is brought to you for free and open access by the Theses and Dissertations at Loyola eCommons. It has been accepted for inclusion in Dissertations by an authorized administrator of Loyola eCommons. For more information, please contact ecommons@luc.edu.



This work is licensed under a [Creative Commons Attribution-Noncommercial-No Derivative Works 3.0 License](#).
Copyright © 2022 Kaitlin Reichart

LOYOLA UNIVERSITY CHICAGO

MEASURING THE EFFECT OF AN INTERVENTION ON
STUDENT ENGAGEMENT AND READING COMPREHENSION

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE GRADUATE SCHOOL OF EDUCATION
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF EDUCATION

PROGRAM IN CURRICULUM AND INSTRUCTION

BY

KAITLIN REICHART

CHICAGO, ILLINOIS

MAY 2023

Copyright by Kaitlin Reichart, 2023

All rights reserved.

ACKNOWLEDGEMENTS

I am extremely grateful for the opportunity to continue my professional studies at Loyola University Chicago. There are a few individuals whose support throughout the program allowed this dissertation to be possible.

Loyola Faculty: During these four years of doctoral studies, I was able to continue working full-time and experience the pregnancy and birth of two children. This was due to the enormous amount of support that I received from my advisors, professors, and dissertation committee. They maintained high expectations, while also allowing flexibility, such as my newborn daughter attending online classes.

Dissertation Committee Members: Dr. Lia and Dr. Phillippo provided amazing support as committee members, including reviewing my drafts and meeting with me to discuss my ideas. I am grateful for their feedback which led me to think deeper about my research. I would also like to thank my dissertation chair, Dr. Bohanon, who taught me so much about the process of research, methods, and analysis. During the dissertation process, he was able to provide critical feedback while also being my biggest cheerleader. I left every meeting with Dr. Bohanon feeling supported and ready to continue the dissertation process.

My husband and children: Thank you to my husband, Derek, who provided me with support and encouragement every step of the way in earning this doctorate. He took extra care of me, and our children so that I could focus my studies. This all would have

never been possible without Derek as my partner, and I am forever grateful. Thank you to my children, Annie, Ben, and Cookie, who gave me all the extra snuggles, kicks (in the belly) and giggles to help me feel encouraged!

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iii
LIST OF TABLES	ix
LIST OF FIGURES	x
ABSTRACT	xi
CHAPTER	
I. INTRODUCTION	1
Background to the Study.....	1
Conceptual Underpinnings of Study.....	5
The Role of Emotions in Learning and Schools	5
Adverse Childhood Experiences (ACE) and Trauma-Informed CARE (TIC) in Schools	6
MTSS to Support School-Based Mental Health	7
Cognitive Behavioral Interventions in Schools	8
Statement of the Problem.....	9
Purpose of the Study	10
Research Questions	11
Research Hypotheses	11
Independent Variable	12
Dependent Variables	12
Theoretical Framework.....	13
Limitations and Design Controls	14
History.....	15
Maturation.....	15
Testing.....	16
Diffusion of Treatment	16
Instrumentation	16
Definition of Key Terms.....	17
Summary	18
II. REVIEW OF LITERATURE	20
Introduction.....	20
History of School’s Role in Emotionally Supporting Students	22
History of Emotional Support Programs in Schools.....	22
The Development of Social and Emotional Learning (SEL).....	25
History of Social Work and Psychology in Schools.....	26
Purpose of Schools Investing in the Emotional Development of Students	29
Neuroscience Related to the Impact of Emotions on Engagement and Learning	29

Impact of Emotions on Academic, Social, and Emotional Outcomes	31
Impact of Emotions on Reading Comprehension	33
Systems within Schools to Effectively Support Student Emotions	35
Explanation of Multi-Tiered Systems of Support (MTSS).....	35
The Inclusion of Cognitive-Behavioral Therapy (CBT) and Trauma-Informed Care (TIC) within MTSS.....	39
Social and Emotional Learning (SEL) within MTSS	42
School Psychologists and Social Workers within MTSS	43
Research Study Intervention.....	44
Origins of Intervention X.....	44
Foundation of Intervention X.....	45
Research Related to Deep Breathing	46
Research Related to Meditative Listening	47
Research Related to Labeling Emotions	48
Research Related to Self-Affirmation.....	49
Use of the Taxonomy of Intervention Intensity to Adapt the Intervention for this Study.....	50
Strength.....	51
Dosage.....	51
Alignment	52
Attention to Transfer.....	52
Comprehensiveness.....	52
Behavioral Support	53
Individualism	53
Teacher Training for Intervention.....	54
Social and Judgmental Validity for Intervention	55
Social Validity of Intervention X.....	55
Judgmental Validity of Intervention X	56
Fidelity for Intervention Research	57
Fidelity of Intervention X	58
Theoretical Framework.....	58
Behavior Theory	59
Cognitive Theory	60
Integration of Cognitive and Behavioral Theory	61
Cognitive Behavioral Theories Connection to this Study.....	62
Summary	62
 III. METHOD	 63
Introduction.....	63
Research Questions.....	64
Research Hypotheses	65
Independent Variable.....	65
Dependent Variables.....	66
Participants and Setting.....	67
Participant Selection Criteria	67

Description of the Participants.....	67
Setting.....	68
Institutional Review Board (IRB) and Parent Consent.....	68
Materials.....	69
Intervention X Materials.....	69
Reading Lesson Materials.....	69
Data Collection Instrumentation.....	70
The Student Risk Screening Scale – Internalizing and Externalizing (SRSS-IE).....	70
Direction Behavior Rating (DBR) Form.....	70
Teacher Anecdotal Notes.....	71
Curriculum-Based Measurement (CBM) Maze Assessment.....	72
Teacher Intervention Implementation Checklist.....	72
Social Validity: Intervention Rating Profile (IRP-15).....	73
Study Design.....	74
Procedure.....	75
Intervention Fidelity.....	77
Intervention Implementation Checklist.....	78
Interobserver Agreement.....	78
DBR Inter-Rater Reliability.....	79
Data Analysis.....	79
Direct Behavior Rating (DBR) Form.....	80
Curriculum-Based Measurement (CBM) Maze Assessment.....	81
Teacher Anecdotal Notes.....	81
Intervention Rating Profile (IRP-15).....	82
Summary.....	82
 IV. ANALYSIS OF DATA.....	 84
Introduction.....	84
Independent Variable.....	85
Dependent Variables.....	85
Research Questions 1.....	86
Academic Engagement Scores.....	86
Respectful Behavior Scores.....	88
Disruptive Behavior Scores.....	90
Overall DBR Scores.....	92
Teacher Anecdotal Notes.....	93
Interobserver Agreement: DBR Inter-Rater Reliability.....	93
Research Question 2.....	95
SRSS-IE Scores.....	96
Reading Comprehension Results for At-Risk Participants.....	96
Reading Comprehension Results for All Student Participants.....	98
Research Question 3.....	99
Research Questions 4.....	101
Summary.....	104

V. DISCUSSION	105
Introduction.....	105
Summary of the Study	105
Discussion.....	108
Results of the Study Related to Cognitive Behavioral Theory	108
Results of the Study Related to Student Engagement.....	109
Results of the Study Related to Student Reading Comprehension	109
Results of the Study Related to Students Identified as At-Risk.....	111
Results of the Study Related to Teachers	112
Results of the Study Related to Schools	113
Results of the Study Related to School Specialists.....	114
Interobserver Agreement Results.....	115
Social Validity Results.....	115
Fidelity Results	116
Implications.....	116
Limitations	118
Future Research	119
Conclusion	121
APPENDIX	
A. DIRECT BEHAVIOR RATING FORM.....	122
B. CURRICULUM-BASED MEASUREMENT (CBM) MAZE ASSESSMENT.....	124
C. INTERVENTION RATING PROFILE (IRP-15) PRE- AND POST- INTERVENTION SURVEY	126
D. STUDENT RISK SCREENING SCALE – INTERNALIZING AND EXTERNALIZING (SRSS-IE)	129
E. PARENT/GUARDIAN CONSENT LETTER	131
F. TEACHER WEEKLY IMPLEMENTATION CHECKLIST	134
G. INTERVENTION X IMPLEMENTATION GUIDE.....	137
H. READING LESSON SAMPLE.....	140
REFERENCE LIST	143
VITA.....	159

LIST OF TABLES

Table	Page
1. Methods Used to Check Fidelity of the Study	58
2. Procedures for Each Day of the Study	76
3. Student Averages for Academic Engagement	88
4. Student Averages for Respectful Behavior	90
5. Student Averages for Disruptive Behavior	92
6. DBR Average Scores	93
7. Inter-Observer Agreement Scores.....	95
8. SRSS-IE Scores	96
9. Reading Score Averages for At-Risk Participants.....	98
10. Reading Score Averages for All Participants	99
11. Fidelity Scores for Implementation of the Intervention.....	101
12. IRP-15 Scores	103
13. Student 207's Scores.....	110

LIST OF FIGURES

Figure	Page
1. Is there a shift in engagement because of the intervention?	80
2. Is there a shift in reading comprehension because of the intervention?	81
3. Academic Engagement Scores.....	87
4. Respectful Behavior Scores	89
5. Disruptive Behavior Scores	91
6. Reading Comprehension Results for At-Risk Participants.....	97
7. Reading Comprehension Results for All Student Participants	99

ABSTRACT

Students arrive at school each day with a great disparity in emotional and learning readiness. This is caused by a multitude of factors such as chronic stress, family separation, poverty, the COVID-19 pandemic, sexism, trauma, ACEs, racism, and lack of access to resources. Students need daily assistance in understanding and regulating their emotions. Schools have become the central place for supporting students' mental health, yet teachers are generally overworked and underprepared in the area of supporting mental health. The purpose of this dissertation was to determine the impact of a universal tier one self-regulation intervention on student engagement and reading comprehension. The intervention was rooted in cognitive behavioral therapy and included techniques related to breathing, self-affirmation, meditative listening, and emotion labeling. The intervention was meant to be simple, so that it could be applied to a variety of grades, content areas, student readiness, and staff experience. The results of this study indicate that the intervention positively impacted student engagement and reading comprehension scores.

CHAPTER I

INTRODUCTION

Background to the Study

The need for schools to support students' emotional development continues to grow. Students are faced with societal challenges of chronic stress, family separation, poverty, the COVID-19 pandemic, sexism, racism, and lack of access to resources. A national survey from 2019 shows that one in three high school students, and half of female students report mental health challenges such as emotions of hopelessness and sadness. This is an increase of 40% since 2009 (Office of the Surgeon General, 2022). Estimates indicate that 20% of teenagers have a mental health concern, as do 20% of disadvantaged children (World Health Organization [WHO], 2004; WHO, 2014). Emotions can impact a student's academic engagement, readiness to learn, work ethic, commitment, and overall school success (Elias et al., 1997; Taylor et al., 2017). Knowing that emotions affect how and what we learn, schools must address these critical pieces of education to support all students.

The emotional development and achievement of a student can be affected if that student has experienced a traumatic event. The American Psychological Association (APA) describes trauma as, "an emotional response to a terrible event." Research indicates that as many as 68% of children experience at least some form of a traumatic event (Cavanaugh, 2016). Examples may include neglect, physical or sexual abuse,

experiencing or witnessing domestic or community violence, natural or man-made disasters, terrorism, or death. The results of trauma can take many forms and can result in challenges such as relationship building, regulating emotions, understanding perspectives, and physical symptoms from anxiety. It impacts the physical, social, emotional, and academic development of students (Cavanaugh, 2016; Terrasi & De Galarce, 2017). Since trauma impacts students' emotions, and emotions can impact learning, it is likely that a traumatic event will impact a student's ability to learn.

The emotional development of students is being impacted by today's societal challenges, and many students have experienced a traumatic event, but students within historically underserved communities are particularly vulnerable to the effects of trauma because they disproportionately experience violence and have insufficient access to resources. The intersectionality of a student's socio-economic status, family structure, minority status, child and parent health, and parental involvement impacts the chances of a student having experienced trauma (Janus & Duku, 2007). Low-income and ethnic minority communities are most commonly vulnerable to the effects of trauma (Ko et al., 2008). Due to the level of challenges that under-resourced communities experience, it is critical that all schools are prepared to support the emotional development of students.

The COVID-19 pandemic is a societal factor that has impacted student's emotional development and readiness to learn. The pandemic began in the United States in early 2020, and the entire world was impacted within months (WHO, 2020). The COVID-19 global pandemic has dramatically impacted the emotions of students throughout the nation. In March of 2020, many students and staff were required to remain

home and isolate in order to avoid obtaining and/or spreading the COVID-19 virus.

Students and staff were required to immediately build an online learning environment through virtual classes so that instruction could continue while at home. Students' home experiences were quickly changing and included traumatic events such as death, ongoing sense of fear, forced distancing from loved ones, economic instability, sickness, and high levels of stress (Office of the Surgeon General, 2022). Groups at higher risk of mental health challenges during the pandemic include racial and ethnic minority and low-income students (Office of the Surgeon General, 2022).

Reading comprehension is a critical component of learning that is impacted by the emotional state of students. Research suggests that a student's ability to engage in reading is based on the combination of emotion, cognition, and behavior (Fredricks et al., 2004). Comprehension requires readers to decode words, understand vocabulary, access prior knowledge, connect with background knowledge, and construct meaning (Hamedi et al., 2019). These are complex learning skills that students develop over time through engagement in academic instruction. In order for students to successfully engage in the complexities of reading comprehension, they must be emotionally ready (Wigfield & Guthrie, 1997). Knowing that engagement is a major predictor in learner academic performance and emotions (Scott & Walczak, 2009), schools need to have systems to support student emotions.

Teachers are needed to build the emotional development of students to support the previously mentioned concerns, but they are not receiving adequate preparation and support to make this possible. Many teachers feel unequipped to help students in areas of

mental health (Schonert-Reichl, 2017). Studies examining preservice teacher preparation have found little evidence of coursework related to knowledge and skills necessary to support students' emotional development (Schonert-Reichl, 2017). Teachers, school psychologists, counselors and social workers typically receive minimal formal training or professional development about the impact of trauma on students, and ways to help students (Ko et al., 2008). However, it is not realistic to add more responsibility to the teaching profession. Research shows that teaching is one the most stressful professions due to a combination of job requirements, teacher capabilities, and available resources (Kyriacou, 2001). School personnel and teachers are trying to navigate the balance of teaching academics while supporting the growing emotional needs of students to engage in learning (Ko et al., 2008).

A universal tier one self-regulation intervention can be a helpful solution to considering the high percentage of students with mental health concerns, variety of learner readiness, and minimal teacher training in emotional support paired with the ongoing stress of the teaching profession. Universal interventions are supports that are provided to all students within a classroom. Education and mental health professions have found that all students benefit from learning social and emotional skills throughout the school day and in the curriculum (Bohanon et al., 2022). There are ways to implement a universal intervention that is less overwhelming for teachers, and all students can benefit from, regardless of where they are at in their emotional readiness. A classroom-wide emotion-based intervention can build consistency, student safety, positive

interactions, culturally responsive practices, peer supports, targeted supports, and strategies that support the individualized needs of students (Cavanaugh, 2016).

Universal interventions can be supported through a framework such as multi-tiered systems of support (MTSS) which provide intervention resources to support the academic, behavioral, and social and emotional needs of students (Bohanon et al., 2022). MTSS uses evidence-based interventions to systematize and streamline support systems of all students (Bohanon et al., 2022). These supports are meant to be preventions, rather than a reactive response, as prevention efforts can make meaningful and sustainable changes (Bohanon et al., 2022). MTSS looks different in every school, district, and classroom depending on the needs and staffing of the students and the school (Goodman & Bohanon, 2018). The adaptability of MTSS allows schools to develop unique interventions that work for the particular teacher, classrooms, and students. This framework provides helpful guidance for teachers and schools to create a universal intervention that supports the emotional development of students.

Conceptual Underpinnings of Study

The Role of Emotions in Learning and Schools

Schools have an important role in fostering the emotional development of students to prepare them for their future. The academic, behavioral, social, emotional and mental health of students are connected (Bohanon & Wu, 2011). Emotions can positively or negatively impact a student's academic engagement, motivation, and overall success within school (Elias et al., 1997). Many schools have acknowledged this importance and developed social and emotional learning (SEL) programs to support students. The

Collaborative for Academic, Social, and Emotional Learning (CASEL) defines SEL as, “a process for helping children and even adults develop the fundamental skills for life effectiveness. SEL teaches the skills we all need to handle ourselves, our relationships, and our work, effectively and ethically” (CASEL, 2007). Research indicates that effective mastery of social and emotional skills is associated with greater well-being and better school performance, whereas the failure to achieve SEL skills can lead to a variety of personal, social, and academic difficulties (Elias et al., 1997; Durlak et al., 2011).

Additional research shows that improved social and emotional skills have been associated with improved standardized test scores (Fleming et al., 2005). Also, schools that have preventative behavioral support programs in place, such as MTSS, have decreased the number of office discipline referrals and improved academic test scores (Durlak, 2015). If a student is able to regulate and modify his or her emotions, then he or she can have positive outcomes such as strong friendships, academic success and discipline improvement (Bohanon & Wu, 2011). Knowing the goal of school is to facilitate student learning and prepare students for their futures, then the emotions of students must also be considered and supported.

Adverse Childhood Experiences (ACE) and Trauma-Informed Care (TIC) in Schools

Adverse childhood experiences (ACE) impact a student’s ability to engage in learning, but schools can support students’ emotions through trauma-informed care (TIC). The ACE study conducted between 1995-1997 by the Center for Disease Control, measured the impact of traumatic events (examples: neglect, violence, substance abuse)

on mental and physical health (Leitch, 2017). This study found that roughly 64% of people have experienced an ACE, and ACEs are associated with social, emotional, and cognitive impairments (Center for Disease Control and Prevention, 2014). More specific long-term impacts of ACEs can include alcoholism, depression, drug use, and liver disease (Center for Disease Control and Prevention, 2014). TIC offers a solution for organizations, such as schools, to support those who have or are currently experiencing trauma. Inclusion of TIC can help schools and students better understand the impact of traumatic events, reduce symptomatic behavior, strengthen relationships and build an environment of respect and safety (Leitch, 2017). However, critics argue that school's implementation of TIC may reduce the complexities of trauma exposure, and schools may not have the proper resources for implementation, which would lead to additional problems (Chafouleas et al., 2021). There is a need for systems to be built within schools to include emotional support of students, while being aware of the challenges and complexities that TIC implementation can bring. The next section outlines how schools can create a framework to support mental health of all students.

MTSS to Support School-Based Mental Health

A framework that includes TIC and emotional support to build school-based mental health into schools, is multi-tiered systems of support (MTSS). This framework provides intervention resources to support the academic, behavioral, and social and emotional needs of students (Horner et al., 2017). Below are the tiers of MTSS:

- Tier One: The primary (universal) support that all students receive.

- Tier Two: Strategic support for students who are not adequately responding to universal support. This support is usually provided to students in small groups.
- Tier Three: Intensive support that provides individualized interventions designed to address distinct student needs. (Goodman & Bohanon, 2018; August et al., 2018)

The tiers of MTSS are meant to be fluid. For example, a student may need a tier two emotional support at lunch and recess but receive tier one emotional support at all other times of the day. By being proactive with universal interventions, schools have the potential to create lasting positive changes with academic, social, emotional, and behavioral goals (Bohanon et al., 2022; Greenberg & Abenavoli, 2017). The intended outcome of a tier one intervention is that 80% of the students will respond effectively. The other 20% can benefit from the tier one intervention, but they may need additional tier two or three interventions. These tier one interventions align with standards, maintain effective instructional strategies, and use data to determine what is effectively working in the school-based mental health supports (Bohanon et al., 2022; Durlak, 2015). Some tier one interventions are rooted in cognitive behavioral therapy (CBT). The following section explains CBT, and how these therapeutic strategies can provide universal mental health supports to students.

Cognitive Behavioral Interventions in Schools

Cognitive behavioral interventions can be used within tier one of MTSS to support all students. Cognitive-behavioral therapy (CBT) is based on the idea that our

cognitive process and behavior impact one another, along with our emotions. CBT is a model used by therapists to create behavioral change based on cognition (Kalodner, 2011). Some techniques from CBT can be utilized within school settings by school personnel. The reason for using CBT in schools is to help students understand how they can influence their own cognitive events, and in turn, change their own behavior to improve their academic, social, and emotional state, which can result in overall school functioning (Daunic et al., 2006). Research has shown that teaching students cognitive strategies has been found to decrease anxiety, fears, phobias, conduct disorders, and aggression, and increase peer relations and social cognition (Daunic et al., 2006; Barnes et al., 2014). Universal cognitive behavioral interventions (CBI) benefit all students, but they are especially effective for students who are at risk due to lack of emotional development or trauma (Forman & Barakat, 2011). CBIs incorporate research-based techniques such as modeling, feedback, reinforcement, and cognitive meditation (Daunic et al., 2006). By using CBT strategies within tier one, the variety of emotional readiness within students can be supported. More research is needed to examine how universal tier one CBT strategies can be used within a MTSS framework to support the emotional development of all students.

Statement of the Problem

Students arrive at school each day with a great disparity in emotional and learning readiness. This is caused by a multitude of factors such as chronic stress, family separation, poverty, the COVID-19 pandemic, sexism, trauma, ACEs, racism, and lack of access to resources. Students need daily assistance in understanding and regulating their

emotions. Schools have become the central place for supporting students' mental health, yet teachers are generally overworked and underprepared in the area of supporting mental health. Educators are faced with competing demands and are now under pressure to also support student's emotional development (Ko et al., 2008). Students need the help, but daily demands on teachers make this very challenging. Further studies are needed to identify a simple, universal intervention that can improve student emotional readiness and lesson engagement with minimal teacher responsibility.

Purpose of the Study

The purpose of this research was to determine the impact of a universal tier one self-regulation intervention on student engagement and reading comprehension. The intervention was rooted in cognitive behavioral therapy and included techniques related to breathing, self-affirmation, meditative listening, and emotion labeling. The study sought to find a simple and effective intervention that is beneficial to students and school staff. The study explored how students are impacted by a daily intervention through monitoring their engagement in learning and reading comprehension scores. The intervention was a tool for students to use outside of school and to apply to a variety of situations. The study explored how teachers responded to the intervention through a satisfaction survey including ease in training and implementation. The intervention was meant to be simple, so that it could be applied to a variety of grades, content areas, student readiness, and staff experience.

Research Questions

1. How did an intervention effect a student's ability to engage in reading lessons?
2. What was the impact of an intervention on the reading comprehension of students who were identified as at-risk of emotional regulation as measured by a systematic screening?
 - a. What was the impact of a researcher-adapted and teacher-implemented 5-minute whole group intervention on students reading comprehension as measured by Maze probes?
3. After receiving training in the intervention, to what extent did teachers implement the intervention with fidelity?
4. After teachers receive training in the intervention, what was the perceived social validity of the intervention?

Research Hypotheses

1. It was hypothesized that researcher-adapted and teacher-implemented intervention in the school environment would improve student engagement in a reading lesson.
2. It was hypothesized that the researcher-adapted and teacher-implemented intervention would improve the reading comprehension of students who are identified as at-risk of emotional regulation.

- a. It was hypothesized that student engagement and reading comprehension would improve at a higher rate after the intervention was implemented for multiple weeks.
3. It was hypothesized that after receiving training on how to implement the intervention in the school environment, that teachers would be able to implement the intervention with a 90% fidelity rate.
4. It was hypothesized that the social validity of the intervention would be higher than the acceptability rate of 52.5%.

Independent Variable

“Intervention X”: A modified universal tier one self-regulation intervention rooted in cognitive behavioral therapy. This researcher-adapted intervention was based on breathing techniques, self-affirmation, meditative listening, and emotion labeling. The teacher received training on how to implement the intervention. Weekly validity checks were completed by the research to ensure the intervention was completed correctly. Students participated in this intervention on a bi-weekly basis.

Dependent Variables

Direct Behavior Rating (DBR) Form: Teacher completed a direct behavior rating form every day for each student in the study. The DBR form measured student engagement in the reading lesson after Intervention X. The DBR form is found in Appendix A (Chafouleas et al., 2010).

Teacher Anecdotal Notes: The teacher had the option to informally write notes about observations of student engagement and reading comprehension. These notes were taken on the DBR form shown in Appendix A (Chafouleas et al., 2010).

Curriculum-Based Measurement (CBM) Maze Assessment: Maze assessments were timed measures of reading comprehension. Students completed a reading comprehension assessment each week to measure the effect of the intervention. An example of a Maze assessment is in Appendix B (Intervention Central).

Intervention Survey: Social validity was measured by teachers completing the Intervention Rating Profile-15. This survey was collected at the beginning and at completion of the study to determine the overall acceptability of the intervention. The intervention survey can be found in Appendix C (Carter & Wheeler, 2019).

Theoretical Framework

Cognitive behavioral theory is based on two pre-existing theories, behaviorism, and cognitive theory. Behaviorism became a popular study in the early Twentieth Century with the leading psychologists being Watson, Pavlov, and Skinner. Behaviorism supported the idea that learning can be used to predict and control behavior. Also, learning and behavior can be controlled by environmental factors (not the mind). Watson introduced the idea of conditioning behavior, particularly with fears. His research showed that fears are developed through associations, and he found additional ways to support or control behavior through associations. Skinner took this idea further by including the impact of positive and negative consequences. He argues that behavior followed by positive consequences is likely to repeat, and we learn best when actions are positively

reinforced (Hupp et al., 2008). Cognitive theory was developed by Beck. The central model of cognitive theory is that thinking influences our emotional and behavioral experiences, and vice-versa. Beck, who is most well-known for his research on depression, believes that depressive behavior is a result of thinking and cognitive distortions related to negative views of self, world, and future. This theory is now applied to additional mental health concerns such as anxiety and eating disorders. The idea being, if one can change one's thoughts, then one can change one's feelings and behavior (Brown & Prinstein, 2011).

These two theories evolved into cognitive behavioral theory. Behavioral therapists started including cognitive methods and cognitive therapists started including behavior. D'Zurilla and Goldfried introduced ways for individuals to use cognitive behavioral methods in daily life. One of these is emotion-focused coping responses: a person's attempt to change his or her own emotional response (such as meditation). Meichenbaum also introduced a model for adjusting inner speech to form behavior: modeling and practicing positive self-talk and praise (Hupp et al., 2008). Cognitive behavioral theory aligns with this study because the focus is on how student behavior and thoughts can be positively impacted with an intervention. Specifically, how a positive impact on emotions and thoughts will allow students to better engage with the reading lesson.

Limitations and Design Controls

The following section outlines the potential threats to internal validity in this study and the procedures that were used to limit their effects.

History

The threat of history refers to any events besides the specified intervention that occurs during the time of the experiment that can influence the results of the study (Kazdin, 2011). One source of historical threat was the unknown of how the COVID-19 pandemic could impact the study. Exposure to COVID-19, COVID-19 symptoms, quarantines, and positive COVID-19 cases within the classroom where the study takes place impacted the study due to student attendance. To control this threat, the school maintained its existing COVID-19 protocols. Another historical threat was attendance of students during a summer school program. Since attendance is not required in the summer school program, students' attendance was not consistent. To control this threat, students and teachers were encouraged to attend summer school every day. A final potential historical threat was the typical interruptions that take place during a school day such as a fire drill or a student getting sick, a student arriving late. To control for this, the intervention and reading lesson took place at least 15 minutes into daily camp so students had more time to arrive.

Maturation

Maturation was considered as this study includes human beings. Maturation is the changes over time that may impact the results of the study, such as a child's reading comprehension improving as he or she grows older (Kazdin, 2011). To control for this a withdraw of treatment design was used so that data was collected within a six-week period.

Testing

The threat of testing is the change that may happen because of the effects of a repeated assessment (Kazdin, 2011). Since this study included a daily reading lesson and a weekly reading assessment, the reading lesson and assessment was different each time. For example, if the student had the same reading lesson every day, it would be difficult to determine if the student's engagement was due to the lesson being familiar or the impact of the intervention. To control this threat, teachers were provided with enough reading lessons and Maze assessments to account for every day/week of the study.

Diffusion of Treatment

Diffusion of treatment takes place when participants receive the intervention at a time when it is not supposed to be implemented (Kazdin, 2011). For example, if a student was to receive additional reading support from a tutor after school hours, it would be challenging to determine if changes in reading comprehension was a result of the intervention at summer camp or tutoring support. Withdraw treatment design was used to ensure that participants received the intervention after collecting baseline data.

Instrumentation

Instrumentation can become a threat if the measurement procedures change over the course of the research (Kazdin, 2011). In order to control this, the teachers were trained in the use of the systematic screening tool and direct behavior rating scale. The researcher monitored these items to ensure the tools were used as trained. The teachers also completed a satisfaction survey at the end of the study about the intervention and research process.

Definition of Key Terms

In order to create a common vocabulary for this study, the following definitions outline how these terms will be used.

Adverse Childhood Experiences (ACE): Potentially traumatic events that can have negative lasting effects on health and well-being. This includes maltreatment and abuse as well as living in an environment that is harmful to their development (Boullier & Blair, 2018).

Cognitive Behavioral Therapy (CBT): A form of psychological treatment that has been used to support problems such as depression, anxiety, and substance abuse. Treatment usually involves efforts to change thinking patterns through recognizing distorted thinking, gaining an understanding of behavior, using problem-solving to cope with challenging situations, and developing a sense of confidence (APA Div. 12 Society of Clinical Psychology).

Cognitive Behavioral Theory: The concept that cognitive process and behavior impact one another, along with emotions (Kalodner, 2011).

Multi-Tiered Systems and Support (MTSS): A framework to support all students that provides intervention resources to support the academic, behavioral, and social and emotional needs of students (Bohanon et al., 2022).

Social and Emotional Learning (SEL): A process for helping children and even adults develop the fundamental skills for life effectiveness. SEL teaches the skills we all need to handle ourselves, our relationships, and our work, effectively and ethically. Categories of SEL include self-awareness, self-management, relationship skills, social

awareness, and responsible decision making [Collaborative for Academic, Social, and Emotional Learning (CASEL), 2007].

Trauma: An emotional response to a terrible event. Examples of experiences that lead to trauma include neglect, physical or sexual abuse, experiencing or witnessing domestic or community violence, natural or man-made disasters, terrorism, and death (American Psychiatric Association, 2015).

Trauma-Informed Care: The Substance Abuse and Mental Health Services Administration (SAMHSA, 2015) defines trauma-informed care in four parts: (1) Realizing that trauma has a widespread impact on individuals, families, groups, organization, and communities and has an understanding of paths to recovery. (2) Ability to recognize the signs and symptoms of trauma in clients, staff, and others in the system. (3) Integration of trauma knowledge into policies, programs, and practices. (4) Seeks to avoid re-traumatization (Leitch, 2017).

Universal Prevention: The application of interventions to a broadly defined group (e.g., classroom) to reduce risk and maintain student health and safety (Cullinan, 2002).

Summary

Chapter I introduced the reader to the many factors that impact a student's readiness to learn. These factors include emotional development, traumatic experiences, teacher preparation, teacher stress, and systems of support within schools. Universal interventions have been identified as an effective method to meet the needs of all students, regardless of where students are at in the emotional readiness. The chapter discussed how trauma-informed care and cognitive behavioral therapy strategies can be

used within MTSS. This chapter identified the need for a simple, effective intervention that can be utilized by school staff and students to improve emotional readiness in order to engage with learning. Finally, the chapter concluded by identifying the research questions, hypothesis, variables, potential threats and controls for internal validity.

The next chapter will include a discussion of the history of the school's role in supporting students' emotions that have been investigated in the literature. Chapter II will include a discussion of resources that have been used, systems that schools have created, how teachers are prepared in this topic, and how reading comprehension can be impacted on readiness to learn. Since Cognitive Behavioral Theory is being used to inform this study, a review of this theory will also be included. Finally, this chapter will explain the research behind Intervention X that has been adapted for this study based on previously developed CBT strategies.

Chapter III will present the research design and methodology in this study. Chapter IV will explain the results of the study and how the results correlate with each research question and hypothesis. Chapter V will be a discussion of the study's results including potential implications of the research and ideas for future research.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Students arrive at school each day with a great disparity in emotional and learning readiness. This is caused by a multitude of factors such as chronic stress, family separation, poverty, the COVID-19 pandemic, sexism, trauma, ACEs, racism, and lack of access to resources. Students need daily assistance in understanding and regulating their emotions. Schools have become the central place for supporting students' mental health, yet teachers are generally overworked and underprepared in the area of supporting mental health (Schonert-Reichl, 2017). Educators are faced with competing demands and are now under pressure to also support students' emotional development (Ko et al., 2008). Students need the help, but daily demands on teachers make providing this help very challenging.

The purpose of this research was to determine the impact of a universal tier one self-regulation intervention on student engagement and reading comprehension. The intervention was rooted in cognitive behavioral therapy and included techniques related to breathing, self-affirmation, meditative listening, and emotion labeling. The study sought to find a simple and effective intervention that was beneficial to students and school staff. The study explored how students were impacted by a daily intervention through monitoring their engagement in learning and reading comprehension scores. This

intervention was developed to be a tool students may use outside of school in variety of situations. In addition, the study explored how teachers responded to the intervention through a satisfaction survey including ease in training and implementation. This intervention was meant to be simple so that it could be applied to a variety of grades, content areas, student readiness, and staff experience.

The forthcoming literature review will begin with a brief history of the school's role in supporting the emotions of students including an examination of programs and resources that have been utilized, along with the development of school social work and counseling. Since this study took place at a Catholic school, the literature review will also discuss how Catholic schools have supported the emotions of students. Next, the purpose of schools investing in emotional development will be examined, including the neuroscience related to emotions and the impact of emotions on academic, social, and emotional outcomes, specifically reading comprehension. This chapter will also discuss the current state of programs and systems within schools to support student emotions such as counseling, SEL programming, and cognitive behavioral therapy within the MTSS framework. Intervention X will be examined in great detail, including the purpose and research behind each component of the intervention: breath, self-affirmation, identifying emotions, and meditative listening. Next, the methods of teacher training of the intervention will be discussed, and the social validity and fidelity of the intervention will be reviewed. Finally, the chapter will conclude with a description of cognitive behavioral theory and how it related to this study.

History of School's Role in Emotionally Supporting Students

Schools have often been the entry point for social and emotional health services. This section of Chapter II examines the history of emotional support within schools, and how the amount of attention and resources devoted to mental health support within education has often been driven by the needs of society. This includes why the emotional support of students remains a critical part of education today.

History of Emotional Support Programs in Schools

In the early 1900s, the social and emotional development of students was viewed through the lens of citizenship, specifically learning the character traits of how to be a citizen who would support the quickly changing country (Snedden, 1918). Because of the growing global industries, changing urban environments, varying home structures, and changes in social groups, schools had a heavier responsibility to develop student's character. Responsibility to teach social and emotional skills was traditionally on families, but the First World War changed the responsibilities and dynamics of families. Citizens had greater responsibilities (Snedden, 1918) and school became a place where students learned about how to develop their character, along with academics. The term, "character education," became popularized and a regular part of schooling. Character education included good ideals, habits, and moral insight in which students were taught about their future responsibilities in school and outside of school as a citizen.

A national effort to standardize character education was the development of the Children's Morality Code. The development of these standards include input from a representative from each state, with the goal of providing educators, parents, and students

with clear expectations and goals for character education (Snedden, 1918; Children's Morality Code, 1924). The Children's Morality Code explains what morals and ideas should be taught to students including self-control, good health, kindness, truth, sportsmanship, teamwork, self-reliance, duty, reliability, and good workmanship (Hutchins, 1926). Many of these domains connect to today's expectations for supporting the emotional development of students.

In 1941, Lois Murphy published an article titled, "Social and Emotional Development," which provided examples of why social and emotional development should be a priority in education. He emphasized that there is meaning behind a behavior that can be understood by examining the purpose and function of a behavior, rather than only looking at the behavior (Murphy, 1941). For example, traditional methods may result in schools solely label a student with having a reading disability, whereas Murphy encouraged teachers to also examine emotional attitudes that could lead to resistance, fears, or other blocks in learning. Murphy found that utilizing student interest and positive motivation helped create student curiosity and engagement, which led to improved learning. Teachers were also encouraged to have a friendly, firm, and understanding presence, rather than solely an authoritative presence (Murphy, 1941). More specifically, teachers learned how to monitor students' time, habits, relationships, and play to better understand the students' emotional development. By relating to students, using empathy to connect with students, and learning to understand behavior, teachers found new ways to support individual student needs (Murphy, 1941).

As momentum started to build for emotional support of students within schools, a major event in US history caused a change in education. In 1957, Sputnik 1 was launched by the Soviet Union and the United States became concerned about the educational quality and cognitive superiority compared to other countries. The US quickly developed the National Defense Education Act (NDEA) in 1958 (Vicary, 1976). The purpose of this Act was to improve education and encourage students to enter scientific and technical fields (Vicary, 1976; Schmidt, 2008). Part of the NDEA included substantial funding for school counselors to assess academic potential and encourage students to attend college. Also, universities received funding to grow the number of counselors within schools. As a result, the number of counselors and social workers within schools grew exponentially in the 1960s and 1970s (Schmidt, 2008). The increased number of mental health professionals in schools helped to make emotional support a priority within education.

Catholic schools and parents were also directed in the late 1960s to support the emotional development of students through the Second Vatican Council's ninth document titled the Declaration on Christian Education (Educationis, 1965). This document stated that since parents have given children their lives, they are expected to educate their children. This includes building a well-rounded personality and social education to meet the needs of society. The Declaration of Christian Education also stated that schools must strive for a complete formation where the physical, moral, and intellectual are taught in partnership with religious education. As a result, Catholic schools are expected to synthesize culture, faith, and life to create knowledge that develops

virtues and the characteristics of a good citizen (CONGREGATION FOR BISHOPS, 2004).

The Development of Social and Emotional Learning (SEL)

Emotional development of students continued as a major priority within the field of education during the 1990s, under a new name of social and emotional learning (SEL). SEL was a priority for schools due to increasing research about the effectiveness of emotional learning on academic achievement and the growing concerns about how vulnerable children were supported in the classroom (Hoffman, 2009). Goleman's (1995) book, *Emotional Intelligence*, created a movement within education to prioritize the social and emotional development of students, which resulted in SEL becoming a major theme within school programming (Hoffman, 2009). It is estimated that more than 200 types of classroom-based SEL programs were used in the US in the early 2000s (Collaborative for Academic, Social, and Emotional Learning, 2007; Hoffman, 2009).

In 2001, the National Conference of State Legislators passed a resolution supporting the teaching of SEL skills in schools, and in 2004 Illinois became the first state to develop specific SEL standards for K–12 students. The National Catholic Educational Association (NCEA) developed standards and benchmarks for effective schools in 2012 which included teaching SEL skills such as how to be responsible, build relationship and social skills, and support habits of mind (Ozar & Weitzel-O'Neil, 2012). Private and federal funding began to increase to support social and emotional program development (Boler, 1999). Also, hundreds of organizations began to focus on SEL and to include programs, workshops, and curricular materials to individuals, corporations, and

schools (Hoffman, 2009). As the number of mental health concerns with students continues to rise (Office of the Surgeon General, 2022), emotional support of students remains a focus within education. The next section explains how social workers and school psychologists have supported this historical progress of schools supporting the emotions of students.

History of Social Work and Psychology in Schools

School social workers and psychologists have historically played a major role in creating universal and individualized emotional support programs for schools (Gherardi, 2017). In the early 1900s, societal concerns about immigration, urbanization, and public health resulted in the development of social work and psychology within education (Gherardi, 2017). The initial purpose of social work during this time was to build connections between school, family, and the community to support these societal concerns. Over time, social work evolved to focus more on universal prevention programs within schools and supporting individual students (Gherardi, 2017; Allen-Meares, 2006).

The Disability Rights Movement, which started in the 1960s, resulted in schools starting to have the financial means to provide services from social workers, counselors, and psychologists. Before the 1970s, much of the social work was done outside of schools at agencies, which made it difficult to bridge the gap between social workers and schools (Gherardi, 2017). However, the Rehabilitation Act and Education for All Handicapped Children Act (EAHCA; 1975) resulted in policies that brought social work into school buildings. The 1978 Pastoral Statement of US Catholic Bishops on People

with Disabilities stated that people with disabilities must be able to fully participate in all components of their faith, including Catholic education (Bishops, 1978). Between 1977 and 2007, school social workers employed by schools increased by almost 10,000 employees (Gherardi, 2017).

The number of youths involved in violence, drug use, and teen pregnancy was increasing, which resulted in an increase of federal funds for school social workers to build systems of mental health support within schools (Dorfman, 1988). Since these concerns were impacting a broader spectrum of students, mental health professionals began to think larger about how to include social supports, prevention, and interventions in schools that would support all students universally (Gerardi, 2017). To help create universal systems within schools, the 1997 Individuals with Disabilities Education Act (IDEA) increased federal funding in the field of social work and psychology. This led to clinicians being better able to integrate social work services into public school systems so that all students were being positively impacted (Individuals with Disabilities Education Act, 1997).

Most recently, social workers and psychologists help schools to introduce many resources and systems, such as MTSS, to universally support students' emotional development. One universal emotional support method introduced to schools by mental health professionals was social and emotional learning. Clinicians also helped schools to implement systems such as response to intervention (RtI) to address the potential for diagnosing learning disabilities through monitoring academic interventions, as opposed to the more traditional model of evaluating IQ tests and academic performance (Berkeley et

al., 2009). The combination of SEL and RTI programs allowed social workers, teachers, and psychologists to create systems to support all students, while also providing more targeted mental health services to specific students in need.

Although federal funding has been dedicated to building strong systems of support, there is a shortage of social workers and school psychologists available as mental health concerns continue to rise within schools (Kepley & Streeter, 2018). Part of the social work code of ethics is to provide support to individuals and groups, while also addressing systemic needs or inequality (National Association of Social Workers, 1996). But school staff continues to face challenges when building systems that include interventions, assessments, case management, and evaluation due to staff and funding shortages. Therefore, there is a need for simpler tier one social and emotional interventions within school systems that can be easily applied by all school staff.

Catholic schools face additional challenges when trying to staff support for students with disabilities because these schools receive a smaller allocation of IDEA funds available (Burke & Griffin, 2016). Adequate training, personnel, professional development, and programming related to supporting the mental health of students requires substantial financial support (Bonfiglio & Kroh, 2020). Since federal and state funding of Catholic schools is limited, the responsibility of building systems of support often lies on the existing teachers and administrators. However, teachers and staff often lack the experience, training, and knowledge necessary to support students with disabilities (Boyle & Hernandez, 2016; Durow, 2007). This creates barriers for Catholic schools to be able to provide mental health services (Bonfiglio & Kroh, 2020). The

challenges of staffing and funding to support the mental health of students has been taken into considering for the intervention used for this study.

Purpose of Schools Investing in the Emotional Development of Students

The previous section demonstrated how societal events throughout US history have resulted in schools prioritizing emotional support of students. This next section explains why emotions are a priority within learning. Specifically, how our brain impacts learning, how emotions impact learning, and how reading comprehension can be impacted because of emotions.

Neuroscience Related to the Impact of Emotions on Engagement and Learning

Students who regularly experience stressful or traumatic events are likely to be faced with challenges in their school environment and often require extensive support at school (Immordino-Yang, 2015). When stress hormones (from trauma or otherwise) continuously enter the brain, there is a negative effect on social, emotional, academic, and physical development. For example, the frequent release of stress hormones negatively impacts executive functioning, concentration, language processing, sequencing, decision making, and memory (Terrasi & De Galarce, 2017). Students may also have difficulty trusting the environment they are in and can become hypervigilant to potential threats. Students who have been impacted by trauma or regular stress can be more vulnerable to anxiety, depression, withdrawal, or “acting out” behavior (Terrasi & De Galarce, 2017). The student may be viewed as inattentive, disobedient, or defiant, however, these behaviors are likely a reaction to how their brain is responding to trauma or stress.

Current research shows that children's brains are flexible and have the ability to change when given the correct environmental conditions and proper interventions. This is called neuroplasticity (Davidson & McEwen, 2012; Terrasi & De Galarce, 2017). When schools and teachers provide physical and emotional spaces that create positive environmental conditions, this allows neuroplasticity to take place and the severity of trauma symptoms can be reduced (Davidson & McEwen, 2012; Kempermann & Gage, 1999). If teachers and staff can create a safe, welcoming, respectful, cooperative, and inclusive school environment, students have a stronger chance to develop healthy habits, positive relationships, emotion regulation, and academic success. A productive learning environment can improve the efficiency in brain development during neuroplasticity which allows for flexible thinking and mastery of skills to improve social, emotional, and academic achievement (Immordino-Yang, 2015; Immordino-Yang et al., 2018).

The scientific understanding of how emotions influence thinking and learning has undergone a major transformation in the last few decades, focusing on the brain connectivity between how a person thinks, feels, and relates to others (Immordino-Yang, 2015; Terrasi & De Galarce, 2017). Past researched and theories focused on individual brain regions, such as how the brain impacted cognition and, separately, how the brain impacted emotional function (Terrasi & De Galarce, 2017; Durlak, 2015). More recently, scientists are focusing on the connection between regions of the brain including how there is a connection between how a person thinks, feels, and relates to others (Immordino-Yang, 2015). Scientists are looking at how the brain is structurally connected, and how brain activity in one area can precede, follow, or happen

simultaneously as brain activity in another area (Durlak, 2015). This newer research on brain connectivity has helped to create SEL programs and mental health supports which focus on how thinking, attention, and emotions are connected and related to success (Durlak, 2015).

Emotions are a critical step to build memories, engage in complex thoughts, or make meaningful decisions (Immordino-Yang, 2015). When a student is given opportunities, support, and encouragement, the student's brain is able to naturally think, feel emotions, and engage socially and intellectually (Immordino-Yang, 2015). Although the brain is regularly changing over the course of life, it is particularly important to support the emotions of children as they grow into adulthood (Immordino-Yang, 2015). This includes having a positive learning environment, and teaching skills such as how to create goals, build peer relationships, obtain support, act independently, collaborate, and be aware of your own emotions (Immordino-Yang, 2015). When student emotions are supported and given the opportunity to develop, there are positive outcomes in school and students' futures.

Impact of Emotions on Academic, Social, and Emotional Outcomes

Emotions can control a student's attention, motivation, self-regulation, and learning decisions (Pekrun, 2014) and form a critical piece of how, what, when, and why people think, remember, and learn (Immordino-Yang, 2015). In the Surgeon General's 1999 Report, mental health is described as the "springboard of thinking and communication skills, learning, emotional growth, resilience and self-esteem" (Office of the Surgeon General, 1999).

Researchers have demonstrated that positive emotions can increase motivation and learning while negative emotions can result in avoidance, lack of motivation, and negative outcomes on achievement and learning (Hamed et al., 2019; Goetz et al., 2006; Pekrun et al., 2002). Pekrun outlines four negative emotions and their impact on learning: attention, motivation, learning strategies, and self-regulation. Attention is reduced when a person is having negative emotions, for example, anxiety about failing an exam reduces the amount of attention on studying for the exam. Motivation to complete schoolwork or engage in class is reduced when there are negative emotions such as hopelessness, boredom, and withdrawal. Negative emotions, such as shame or anxiety can impact a student's ability to use simple learning strategies. Finally, self-regulation is impacted by negative emotions resulting in students relying on guidance from adults or teachers due to anxiety. Negative emotions cannot be eliminated, but there are ways to support students as they experience them (Pekrun et al., 2002).

The wide variety of emotions that students experience, positive and negative, impact learning and achievement, so it is critical for schools to create environments that support the complex dynamics of emotions. Examples of emotions may include excitement, success, anxiety, pride, boredom, admiration, or anger. The emotions can be a result of events happening within the school or outside of school. Regardless of where the emotions originated, it has an effect on student learning and achievement (Pekrun, 2014). Pekrun identifies that there are four specific types of emotions related to academics: achievement, epistemic, topic and social. Achievement emotions relate to success and failures within academics such as enjoyment of learning, hope for success, or

anxiety related to failure. Epistemic emotions are related to cognitive problems such as curiosity in a new activity or confusion about an obstacle. Topic emotions pertain to the specific topic that is being discussed in a class, such as feeling empathy toward a character from a novel the class is reading. Finally, social emotions relate to interactions with classmates and teachers such as sympathy, compassion, anger, or contempt (Pekrun, 2014). Knowing the variety of emotions just related to a classroom and the impact of emotions on learning, it is critical for schools to have systems to support these emotions.

It is important for schools to be prepared to create systems to support the unique emotions that students experience. There is evidence about the effectiveness and positive impact on mental health and behavioral outcomes when support is provided at the universal and targeted level (Clark et al., 2021). Students personally manage mental health challenges differently, and there is not one solution for students who may experience negative emotions (Office of the Surgeon General, 1999). Different students can experience very different emotions, even having been in the same situation. For example, one student may be very excited about a science project while another may be overwhelmed. Also, some subject matters may leave a student feeling confident while another results in anxiety. Emotions can change over time, along with emotional stability. When schools have systems built to support student emotions, more individualized approaches can be used.

Impact of Emotions on Reading Comprehension

A complex cognitive task that emotions have a major impact on is reading comprehension (Hamedi et al., 2019). Comprehension requires readers to decode words,

understand vocabulary, access prior knowledge, connect with background knowledge, and construct meaning (Hamedi et al., 2019). A “good reader” is able to actively engage in reading by investigating the text, making predictions, monitoring own comprehension, using context clues, and paraphrasing meaning (Pressley, 2002). These are complex learning skills that students develop over time through engagement in academic instruction.

Researchers have demonstrated that a student’s ability to engage in reading is based on the combination of emotion, cognition, and behavior (Fredricks et al., 2004). For students to successfully engage in the complexities of reading comprehension, they must be emotionally ready and motivated. For example, researchers have shown that high motivation to read results in students engaging in reading three times as much as students who were less motivated (Wigfield & Guthrie, 1997). The motivation for students to read increases when students have confidence in their reading abilities. Engagement in reading improves the more students are motivated to read, which impacts comprehension positively (Wigfield & Guthrie, 1997).

Student motivation and emotions toward reading directly affect how much and how effectively students read (Wigfield & Guthrie, 1997; Wigfield et al., 2004) along with how likely students are to continue in school (Guthrie, 2008). The amount children read contributes to their knowledge of the world and also leads to individuals participating more in their communities (Wigfield & Guthrie, 1997). Student motivation toward academic activities is declining, and some have explained this because of the amount of comparative feedback students receive through assessments. This impacts

students' confidence, and as a result, engagement in reading. There are researchers who suggest that changing instructional practices can result in increasing student motivation (Wigfield et al., 2004). Knowing that engagement is a major predictor in learner academic performance and emotions (Scott & Walczak, 2009), schools need to have systems to support student emotions.

Systems within Schools to Effectively Support Student Emotions

The following section explains how the components of multi-tiered systems of support (MTSS) work collaboratively to support the mental health of students.

Explanation of Multi-Tiered Systems of Support (MTSS)

An educational framework to build school-based mental health is multi-tiered systems of support (MTSS). This framework provides intervention resources to support the academic, behavioral, and social and emotional needs of students (Horner et al., 2017). MTSS includes universal screenings of all students, multiple tiers of instruction and support services, integrated data collection, and an assessment system to inform decisions at each tier (Marlowe, 2021). It provides a continuum of support to meet students' mental health needs. This includes evidence-based practices and trauma-informed mental health care (The Office of Surgeon General, 2022). MTSS allows for collaboration between general education and special education teachers, along with all other support specialists to ensure student improvement goals are met (Marlowe, 2021).

MTSS focuses on meeting the individual needs of students through the continuous use of data. Over time, schools have realized that there is not a successful "one-size-fits-all" approach to schooling. Academics, behavioral, and emotional support need to be

flexible and adaptable to support individual students. In order to provide individualized support, schools must collect academic, behavioral, and social-emotional data about their students to create a system that meets the schools need (Horner et al., 2010). By looking at current data, MTSS can be created to uniquely fit schools with the goal of preventing academic and behavioral problems, while having strategic plans for when the prevention is not sufficient (Goodman & Bohanon, 2018). The MTSS framework must include the following in order to be implemented correctly: interventions that are organized and along a tiered continuum, the use of assessment to identify students in need of more intense interventions, data collection about student progress in order to modify program decisions, and systems to ensure MTSS is implemented correctly. All four components must be present within MTSS; schools cannot pick-and-choose components of MTSS they are interested in implementing. MTSS will look different at each school because systems, interventions, and assessments, are created for specific schools. But all these components must be present (Goodman & Bohanon, 2018). Each schools creates their own plan for the tiers of MTSS, with the following framework:

- Tier one is the primary support which provides universal interventions that support all students. This tier includes evaluating and implementing effective instruction (Horner et al., 2010). Examples include providing the whole class clear and specific instructions, providing students with clear behavioral expectations, and completing guided practice. Evidence-based curriculum for academic and behavior is used.

- Tier two provides strategic, targeted support to students who are not meeting expectations within the universal support. Typically, tier two supports students within small groups (Horner et al., 2010). The goal of tier two is to provide short-term interventions to get students prepared for tier one support. An example may be if a student continues to show attention-seeking behavior, having the student do a “check-in” with the teacher twice a day to receive positive attention from adults.
- Tier three supports are the most individualized and intensive supports and interventions created to meet the distinct needs of a student (Goodman & Bohanon, 2018; August et al., 2018). A more comprehensive assessment is used to determine, or diagnose, student academic or behavioral concerns. Individualized interventions are created based on these assessment results. Typically, a team of professionals works together to decide on the tier three plan. Examples may include a student starting counseling, or intense academic remediation (Horner et al., 2010).

By being proactive with universal interventions, schools have the potential to create lasting positive changes with academic, social, emotional, and behavioral goals (Bohanon et al., 2022; Greenberg & Abenavoli, 2017). The tiers of MTSS are meant to be fluid. For example, a student may need a tier two emotional support at lunch and recess but receive tier one emotional support at all other times of the day. The hope of a tier one intervention is that 80% of the students will respond effectively. The other 20% of students can benefit from the tier one intervention, but they may need additional tier

two or three interventions. The MTSS tiers use interventions that align with standards, maintain effective instructional strategies, and use data to determine what is effectively working in the school-based mental health supports (Bohanon et al., 2022; Durlak, 2015).

An MTSS approach is not possible without active participation of the staff, a trained interventionist to lead MTSS, and resources such as time and curriculum. This includes staff being trained on the purpose of MTSS and how it is utilized as a system. It can take time to obtain the support of a school staff, so it can be best to adopt MTSS in stages. It is common to implement universal support first, and then begin to work in Tier two and three over time. Each tier needs training, coaching, data collection, and revisions for continuous improvement (Goodman & Bohanon, 2018). For some teachers, MTSS can be a shift in thinking about supporting students, such as labeling. Interventions should be labeled, not students. An example of student labeling would be, “This is a tier two student.” An MTSS approach would be saying, “This student receives tier two support during math class.” A paced roll-out of MTSS can result in better support and training of staff on each component of the system.

Programs related to mental health are much more likely to be effective when they are a part of a whole-school system. The Every Student Succeeds Act (ESSA) (2015) specifically recognized MTSS as a way to improve student learning and focus on mental health support of students. A whole school model should include universal interventions, a supportive school environment that fosters positive relationships, learning opportunities for the home environment, and development of a strong connection with mental health

services and vulnerable young students (Clark et al., 2021). A system for mental health or behavioral intervention should be strategic and ongoing rather than a one-time event.

As stated previously, due to lack of funding, Catholic schools often do not have the specialized personnel, such as social workers or behavioralists, available to provide specialized support to students (Morten, 2020). Systems of support, such as MTSS, are typically built by classroom teachers and administration. In order to implement a three-tiered intervention program, Catholic schools need to establish teacher leaders to drive the initiative, provide comprehensive professional development to teachers, and create a collaborative and flexible environment for teachers to provide targeted interventions (Morten, 2020). It is critical for Catholic schools to maintain a culture that allows for collaboration and teamwork amongst various grade level and content areas. The next section examines how MTSS uses cognitive-behavioral therapy and trauma-informed care.

The Inclusion of Cognitive-Behavioral Therapy (CBT) and Trauma-Informed Care (TIC) within MTSS

Cognitive Behavioral Therapy (CBT) has been successfully applied within school settings and MTSS to address the most common childhood and adolescent mental health symptoms (Joyce-Beaulieu & Zabolni, 2021; Ginsburg et al., 2008). School-based CBT has resulted in benefits such as improved attendance, lower discipline referrals, and a higher-grade point average (Michael et al., 2013). Additionally, universal screeners can be used to acquire social-emotional data that helps to identify students who are at risk and may benefit from a tier two or three intervention. Tier one CBT approaches include

social-emotional learning programs, and class-wide behavior management practices. Tier two CBT may include a small group of students working together on social skills, test anxiety, or self-regulation. Data about student progress is collected during this tier to see if a student is making adequate progress or needs to move to a tier three intervention. Tier three CBT practices can be individualized or in a group, however the intervention is customized to the student. Data is collected using pathology rating scales along with school performance measures such as attendance and behavior discipline referrals (Joyce-Beaulieu & Zabolski, 2021). Ongoing assessment of student success within MTSS is critical to understand how students are developing and which students would benefit from additional CBT strategies.

Trauma-Informed Care (TIC) and MTSS work in partnership to support the mental health of students within schools. Outcomes of schools that include TIC within MTSS have improved graduation rates, attendance, behavior, and physical and emotional safety (Hoover, 2019). In order to be successful, the system must be well organized in ways that emphasize prevention, include early intervention, and allocate resources strategically (Reinbergs & Fefer, 2018). A MTSS system that prioritizes TIC provides specific attention to trauma-affected staff and students and includes a positive school climate, social and emotional learning, and mental health resources for all. Tier one support would include mental health activities such as promotion of social and emotional learning (SEL) with the goal of supporting all students whether or not they are at risk of traumatic experiences. TIC within tier one focuses on prevention within relationship building, emotional regulation, and emotional safety and consistency (Reinbergs & Fefer,

2018). SEL and positive behavioral interventions and support (PBIS) are two preventative programs that can be used to provide TIC support to all students. Tier two supports are provided to students who are identified through a needs assessment that all students take or a staff recommendation. An assessment helps to determine treatment plans, potential diagnosis, and intervention targets, such as Cognitive Behavioral Interventions for Trauma in Schools (CBITC) (Reinbergs & Fefer, 2018). An example of a tier two intervention would be a daily check-in with a staff member. Tier three supports are uniquely designed to support individual students who display mental-health concerns or functional impairment, and this may include therapeutic services (Hoover, 2019; Reinbergs & Fefer, 2018).

As discussed in the previous section, in order to successfully implement MTSS, staff needs to be included in planning and supported in understanding CBT and TIC. Teachers must obtain support from administration, accept the process, be given flexibility and adaptability with MTSS techniques, and the MTSS framework must be realistic to implement considering local school resources (Reinbergs & Fefer, 2018). When utilizing CBT and TIC within MTSS, it is critical that staff receive professional development on trauma and ACEs. The goal of PD is for staff to have an increased awareness and understanding of how emotions, stress, and trauma can impact their classroom environment. Also, there are some CBT and TIC techniques that classroom teachers can utilize, and professional development would provide teachers with that knowledge and training. When staff supports and collaborates in the development of an MTSS framework that includes CBT and TIC, outcomes can include improvement to

student daily functioning, academic success, positive school climate, increased school safety, less bullying, and improved peer and teacher-student relationships (Hoover, 2019).

Social and Emotional Learning within MTSS

Social and emotional learning programs are a tier one prevention tool used within MTSS to help students acquire knowledge, skills, and attitudes that can develop healthy identities, achieve goals, manage emotions, build and maintain relationships, show empathy, and make responsible decisions (CASEL, 2022). Also, SEL teaches students how to understand emotions to support ourselves, our relationships, and our work, effectively and ethically (CASEL, 2007). The domains of SEL are self-awareness, self-management, social awareness, responsible decision-making, and relationship skills (CASEL, 2022). Research continues to show how learning SEL skills such as emotional identification, emotional regulation, communication, and empathy can result in improved mental health and well-being of children (Clark et al., 2021). Many schools have acknowledged this importance and developed social and emotional learning (SEL) programs to support students. Research indicates that effective mastery of social and emotional skills is associated with greater well-being and better school performance, whereas the failure to achieve SEL skills can lead to a variety of personal, social, and academic difficulties (Elias et al., 1997; Durlak et al., 2011).

There are many pathways to implement social and emotional learning within MTSS that create a positive, safe, and affirming school environment. It is most common to have SEL be a part of tier one as a proactive strategy to minimize the number of

students in need of tier two and three support (Gueldner et al., 2020). SEL strategies can be used universally, in a small group, or individually. Approaches to deliver SEL instruction can be explicit lessons, integrated into academic content, or a change in teaching practices (CASEL, 2012). There are also formalized programs that can be used to teach SEL which are more programmatic and structured (The Office of Surgeon General, 2022). Although the specific SEL skills that schools focus on may vary, the consistent goal is for students to develop personal skills which result in impacting others positively. For example, a student may learn to self-identify emotional cues when becoming frustrated and manage emotions of frustration in order to not interfere with a friendship (Downer et al., 2010).

SEL is an important part of MTSS and is successful when it works alongside academic programming, CBT, and TIC interventions to meet the individual needs of students (Gueldner et al., 2020). The following criteria must be included within effective SEL programs: systematic instruction and practice of SEL skills that clearly link to academics from year-to-year, a positive school culture with unifying themes such as respect or responsibility, evidence-based and developmentally appropriate preventative instruction, and additional supports for students handling crisis, stress, and trauma (Elias et al., 2002; Elias et al., 1997). It is also critical that staff is included in planning and trained in the variety of ways to include SEL within their classroom.

School Psychologists and Social Workers within MTSS

Although psychologists and social workers traditionally support students receiving tier three support, their skills and training would be beneficial to all tiers of

MTSS (Gueldner et al., 2020). This includes teacher training, staff support, organizing evidence-based practices, creating interventions, and supporting students and parents. School psychologists and social workers can be utilized to build preventative MTSS program that include SEL, CBT, and TIC. Also, school psychologists and social workers have a critical role in mental health support to students within MTSS. However, staffing of these positions is a challenge. The American School Counselor Association (ASCA) recommends one counselor for every 250 students, but the national average is one counselor for every 424 students (The Office of Surgeon General, 2022). This shortage is due to funding challenges and the growing number of students who are in need of tier two and three support (Gueldner et al., 2020). If strong MTSS systems are created, a tier one mental health foundation can help to minimize tier two and three students so that school psychologists and social workers are more available.

Research Study Intervention

Origins of Intervention X

Intervention X was adapted by the researcher for the purpose of this study. The intervention was adapted due to the absence of peer-reviewed research on the researcher's intervention interest. Intervention X was based on an intervention found in Phifer et al.'s (2017) workbook, CBT Toolbox for Children and Adolescents. The model for Intervention X is the ten-point check-in intervention. This was meant to support grounding and coping skills, where students begin the intervention at step ten and then work their way down to step one. Students then evaluate how they felt at the start and the

end of this intervention. Below are the steps of the ten-point check-in (Phifer et al., 2017).

10. Take 10 deep breaths
9. Name 9 things you see
8. Name 8 people who support you
7. Name 7 colors
6. Name 6 things that make you happy
5. Take 5 deep breaths
4. Name 4 things you hear
3. Name 3 things that you can touch
2. Take 2 deep breaths
1. How do you feel now?

For this study, the ten-point check-in has been modified to Intervention X:

- 3 rounds of deep breaths
- 3 things that you hear
- 2 emotions you are feeling
- 1 compliment to yourself
- 3 rounds of deep breath

Foundation of Intervention X

As stated in the previous section, CBT, SEL and TIC strategies all have an important role in supporting the unique emotions of students. Intervention X was created for the purpose of this study to be a tier one universal intervention that incorporated the

research of CBT, SEL, and TIC. Intervention X uses meditative breathing, meditative listening, self-awareness, and self-affirmation. These techniques may allow students to self-regulate their emotions and actions.

The following sections will provide research related to each component of Intervention X, and an explanation of how the original intervention was adapted for this study using the Fuchs, Fuchs, and Malone framework as a guide.

Research Related to Deep Breathing

A self-regulatory tool that can reduce feelings of anxiety and be easily accessible to students is deep breathing. Deep breathing is slow diaphragmic breathing that is focused on air going to the belly (Khng, 2017). Quick, shallow breaths in the chest are related to anxiety and tension while slow, deep breathing in and out of the stomach causes relaxation (Boiten et al., 1994; Khng, 2017). Deep breathing is free, natural, and can be easily taught within classrooms (Larson et al., 2010; Khng, 2017). It is a technique that students can access and apply to a variety of experiences, does not require any materials such as drawing or journaling, and is often included in treatment plans for anxiety disorders (Khng, 2017).

Slow-paced belly breathing is a foundational piece of many school-based mindfulness programs, which helps to build the SEL skill of self-awareness (Obradović et al., 2021). Mindfulness is a state of mind that increases a person's awareness of experiences in the present moment and includes components such as deep breathing, self-talk, and mental images (Creswell, 2017; Engelniederhammer et al., 2020). A study by Obradović et al., from 2021 showed how taking a few deep breaths within a naturalistic

setting (not laboratory study) such as a playground or classroom can decrease anxiety, excitement, or tension. Teachers may use breathing techniques during transition activities, or when students become restless, unfocused, or emotionally dysregulated (Obradović et al., 2021).

Although breathing is a natural part of our biology, deep breathing is a skill that needs to be taught to students. This is because rhythmic and paced inhalation and exhalation is not always intuitive to children. It is recommended that children use a much shorter time period, such as three minutes to practice deep breathing (Zelazo & Lyons, 2012). Since students need support in learning to take deep breaths, teachers should include simple instructions for students, and also model how to take deep breaths (Burke, 2010; Engelniederhammer et al., 2020).

Research Related to Meditative Listening

Meditative listening is a form of attention regulation in which a person maintains focus on a sound while disregarding cognitive distractions (Engelniederhammer et al., 2020). Training on meditative listening helps the brain to move away from mind-wandering, stressful thinking, and evaluation of negative emotions (Brewer et al., 2011). Meditative listening can help to regulate emotions students are feeling, because sounds can trigger automatic emotional reactions (Sears & Chard, 2016). For example, if a student hears a clock ticking, an emotional reaction could be frustration towards the clock, environment, or people within the environment, thus losing focus on the present. Through meditative listening, a student can learn to focus on the realities of the clock such as the sounds and rhythm of the ticking and return to focusing on the present

moment (Sears & Chard, 2016). Paying attention to the present moment discourages becoming lost in thoughts, associations, or ruminations (Teasdale et al., 1995).

Meditative listening requires practice but helps build skills of distinguishing between an actual experience, and thoughts and emotions (Syeda & Andrews, 2021; Sears & Chard, 2016). The focus that comes with meditative listening can result in students maintaining a better presence within the classroom.

Research Related to Labeling Emotions

Emotional labeling is the act of applying vocabulary terms to emotional experiences or content (Kircanski et al., 2012; Lieberman et al., 2007). Research suggests that emotion labeling helps to foster emotion processing, decrease emotional reactivity, and improve overall emotional regulation (Lieberman et al., 2007; Edwards et al., 2018). Being aware of your own thoughts and emotions is a skill that is challenging for many students, especially those who need additional emotional support (Sears & Chard, 2016). The ability to recognize emotions can help students and teachers to connect with one another and engage in the classroom environment (Bracket & Simmons, 2015). When students understand their emotions and learn to identify them, they can better communicate what they need. For example, if a student can express their emotions of being worried or confused during a test, they may have the skills to ask the teacher for help (Bracket & Simmons, 2015).

Schools can assist students in learning the steps of labeling emotions: recognize, understand, and then label. Schools can teach students how to recognize emotions through facial expressions, vocal tone, body language and physiology such as heart rate

(Brackett & Simmons, 2015). After students develop the skills of recognizing an emotion, then they can begin to understand how our thinking, decisions, and behavior are connected. After recognizing and understanding an emotion, students can begin to label emotions. Labeling of emotions takes place when students also can match an emotion with vocabulary. Labeling an emotion can range in complexity. For example, a simple emotion to label is sadness, and a more complex emotion to label is shame. It is common for people to have difficulty finding the exact word to match their feelings. One way to help students build this vocabulary is by teaching emotions such as happiness or anger, and how these emotions can be expressed differently by different people. When students label emotions, they can better regulate their emotions.

Research Related to Self-Affirmation

Self-affirmation is the act of affirming one's self-worth and acknowledging personal strengths and values. Self-affirmation includes being able to prevent or reduce unwanted emotions or thoughts and maintain or initiate positive ones. An example of negative self-talk is, "I can't do this," while positive self-talk is, "I'm doing a great job" (Brackett & Simmons, 2015). This self-affirming positive talk helps to remind people about who they are, what is important, and how they are doing in their lives (Cohen & Sherman, 2014; Sherman, 2013; Steele, 1988; Lakuta, 2020). Studies about self-affirmation have shown many positive results including academic performance, self-control, and health-related behavior (Cohen & Sherman, 2014; McQueen & Klein, 2006; Sherman & Cohen, 2006).

Research shows how individuals with self-affirmation skills are better able to process threatening information, reduce negative emotions, and broaden perspectives (Cohen & Sherman, 2014; Sherman, 2013; Sweeney & Moyer, 2015). An example of a threat would be a person communicating that “You are stupid.” Self-affirmation skills would allow an individual to naturally counter the negative communication through positive self-talk of, “I am smart, and I am capable.” Self-affirmation helps to buffer insecurities against social self-threats, and improves relational security (Stinson et al, 2011). By using self-affirmation, a student can look at things more broadly and not feel as easily threatened and defensive (Łakuta, 2020; Steele, 1988; Cohen & Sherman, 2014; Sherman, 2013).

Use of the Taxonomy of Intervention Intensity to Adapt the Intervention for this Study

As stated previously, Intervention X was created for the purpose of this study and is based on the ten-point check-in intervention (Phifer et al., 2017). To modify the intervention, the Taxonomy of Intervention Intensity was used. This next section will outline how the Taxonomy was used to modify the ten-point check-in into Intervention X. As a review, here are the components of Intervention X:

- 3 rounds of deep breaths
- 3 things that you hear
- 2 emotions you are feeling
- 1 compliment to yourself
- 3 rounds of deep breath

The Taxonomy of Intervention Intensity has seven principles for evaluating and building interventions based upon research. These include strength, dosage, alignment, attention to transfer, comprehensiveness, behavioral support, and individualization. This Taxonomy is used to systematize the process of setting up an intervention, monitor a student's response, and improve the intervention to meet the individual student's needs. The goal of using the Taxonomy is to improve the quality of intervention, improve specific student outcomes, and help schools to design and organize their intervention program (Fuchs et al., 2017).

Strength

The first part of the Taxonomy is strength which refers to the strength of the intervention (Fuchs et al., 2017). Strength reviews how well each component of Intervention X works for students. The previous section shares research supporting the use of deep breathing, meditative listening, emotion labeling, and self-affirmation. Each has research showing the positive impact that practicing these skills can have on learning and emotional regulation.

Dosage

Dosage refers to changing amounts such as the number of students in a group or number of minutes of an intervention (Fuchs et al., 2017). The original intervention was ten steps and would take between five to seven minutes to complete. Since one of the goals of this intervention is for it to be easily accessible and transferable to many situations students experience, Intervention X was modified to only five steps, so it would take between two to three minutes.

Alignment

Alignment is the third step that refers to how well an intervention meets (or does not meet) the student's target skills and how an intervention aligns with grade level standards, school expectations, or classroom expectations (Fuchs et al., 2017) This study took place at a school in Illinois, and the Illinois State Board of Education (ISBE) has Social and Emotional Learning Standards which align with the components of this intervention. Goal one of the ISBE SEL standards is to develop self-awareness and self-management skills to achieve school and life success, including identify and manage one's emotions and behavior (ISBE, 2003). The components of Intervention X were tools that build self-awareness and management of emotions, thus aligning to standards.

Attention to Transfer

Attention to transfer is a method that reviews how an intervention can be applied to other formats and contexts, such as a student being able to practice a math skill at home when working independently. Interventions can include explicit instructions for how to transfer a skill to other situations (Fuchs et al., 2017). Since one of the goals of this intervention was for students to be able to easily transfer this method to other parts of their lives, the students were explicitly taught how to do so. The intervention did require not materials and did not have a cost. It was a free, simple tool that students could use in their school, home, or community.

Comprehensiveness

Comprehensiveness is the plan for explicitly teaching students the skills within the intervention. These skills include explanations using direct language, modeling,

assessing background knowledge, gradual fading of support, and providing practice and review (Fuchs et al., 2017). Students were taught how to participate in each component of Intervention X: deep breath, meditative listening, self-affirmation, and emotion labeling. The teachers explicitly taught, modeled, and practiced each skill with students prior to completing independently.

Behavioral Support

Behavioral support focuses on how to support students who display noncompliant behavior which interferes with the intervention (Fuchs et al., 2017). Since this intervention required participants to be quiet and focused, a student displaying noncompliant behavior would impact the intervention. A way to build in behavior support was informing students during training (comprehensiveness) about the plan for days when they are not able to participate. This could include checking in with a staff member outside of the classroom or building a quiet space in the classroom where a student can focus on an activity, such as reading, instead of interrupting the intervention. The expectation was that all students participated every day, but the students should know their options for days when they were not able to engage in the intervention.

Individualism

Individualism is about how data is collected and used to determine how students are responding to the intervention and what modifications need to be made to improve student progress (Fuchs et al., 2017). Data collected during this study included a daily check on a student's engagement in the lesson after the intervention and weekly reading comprehension checks. Also, teacher feedback regarding the intervention was collected.

Teacher Training for Intervention

In order for Intervention X to be implemented successfully, teachers were trained appropriately. Teachers interact with students daily, which means they have a critical role in identifying, supporting, and providing for the needs of the students (Wiest-Stevenson & Lee, 2016). The following section provides research about the importance of training teachers in trauma-informed teaching and social and emotional learning.

It has been established through this chapter that school-wide systems are necessary to support the mental health of students, which means that teacher professional development (PD) is required for all staff to understand the school-wide system (McIntyre et al., 2019).

Administration has a critical role in building professional development opportunities for staff, including ongoing training. Administration also needs to create systems for teachers and staff to communicate their needs in order to receive resources and plan interventions for students (Wiest-Stevenson & Lee, 2016).

Teachers typically receive minimal formal training or professional development about trauma and SEL and its impact on student's academic achievement (Ko et al., 2008). Classrooms would benefit from teachers being trained and given resources to build a classroom environment that provides security, comfort, and connectedness to students who have experienced trauma or need emotional support (Wiest-Stevenson & Lee, 2016). Training in trauma provides teachers the knowledge about what trauma is, implication for their classroom, and support options for students exposed to trauma. Professional development can build knowledge and understanding of trauma-informed

approaches in clinical settings which helps bring more understanding to classroom behavior. Obtaining PD about trauma-informed approaches can also increase teacher enthusiasm and motivate teachers to implement emotionally supportive strategies (Han & Weiss, 2005; McIntyre et al., 2019). Positive student outcomes related to SEL skills are not realistic unless high quality professional development is paired with high-quality SEL programming (Oberle et al., 2016). This includes administrative support, team-driven decisions, the systematic use of data, and connections to priorities within the school. Teachers for this study will receive training on the intervention in order to facilitate high-quality instruction.

Social and Judgmental Validity for Intervention

The following section includes information about the social validity and judgmental validity of the intervention.

Social Validity of Intervention X

Social validity is an assessment of whether intervention research goals are met and indicates perceived value or appropriateness of particular procedures (Wolf, 1978; Gresham, 1983). Also, social validity describes the perceived value or acceptability of a treatment, or intervention to determine if an intervention is relevant in everyday life (Diller et al., 2013). Generally speaking, treatments with higher levels of social validity may be more likely to be used in the future by clinicians. It is important to include social validity because it will impact the consumers' perceptions of an intervention (Diller et al., 2013). Social validity should be assessed before and after the intervention (Lane et al., 2009). Assessing before the study helps to identify potential problems and determine

buy-in of intervention, which could impact the fidelity. Because social validity can impact implementation, effectiveness, maintenance, and future use (Elliott, 1988), it is important to review how this study will facilitate social validity measures (Fawcett, 1991).

To measure social validity within the study, the teachers who facilitated the intervention completed the Intervention Rating Profile-15 (IRP-15) (Witt & Elliott, 1985) before and after the study. The IRP-15 is a common rating system for social validity that has been used previously to assess a teacher's perspective on the intervention (Lane et al., 2009). The IRP-15 is a scale with 15 statements that address the acceptability of the intervention. An example of an IRP-15 statement is, "I would suggest the use of this intervention to other teachers." The teacher answered this example statement by rating from 1 (disagree) to 6 (agree) (Martens et al., 1985). IRP-15 scores that are above 52.50 are rated as acceptable (Ozdemir, 2008). It was critical to collect data on social validity to inform readers about the acceptability of Intervention X.

Judgmental Validity of Intervention X

A component of social validity is judgmental validity. Judgmental validity is when program developers or a target audience of "experts" assess the goals, procedures, and effects of an intervention. Judges may be chosen based on being a client, consumer, program implementer, administrator, journalists, public officials, or researchers and knowledge experts (Fawcett, 1991). For this study, judgmental validity was used to gain feedback from a knowledge expert.

In order to obtain judgmental validity for this intervention, Dr. Laura Riffel was consulted as a knowledge expert. Dr. Riffel is the Senior Director at Behavior Doctor Seminars and Teacheropedia through which she has trained educators on how to make data-based decisions to change behavior. She recently authored the book, *Flipping the Script* about changing behavior in the classroom. When developing Intervention X, Dr. Riffel was contacted to obtain feedback. She provided positive and supportive feedback on the components of the intervention including the use of grounding techniques, labeling of emotions, breath regulation, and self-affirmation. Dr. Riffel did not provide any critiques that resulted in changes to Intervention X.

Fidelity for Intervention Research

Intervention fidelity refers to “the methodological strategies used to monitor and enhance the reliability and validity of behavioral interventions” (Bellg et al., 2004; p. 443). Evaluating the fidelity of an intervention is critical for researchers and practitioners to draw conclusions about student behavior change. Fidelity data is needed to establish the relationship between behavior change and intervention (independent and dependent variable) (Barnett et al., 2014). Without fidelity data, researchers cannot be confident about the reasons for student behavior change. Also, fidelity is a key indicator of research quality, can strengthen a researcher’s findings, and controls for internal and external threats to validity (Harkema). For example, the accuracy of an intervention training provider follows the protocols can influence how teachers understand and implement an intervention (Wainer & Ingersoll, 2013). Without fidelity data on an intervention, it is unknown if a change in behavior was due to the intervention (Barnett et al., 2014).

Fidelity helps researchers to understand why or how an intervention was successful

(Wainer & Ingersoll, 2013).

Fidelity of Intervention X

The chart below explains the methods used to check the fidelity of the study. This table is based on Wainer and Ingersoll's (2013) Components of ASD parent training intervention fidelity.

Table 1. Methods Used to Check Fidelity of the Study

Fidelity Check	Explanation	Data Collection
Teacher training of intervention	How intervention training was delivered to teachers: frequency, length, number being trained	Researcher notes about the teacher training on DBR form with weekly notes, Intervention X, Maze Assessment, Daily Checklist
Intervention delivery and adherence to training	Extent to which a teacher implemented the prescribed intervention in the treatment setting.	Researcher notes about adherence to intervention through weekly observation. Checklist for teachers to follow specific steps for each day of the study DBR form agreement between teacher and researcher – checked weekly.

Theoretical Framework

Because it has been established throughout this chapter that thoughts and emotions impact a student's classroom behavior and engagement in learning, cognitive behavioral theory will be used to guide this study. Cognitive behavioral theory is based on two pre-existing theories, behavior theory and cognitive theory. In the late 1950s and

early 1960s, cognitive theory and behavior theory began to merge into a new form of therapy called cognitive-behavioral therapy (Beidel & Turner, 1986; Reitman & Drabman, 1997; Hupp et al., 2008). Cognitive behavioral theory is based on research that cognitive activity affects behavior, cognitive activity can be altered, and behavior can be changed through cognitive change. Also, the environment, overt behavior, and covert behavior all influence each other (Dozois & Dobson, 2001; Hupp et al., 2008). It is understood through cognitive behavioral theory that a student's thoughts, feelings, and environment are connected to behavioral health.

Behavior Theory

Behaviorism became a popular study in the early Twentieth Century with the leading psychologists being John Watson, Ivan Pavlov, and Burrhus Skinner. There are a variety of behavioral theories, but the idea of Behaviorism by Watson (1924) was one of the first comprehensive theories which argued that behavior should be observable. Observable behavior refers to overt behavior such as speaking or covert behavior such as thinking (Watson, 1924; Hupp et al., 2008). Watson also believed that it is important to consider environmental factors that influence behavior, and the conditioning process is the reason for much of behavior. Watson introduced the idea of conditioning behavior, particularly with fears. His research shows that fears are developed through associations, and as a result found additional ways to support or control behavior through associations (Watson, 1924; Hupp et al., 2008). Behavioral theory continued to develop by B.F. Skinner (1953) who focused much of his research on how consequences impact behavior responses. Skinner took this idea further by including positive and negative consequences

and evaluating how human behavior changes or repeats based on consequences. He argues that behavior followed by positive consequences is likely to repeat, and we learn best when actions are positively reinforced (Hupp et al., 2008). For example, positive reinforcement tends to strengthen behavior by adding a reward (Ollendick & King, 2000; Hupp et al., 2008). Also, a popular behavior theorist in the 1960s and 1970s was Bandura who examined the impact of social learning through modeling (Bandura, 1974). Bandura and Skinner believe that human behavior was shaped by external consequences, and that humans learn best through experiences and exposure (Hupp et al., 2008).

Cognitive Theory

Cognitive theory is the idea that thinking influences our emotional and behavioral experiences, and vice-versa (Beck, 1963). The idea being, if you can change your thoughts, then you can change your feelings and behavior (Brown & Prinstein, 2011). Aaron Beck was one of the first researchers to look at the role of cognition in psychopathology and is most well-known for his research on depression (Beck, 1963). He believed that depressive behavior is a result of cognitive distortions related to negative views of self, world, and future. Although originally used to support depressive behavior, this theory is now applied to additional mental health concerns such as anxiety and eating disorders. This theory was developed by Albert Ellis (1962) who researched how cognitions can bring about behavior and emotional consequences, and that thoughts, emotions, and behavior are part of a holistic process. Ellis and Beck acknowledge the importance of how cognition, environment and behavior are related. The following example shows how distorted cognitive thoughts can impact behavior and the

environment: If a host at a party excuses themselves to greet another guest, a person might react with cognitive thoughts such as “she thinks I’m boring” or “nobody likes talking with me” and start to withdraw from the situation. This withdrawal may cause others to avoid the person, which then validates the person’s distorted hypothesis (Hupp et al., 2008). Cognition, behavior, and environment can maintain distorted thinking (Beck, 1979).

Integration of Cognitive and Behavioral Theory

Cognitive behavioral theory has many complementary and competing theories (Hupp et al., 2008). During the 1970s, theorists continued to debate models of cognitive theory and behavioral theory, but some theorists began to integrate both theories evolving into cognitive behavioral theory. Behavioral therapists started including cognitive methods and cognitive therapists started including behavior (Hupp et al., 2008). The integration of these two theories turned into the common practice of cognitive behavioral therapy (CBT). Cognitive-behavioral therapists can choose from an increasingly large number of intervention options. D’Zurilla and Goldfried (1971) introduced ways for individuals to use cognitive behavioral methods in daily life. One of these is emotion-focused coping responses: a person’s attempt to change his or her own emotional response (such as meditation). Also, Meichenbaum (1977) wrote the book, *Cognitive-Behavior Modifications* which attempts to bridge the gaps between behavior therapy and cognitive therapy. He also introduces a model for adjusting inner speech to form behavior: modeling and practicing positive self-talk and praise (Hupp et al., 2008).

Cognitive Behavioral Theories Connection to this Study

Cognitive behavioral theory aligns with this study because the study's focus is on how student behavior can be impacted by an intervention related to thoughts and feelings. Students focus on their thoughts and feelings during the intervention: deep breathing, identifying an emotion, positive self-talk, and meditative listening. The study exemplifies how a focus on cognition may impact the behavior of engaging in a reading lesson or improving reading comprehension.

Summary

Chapter II provided the reader with a brief history of how schools have emotionally supported students through programming and staff. The chapter also reviewed the purpose of supporting emotions by understanding neuroscience related to emotions and the role emotions play in academic, social, and emotional success. A system of school support, MTSS, was reviewed, and an outline was included of specific strategies to build into MTSS such as SEL, CBT, and TIC. Since Intervention X was adapted for this study, the research behind each component of the intervention was reviewed. Methods of training teachers in Intervention X, social validity, and fidelity were outlined. Finally, Chapter II provided a brief overview of cognitive behavioral theory which is being used to guide this study. Chapter III will discuss the methodology that will be used to identify a simple, universal intervention that can improve student engagement and reading comprehension.

CHAPTER III

METHOD

Introduction

The need for schools to support students' emotional development continues to grow (Office of the Surgeon General, 2022). This support is especially needed because the academic, behavioral, social, emotional and mental health of students are connected (Bohanon & Wu, 2011). Emotions can impact a student's academic engagement, readiness to learn, work ethic, commitment, and overall school success (Elias et al., 1997; Taylor et al., 2017). Knowing that emotions affect how and what we learn, schools must address these critical pieces of education to support all students.

Schools have become the central place for supporting students' mental health, yet teachers are generally overworked and underprepared in the area of supporting mental health. Educators are faced with competing demands and are now under pressure to also support students' emotional development (Ko et al., 2008). Students need the help, but daily demands on teachers make this help very challenging. Further studies are needed to identify a simple, universal intervention that can improve student emotional readiness and lesson engagement with minimal teacher responsibility.

The purpose of this research was to determine the impact of a universal tier one self-regulation intervention on student engagement and reading comprehension. The intervention was rooted in cognitive behavioral therapy and included techniques related

to breathing, self-affirmation, meditative listening, and emotion labeling. The study sought to find a simple and effective intervention that was beneficial to students and school staff. Also, the study explored how students were impacted by a daily intervention through monitoring their engagement in learning and reading comprehension scores. Students would be able to use the intervention tool outside of school as well as apply it to a variety of situations. Finally, the study explored how teachers responded to the intervention through a satisfaction survey including ease in training and implementation. This emotional intervention was meant to be simple so that it could be applied to a variety of grades, content areas, student readiness, and staff experience.

Research Questions

1. How did an intervention affect a student's ability to engage in reading lessons?
2. What was the impact of an intervention on the reading comprehension of students who were identified as at risk of emotional regulation as measured by a systematic screening?
 - a. What was the impact of a researcher-adapted and teacher implemented five-minute whole group intervention on students reading comprehension as measured by Maze probes?
3. After receiving training in the intervention, to what extent did teachers implement the intervention with fidelity?
4. After teachers receive training in the intervention, what was the perceived social validity of the intervention?

Research Hypotheses

1. It was hypothesized that researcher-adapted and teacher-implemented intervention in the school environment would improve student engagement in a reading lesson.
2. It was hypothesized that the researcher-adapted and teacher-implemented intervention would improve the reading comprehension of students who are identified as at risk of emotional regulation.
 - a. It was hypothesized that student engagement and reading comprehension will improve at a higher rate after the intervention was implemented for multiple weeks.
3. It was hypothesized that after receiving training on how to implement the intervention in the school environment, that teachers were able to implement the intervention with a 90% fidelity rate.
4. It was hypothesized that the social validity of the intervention was higher than the acceptability rate of 52.5%.

Independent Variable

The independent variable in the study was a modified tier one cognitive behavioral therapy intervention called Intervention X. This researcher-adapted intervention was grounded in research based on the following intervention domains: breathing techniques, self-affirmation, meditative listening, and emotion labeling. The teachers received training on how to implement the intervention. Students participated in

the intervention on a bi-weekly basis. Weekly fidelity of implementation checks was completed by the researcher to ensure Intervention X was completed correctly.

Dependent Variables

1. Teachers completed a direct behavior rating (DBR) form every day for each student in the study. This study used the pre-developed, research-based target behavior DBR form. The DBR form measured student engagement in the reading lesson after Intervention X. The DBR form is found in Appendix A (Chafouleas et al., 2010).
2. The teacher had the option to informally write notes about observations of student engagement and reading comprehension. These notes were taken on the DBR form shown in Appendix A (Chafouleas et al., 2010).
3. Students completed a reading comprehension assessment each week to measure the effect of the intervention. A curriculum-based measurement (CBM) Maze assessment was used to measure reading comprehension. An example of a Maze assessment is in Appendix B (Intervention Central).
4. Social validity was measured by teachers completing an adapted version of the Intervention Rating Profile (IRP-15). This survey was collected at the beginning and the completion of the study to determine the overall acceptability of the intervention. The intervention survey can be found in Appendix C (ci3T, 2015).

Participants and Setting

Participant Selection Criteria

A total of five children were recruited for this study. To select participants for this study, convenience sampling and purposive sampling was used (Johnson & Christensen, 2012). The selection of participants started with convenience sampling because the researcher works at the school where the research took place. The research data was collected during the School's Summer Camp, which narrows the selection of students even further. The Summer Camp allowed for more flexibility in curriculum, interventions, and time, which is also related to the convenience sample. For purposive sampling, specific participant attributes were identified for the study. The attributes included: age, SRSS rating, and parent consent.

- *Age:* Child participants in the study were between the ages of seven and 12.
- *Student Risk Screening Scale - Internalizing and Externalizing (SRSS-IE):* Classroom teachers completed the SRSS-IE to identify students who were most at behavioral and emotional risk. The students who were most at risk were identified as potential study participants (Lane & Menzies, 2009).
- *Parent Consent:* Child participants in the study were required to obtain parental consent since they were under the age of 18.

Description of the Participants

Five met the criteria for the study. All participants attended the school where the study took place. Four of the participants were male and one of the participants was female. The age range of students was between seven and 12.

Setting

The study took place at a Catholic school in a large urban area of the Midwest. The school had 150 students in preschool through eighth grade. The school was comprised of Hispanic (95%) and African American (5%) students. The school's free-and-reduced lunch rate was 100%, and students who live in this urban area with low test scores were eligible for additional academic coaching and math and reading small group Title 1 services. The school population had 5% of students diagnosed learning disability and 35% of the student identified as English Language Learners. The school had a counselor who worked two-days a week, which allowed for 5% of the student population to receive counseling services. There was a greater need for counselors within the school.

The study took place at the school's six-week Summer Camp from the middle of June until the end of July. At the camp, students participated in academic, athletic, and fine arts activities. The camp was offered to all students at the school and open to families outside of the school. Families who participated in Summer Camp were required to pay \$100, and 35 students from preschool through eighth grade signed up for camp.

Institutional Review Board (IRB) and Parent Consent

To protect the rights and welfare of participants, IRB approval for Research with Human Subjects was obtained from Loyola University Chicago. Obtaining approval included a signed letter of consent from parents (see Appendix E) for students to be allowed to participate. The consent form included: (a) purpose of the study, (b) brief description of procedures used, (c) benefits of participation, (d) any potential risk, (e) participant confidentiality, (f) voluntary nature of the study, (g) contact information for

the researcher regarding questions about the study, (h) and signed consent from students' families to participate.

Materials

Intervention X Materials

Intervention X was purposefully adapted to have no tangible materials. By not using tangible materials, students would be able to transfer this intervention easily and quickly to a variety of settings. The intervention includes the following components:

- 3 rounds of deep breaths
- 3 things that you hear
- 2 emotions you are feeling
- 1 compliment to yourself
- 3 rounds of deep breath

The teacher had an intervention implementation guide that they used until they felt comfortable facilitating the intervention independently (see Appendix G). There was a poster in the classroom that displayed the intervention steps as a visual reminder to students while they learned the intervention steps.

Reading Lesson Materials

Students were taught a reading lesson after Intervention X with the goal of improving reading comprehension. To maintain reading lessons that are evidence-based, the teacher used the Scholastic Guided Reading Program. The goal of guided reading lessons was to teach reading comprehension (Pinnell & Fountas, 2010). Specific reading skills that students can gain from guided reading include word solving, finding

information, self-monitoring, summarizing, maintaining fluency, predicting, synthesizing, inferring, analyzing, and critiquing (Pinnell & Fountas, 2010). The Scholastic Guided Reading Program included lesson plans and materials for each lesson that correlated with the students' current reading levels. Since the Scholastic lessons were very detailed, and the Summer Camp lesson time was only 45 minutes, some parts of the lesson were removed. The comprehension portion of the lesson plan remained. Appendix H provides an example of the lesson for each day.

Data Collection Instrumentation

The Student Risk Screening Scale - Internalizing and Externalizing (SRSS-IE)

The SRSS-IE (see Appendix D) is a universal screener designed to identify students with signs of internalizing or externalizing behaviors. Examples of internalizing behaviors are shyness, anxiousness, and social engagement. Examples of externalizing behaviors are noncompliance, aggression, or defiance. The SRSS-IE tool identifies students who would benefit from additional support, provide teachers with support, and proactively support students with tier two and three interventions (Lane & Menzies, 2009). For this study, the SRSS-IE was used during the school year to identify students who are potential participants for the study during summer camp. The classroom teacher provided the SRSS-IE data in June 2022.

Direct Behavior Rating (DBR) Form

The teacher facilitating the intervention completed a direct behavior rating (DBR) form every day for each student in the study. The DBR form (see Appendix A) measured student engagement in the reading lesson after Intervention X (Chafouleas et al., 2009).

The DBR form was used during the weeks that Intervention X was used, and the weeks the intervention was not used to compare the intervention's impact on engagement. Also, the researcher completed a DBR form weekly during an observation and compare with the teacher's DBR score to obtain agreement scores.

DBR is an evidence-based practice that has been used in previous research to monitor the effectiveness of an intervention (University of Connecticut, 2010). The DBR form was chosen for because it is evidence-based, brief, and measures student behavior related to classroom engagement. The behaviors on the DBR form matched the study's research questions and the need to track student behavior on a daily basis. The form monitors the percent of time students show the following three behaviors: academically engaged behavior, respectful behavior, and disruptive behavior. These three behaviors are used within the DBR form because they are defensible, flexible, repeatable, and efficient which ensures the DBR can be used across a variety of settings and purposes (Christ et al., 2009). The options range from 0% (never) to 100% (always) and there is a space at the bottom for notes to be added by the teacher. Prior to the teacher using the DBR form, the researcher provided training about how to use the form by reviewing it and completing an example.

Teacher Anecdotal Notes

The teachers had the option to write weekly anecdotal notes for five minutes about participant engagement. These notes include teacher observations of each student's engagement in the reading lesson and change in reading comprehension. These notes were taken on the DBR form in the "notes" section as shown in Appendix A (Chafouleas

et al., 2009). The notes could be taken during the weeks that Intervention X was used, and the weeks the intervention was not used to compare the intervention's impact on engagement. Prior to teachers taking notes, the researcher provided examples about notes that could be written on the IRB form.

Curriculum-Based Measurement (CBM) Maze Assessment

Students completed a reading comprehension assessment each week to measure the effect of Intervention X. A curriculum-based measurement (CBM) Maze assessment was used to measure reading comprehension (Intervention Central). Maze passages measure reading comprehension and are timed. The Maze passage is usually about 300 words long. The first sentence is written completely, and every seventh word following the first sentence is to be correctly chosen. The assessment is taken silently, and students have a limited amount of time to choose their answer.

Prior to the administration of the Maze assessment, the student participants completed an example with the teachers before starting on their own. The goal of the practice was for students to understand how to complete the assessment, not reviewing for the correct answer. Appendix B shows an example of a Maze assessment. The Maze assessment was created using books from the Scholastic Guided Reading Program based on students' reading level. Contact the researcher if you would like to obtain all the Maze assessments used over the study.

Teacher Intervention Implementation Checklist

The researcher created a checklist (see Appendix F) to promote fidelity of the intervention. Teachers used a checklist every day to ensure that each step of the

intervention is followed. There were two different checklists: one for the weeks with the intervention, and one for the weeks without the intervention. The teacher placed a checkmark next to each step of the checklist once it was completed and signed the checklist each day.

Social Validity: Intervention Rating Profile (IRP-15)

Social validity is an assessment of whether intervention research goals are met and indicates perceived value or appropriateness of particular procedures (Wolf, 1978; Gresham, 1983). Social validity describes the perceived value or acceptability of a treatment, or intervention (Diller et al., 2013). It helps to determine if an intervention is relevant in everyday life to those participating in the study. Social validity should be assessed before and after the intervention (Lane et al., 2009). Assessing before helps to identify potential problems and determine buy-in of intervention, which could impact the fidelity.

To measure social validity, the teachers facilitating the intervention completed the Intervention Rating Profile-15 (IRP-15) (Witt & Elliott, 1985) before and after the study. The intervention survey can be found in Appendix C (ci3T, 2015). The IRP-15 is a common rating system for social validity that has been used previously to assess a teacher's perspective (Lane et al., 2009). The survey contains fifteen questions that were used to determine the acceptability of the intervention from the study (Martens et al., 1985). Answers were recorded using a six-point Likert scale and responses range from strongly disagree to strongly agree (Carter, 2010). A total score was calculated by adding all of the scores with the possible range of 15-90. The higher the score, the

higher the level of acceptability. A moderate level of acceptability is 52.5 (Ozdemir, 2008).

Study Design

A single subject case study approach using withdrawal treatment was used for this study. A case study is a form of qualitative research that focuses on a specific situation (or case) which is comprised of individuals, a group, or a defined sample (Porcino, 2016). A single subject case study consists of ongoing, consistent measures of the individual test subject (Porcino, 2016). This is due to the fundamental assumptions of single-case design that behavior takes place with an individual (Morgan & Morgan, 2008). Data collection, analysis, and presentation are conducted on individual data examining a person's behavior at different times. There are typically multiple subjects participating in the study. However, the data is collected individually, not as a group, so there is not an "average." However, researchers can make more broad conclusions if the independent variables effects are shown consistently, from multiple participants (Morgan & Morgan, 2008).

Withdrawal treatment design is the presentation and removal of an independent variable within a research study. It can also be called ABABAB because of the sequence that follows: (A) nontreatment, (B) treatment, (A) nontreatment, (B) treatment, (A) nontreatment, (B) treatment. This design method helps to determine the effect of the independent variable on behavior. The initial stage of withdrawal treatment (A) is called baseline. The purpose of baseline is to collect data without any manipulation of the dependent variable to obtain an accurate picture of behavior in its most naturalistic state.

After baseline data is collected, the intervention can be applied (B) and data collected on the impact of the independent variable. Next the study returns to baseline (A) to be certain that behavior change during the study was due to the variable. The withdrawal design allows the researcher to draw conclusions based on the initial treatment and removal of treatment (Morgan & Morgan, 2008).

This study collected baseline data regarding student engagement and reading comprehension during week one of the study, and Intervention X was applied in week two. The intervention was removed in week three, applied in week four, removed in week five, and applied in week six. The intervention was applied and withdrawn in order to determine if the effects on the dependent variable was due to Intervention X. The next section shows the procedure of how the intervention was applied, withdrawn, assessed, analyzed, and interpreted, and also shows the measures of social validity (Greene, 2007).

Procedure

Prior to implementing the intervention, teachers were trained on how to facilitate the intervention, reading lessons and Maze assessment, and how to complete the DBR form. These trainings allowed the researcher and teacher to practice facilitating the intervention and review the reading lesson plans. This training also allowed time to review how to complete the DBR form and discuss examples of how to take weekly anecdotal notes. Teachers learned how to use the implementation checklists to ensure each component of the study was completed every day. The IRP-15 was also completed by the teachers to provide feedback on acceptability of the intervention.

After the IRP-15 was collected and teacher training was completed, the study began. The table below outlines the procedures for each day of the study. It shows the withdrawal treatment design used by the intervention being applied and withdrawn depending on the week. The appendix contains the examples and guides for facilitating each component of the study.

Table 2. Procedures for Each Day of the Study

	Tuesday	Wednesday	Thursday
Prior to study	<ul style="list-style-type: none"> Teachers trained on all components of the study: Intervention, reading lesson, DBR form, note taking, Maze assessment, and daily checklist Teacher survey about intervention: IRP-15 		
Week 1 <i>Baseline</i>	<ul style="list-style-type: none"> Reading lesson DBR form 	<ul style="list-style-type: none"> Reading lesson DBR form <p><i>Fidelity Check: Researcher will observe lesson and complete DBR form.</i></p>	<ul style="list-style-type: none"> Reading lesson Maze assessment DBR form Teacher notes on DBR form
Week 2 <i>Intervention</i>	<ul style="list-style-type: none"> Students learn intervention Intervention Reading lesson DBR form 	<ul style="list-style-type: none"> Intervention Reading lesson DBR form <p><i>Fidelity Check: Researcher will observe intervention and reading lesson, and complete DBR form.</i></p>	<ul style="list-style-type: none"> Intervention Reading lesson Maze assessment DBR Form Teacher notes on DBR form
Week 3 <i>Return to Baseline</i>	<ul style="list-style-type: none"> Reading lesson DBR form 	<ul style="list-style-type: none"> Reading lesson DBR form <p><i>Fidelity Check: Researcher will observe lesson and complete DBR form.</i></p>	<ul style="list-style-type: none"> Reading lesson Maze assessment DBR Form Teacher notes on DBR form
Week 4 <i>Intervention</i>	<ul style="list-style-type: none"> Intervention Reading lesson DBR form 	<ul style="list-style-type: none"> Intervention Reading lesson DBR form <p><i>Fidelity Check: Researcher will observe intervention and reading lesson, and complete DBR form.</i></p>	<ul style="list-style-type: none"> Intervention Reading lesson Maze assessment DBR Form Teacher notes on DBR form

Week 5 <i>Return to Baseline</i>	<ul style="list-style-type: none"> • Reading lesson • DBR form 	<ul style="list-style-type: none"> • Reading lesson • DBR form <p><i>Fidelity Check: Researcher will observe lesson and complete DBR form.</i></p>	<ul style="list-style-type: none"> • Reading lesson • Maze assessment • DBR Form • Teacher notes on DBR form
Week 6 <i>Intervention</i>	<ul style="list-style-type: none"> • Intervention • Reading lesson • DBR form 	<ul style="list-style-type: none"> • Intervention • Reading lesson • DBR form <p><i>Fidelity Check: Researcher will observe intervention and reading lesson, and complete DBR form.</i></p>	<ul style="list-style-type: none"> • Intervention • Reading lesson • Maze assessment • DBR Form • Teacher notes on DBR form
<i>After study</i>	<ul style="list-style-type: none"> • Teacher completes survey about intervention: IRP-15 		

Intervention Fidelity

Intervention fidelity refers to “the methodological strategies used to monitor and enhance the reliability and validity of behavioral interventions” (Bellg et al., 2004, p. 443). Fidelity data is needed to establish the relationship between behavior change and intervention (independent and dependent variable) (Barnett et al., 2014). Without fidelity data on an intervention, it is unknown if a change in behavior was due to the intervention (Barnett et al., 2014). Fidelity helps researchers to understand why or how an intervention was successful (Wainer & Ingersoll, 2013).

There are various types of intervention fidelity, and this study focused on treatment delivery adherence fidelity (Wainer & Ingersoll, 2013). This form of fidelity focuses on ensuring the intervention procedures are followed as planned throughout the entire study (Horner et al., 2006). To maintain fidelity, teachers completed daily intervention checklists (see Appendix F) to ensure the correct steps were implemented. These checklists were reviewed and scored for fidelity upon completion of the study. The

researcher conducted observations of the intervention in practice and completed DBR forms, which were reviewed at the end of the study. The goal of these protocols was to have a well-rounded review of the intervention process.

Intervention Implementation Checklists

Each day, a checkmark was placed next to each step of the checklist to represent that the step of the intervention was completed (see Appendix F), and the researcher calculated a percentage that represents the fidelity of implementation. The number of steps followed on all the checklists was divided by the total number of steps for the checklists and then multiplied by 100. The resulting percentage represented the daily intervention implementation fidelity score:

$$\text{Daily intervention implementation fidelity} = \frac{\text{Number of steps followed on the checklist} \times 100}{\text{Total number of steps on the checklist}}$$

After the completion of the study, the intervention implementation checklists were reviewed for fidelity. The average of the implementation fidelity scores was calculated after the study was completed. The sum of the daily intervention implementation fidelity scores was divided by the number of days of the intervention. This resulting percentage represents the overall fidelity of intervention implementation:

$$\frac{\text{Sum of daily intervention implementation fidelity scores}}{\text{Number of days of the intervention}}$$

Interobserver Agreement

Interobserver agreement is the percentage of time during a study that two observers agree on the scoring of a variable in the study (Horner et al., 2005). This method of measurement is commonly used when obtaining a score on the quality of

behavioral data collected and strengthens the reliability of data collected (Watkins & Pacheco, 2000). The researcher for this study conducted interobserver agreement checks during 33% of the intervention implementation and data collection procedures using the DBR form.

DBR Inter-Rater Reliability

To address inter-rater reliability, the researcher reviewed 33% of the intervention to ensure that the engagement behaviors (DBR Form, see Appendix A) are being scored similarly. The researcher's DBR score were compared to the teacher's DBR score for each student. A DBR score agreed if the researcher and teacher rated the engagement within two number above or below on the scale. The interobserver agreement for engagement of each student was scored by the number of agreements for the engagement scoring of each student divided by the total number of observations and multiplied by 100:

$$\text{Interobserver agreement for student engagement} = \frac{\text{number of agreements on behavior scoring}}{\text{Total number of observations}} \times 100$$

After the completion of the study, the average of the interobserver agreement for student engagement was calculated. The sum of the interobserver agreement for student engagement scores was divided by the number of scores that will be collected:

$$\frac{\text{Sum of interobserver agreement scores}}{\text{Number of scores that were collected}}$$

Data Analysis

Data analysis was completed at the end of the study once all data has been collected. The data sources included: (a) the direct behavior rating (DBR) form that

documented the level of student engagement; (b) the teacher anecdotal notes that documented additional information about participant observations; (c) curriculum-based measurement (CBM) Maze Assessment which measured change in student reading comprehension; and (d) intervention rating profile (IRP-15) to measure social validity with teachers. The procedures for analysis of each component are outlined in the following sections:

Direct Behavior Rating (DBR) Form

The data from the direct behavior rating form (see Appendix A) was transferred into an excel spreadsheet on to track the change of each student's engagement. To analyze the withdrawal treatment design, the researcher created a line graph using individual DBR results to show data of baseline and intervention weeks. Next, the percent of overlapping data was calculated to compare data from the baseline and intervention weeks (Wilbert, 2021). Below is an example of how individual student data was graphed to show if there is a shift in engagement because of the intervention.

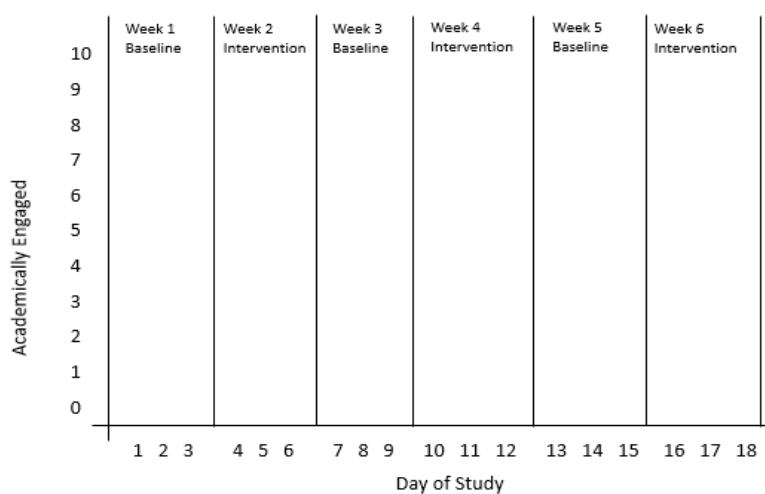


Figure 1. Is there a shift in engagement because of the intervention?

Curriculum-Based Measurement (CBM) Maze Assessment

Students complete a Maze Assessment at the end of each week to measure reading comprehension (see Appendix B). The results of the assessment were transferred into an Excel spreadsheet to track the change of each student's reading comprehension. To analyze the withdrawal treatment design, the researcher created a line graph using individual Maze Assessment results to show data of baseline and intervention weeks. Next, the percent of overlapping data was calculated to compare data the baseline and intervention weeks (Wilbert, 2021). Below is an example of how individual student data was graphed to show if there is a shift in reading comprehension because of the intervention.

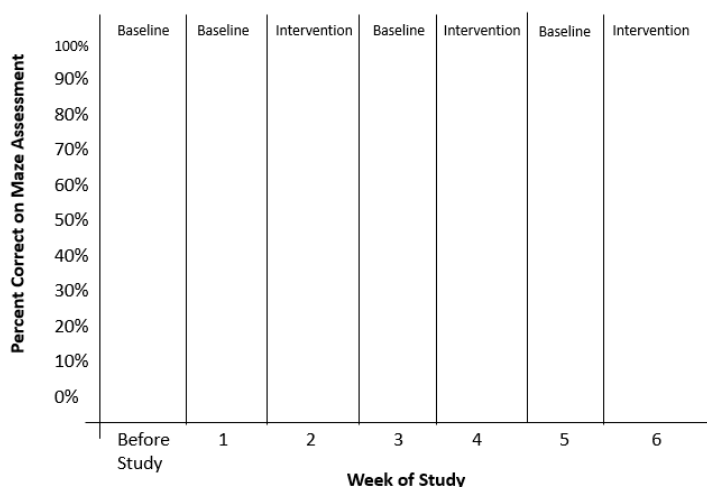


Figure 2. Is there a shift in reading comprehension because of the intervention?

Teacher Anecdotal Notes

The teachers had the option to write weekly anecdotal notes for five minutes about participant engagement during the reading lesson and intervention. During the study, the teacher did not provide notes about the student participants. If teacher had

provided notes, open coding techniques would have been used to identify general themes and subthemes that emerged from the notes (Merriam, 2009). These themes would have been correlated with the DBR and Maze assessment scores to further insight about student engagement and reading comprehension.

Intervention Rating Profile (IRP-15)

Prior to the study, the teacher implementing the intervention was given the IRP-15 Pre-Intervention survey (see Appendix C). At the end of the study, the teacher was given the IRP-15 post-intervention survey. The pre- and post-intervention survey was scored by adding the answers from the fifteen questions to obtain the total score. The total score indicates social validity of the study before and after the intervention. There were two teachers facilitating the intervention, so the social validity data collected will be from two teachers.

Summary

Chapter III highlighted the research design and data collection methods used in the study. A single subject case study approach using withdrawal treatment was used to evaluate the effects of an intervention on engagement in a reading lesson and reading comprehension. Participants for were chosen using convenience and purposive sampling methods. Data was collected using a DBR form, teacher notes, and Maze Assessments. Implementation fidelity was measured using observations and checklists, and interobserver reliability checks which were conducted during 33% of the study. Social validity was measured using the IRP-15 survey at the beginning and end of the study. Results of all these measures were scored, analyzed, and recorded with the use of

calculations for each tool and spreadsheets to combine and organize the results. Chapter IV shares the results of the data collection and Chapter V provides an analysis of the data and study results.

CHAPTER IV

ANALYSIS OF DATA

Introduction

The purpose of this research was to determine the impact of a universal tier one self-regulation intervention on student engagement and reading comprehension. The intervention was rooted in cognitive behavioral therapy and included techniques related to breathing, self-affirmation, meditative listening, and emotion labeling. The researcher sought to find a simple and effective intervention that was beneficial to students and school staff. The study explored how students were impacted by a daily intervention through monitoring their engagement in learning and reading comprehension scores. The intervention was a tool students may use outside of school in a variety of situations. In addition, the study explored how teachers responded to the intervention through a satisfaction survey, including ease in training and implementation. This intervention was meant to be simple to apply to various grades, content areas, student readiness, and staff experiences.

Chapter IV will discuss the study outcomes within two sections. The first section will explain the study's independent and dependent variables. The second section will answer each research question by using the methods and instruments described in Chapter III. Results for inter-rater reliability and fidelity of the study will be included.

Independent Variable

The independent variable, Intervention X, was a modified universal tier one self-regulation intervention rooted in cognitive behavioral therapy. This researcher-adapted intervention was based on breathing techniques, self-affirmation, meditative listening, and emotion labeling. During the study, the teachers received training on how to implement the intervention. Weekly validity checks were completed by the researcher to ensure the intervention was completed correctly. Students participated in the intervention on a bi-weekly basis using a withdrawal of treatment design.

Dependent Variables

1. *Direct Behavior Rating (DBR) Form:* Teachers completed a direct behavior rating form every day for each student in the study. The DBR form measured student engagement in the reading lesson after Intervention X. The DBR form is found in Appendix A (Chafouleas et al., 2010).
2. *Teacher Anecdotal Notes:* The teachers had the option to informally take notes for five minutes once a week about observations of student engagement and reading comprehension. These notes were taken on the DBR form shown in Appendix A (Chafouleas et al., 2010).
3. *Curriculum-Based Measurement (CBM) Maze Assessment:* Maze assessments are timed measures of reading comprehension. Students completed a reading comprehension assessment each week to measure the effect of the intervention. An example of a Maze assessment is in Appendix B (Intervention Central).

4. *Intervention Survey*: Social validity was measured by teachers completing the Intervention Rating Profile-15. The IRP-15 was collected at the beginning and at the completion of the study to determine the overall acceptability of the intervention. The intervention survey can be found in Appendix C (Carter & Wheeler, 2019).

Research Question 1

The first research question in the study was: How did an intervention affect a student's ability to engage in reading lessons? It was hypothesized that the researcher-adapted and teacher-implemented intervention in the school environment would improve student engagement in a reading lesson.

Student engagement was scored using the DBR form. The instrument monitors the percentage of time students show the following three behaviors: academically engaged behavior, respectful behavior, and disruptive behavior. The following sections provide scoring for each of these areas, and an overall DBR form score.

Academic Engagement Scores

Figure 3 shows the daily academic engagement scores for each participant. The DBR % score is plotted for each day of the study. The varying colors represent the different participants. The difference in scoring between baseline weeks and intervention weeks is separated by vertical black lines.

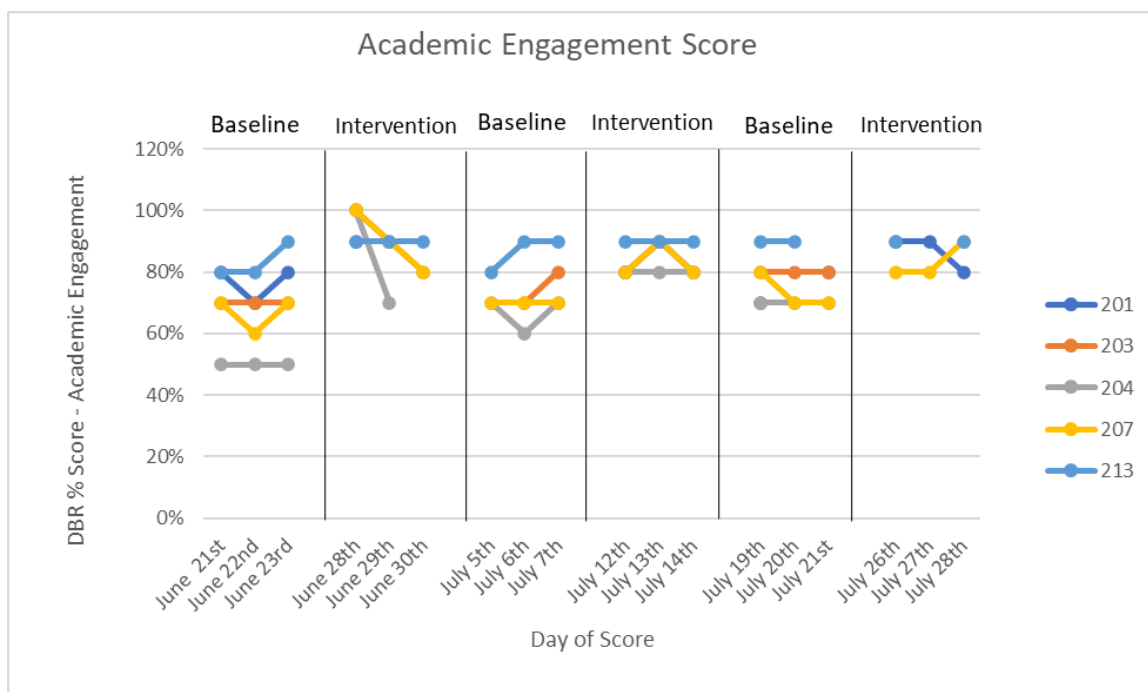


Figure 3. Academic Engagement Scores

Table 3 shows each student's weekly average score for academic engagement. Table 3 also includes the weekly mean score for all student participants along with the standard deviation and number of students who participated each week.

Table 3 shows that every student's weekly academic engagement average was higher during the week that included the intervention. For example, participant 207's scores during baseline weeks were 67%, 70%, and 73% and 207's scores during intervention weeks were 90%, 87%, and 87%. One participant (213) had the same average comparing week five and six, both scores being 90%. Further, when looking at the overall weekly mean scores for participants, the intervention week scores are higher than the baseline weeks. The weekly standard deviation scores are also listed, showing

that most scores fall close to the mean scores. Since the student academic engagement scores were higher during intervention weeks, the hypothesis is accepted.

Table 3. Student Averages for Academic Engagement

	Student Averages for Academic Engagement Score					
Research ID	Week 1 Baseline	Week 2 Intervention	Week 3 Baseline	Week 4 Intervention	Week 5 Baseline	Week 6 Intervention
201	77%	90%	Absent	87%	75%	87%
203	70%	90%	75%	85%	80%	Absent
204	50%	85%	67%	80%	70%	Absent
207	67%	90%	70%	87%	73%	87%
213	87%	90%	87%	90%	90%	90%
Weekly Mean Score	70%	89%	74%	86%	76%	88%
Weekly Standard Deviation	0.136638	0.022361	0.088081	0.037014	0.078294	0.017321
N	5	5	4	5	5	3

Respectful Behavior Scores

Figure 4 shows the daily respectful behavior scores for each participant. The DBR % score is plotted for each day of the study. The varying colors represent the different participants. The difference in scoring between baseline weeks and intervention weeks is separated by vertical black lines.



Figure 4. Respectful Behavior Scores

Table 4 shows each student's weekly average score for respectful behavior. Table 4 also includes the weekly mean score for all student participants along with the standard deviation and number of students who participated each week.

Table 4 shows that every student's weekly respectful behavior average was higher or equal during the week that included the intervention. For example, participant 207's scores during baseline weeks were 77%, 80%, and 87% and 207's scores during intervention weeks were 90% every week. Further, when looking at the overall weekly mean scores for participants, the intervention week scores were higher than the baseline weeks. The weekly standard deviation scores are also listed, showing that most scores fall close to the mean scores. Since the student respectful behavior scores were higher during intervention weeks, the hypothesis is accepted.

Table 4. Student Averages for Respectful Behavior

	Student Averages for Respectful Behavior					
Research ID	Week 1 Baseline	Week 2 Intervention	Week 3 Baseline	Week 4 Intervention	Week 5 Baseline	Week 6 Intervention
201	77%	90%	Absent	90%	90%	90%
203	80%	93%	85%	90%	87%	Absent
204	67%	85%	73%	83%	70%	Absent
207	77%	90%	80%	90%	87%	90%
213	90%	97%	93%	93%	90%	90%
Weekly Mean Score	78%	91%	83%	89%	85%	90%
Weekly Standard Deviation	0.08228	0.044159	0.084212	0.037014	0.084083	0
N	5	5	4	5	5	3

Disruptive Behavior

Figure 5 shows the daily disruptive behavior scores for each participant. The DBR % score is plotted for each day of the study. The varying colors represent the different participants. The difference in scoring between baseline weeks and intervention weeks is separated by vertical black lines.

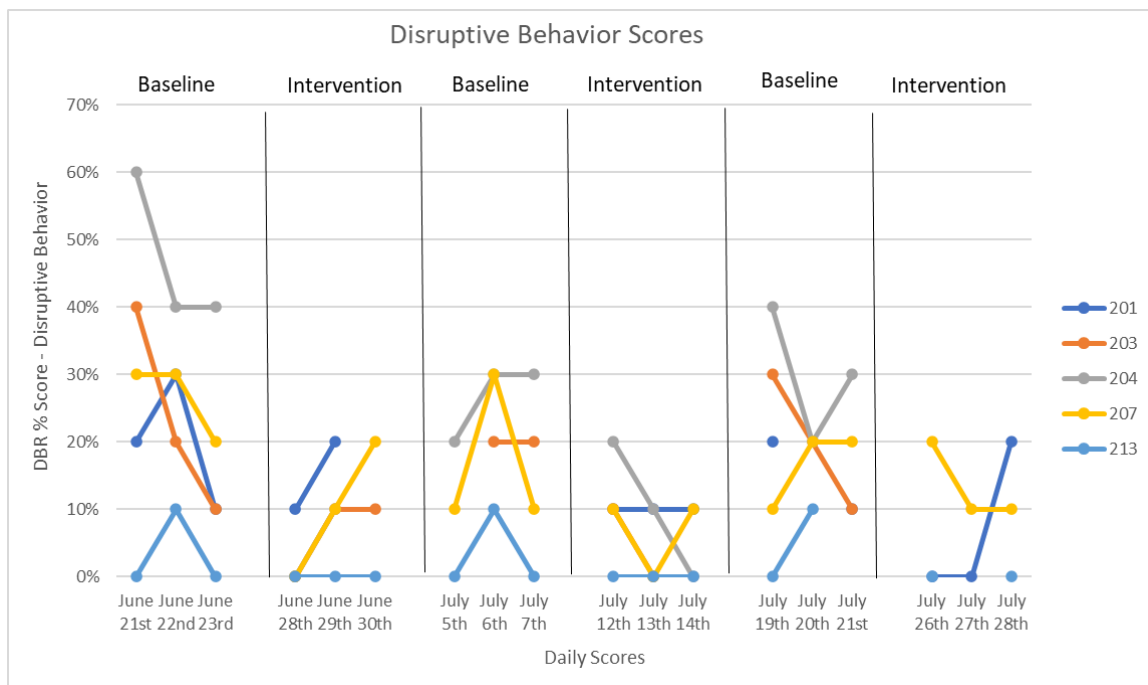


Figure 5. Disruptive Behavior Scores

Table 5 shows each student's weekly average score for disruptive behavior. Table 5 also includes the weekly mean score for all student participants along with the standard deviation and number of students who participated each week.

Table 5 shows that every student's weekly disruptive behavior average was lower during the week that included the intervention. For example, participant 207's scores during baseline weeks were 27%, 27%, and 27% and participant scores during intervention weeks were 10%, 7% and 13%. Further, when looking at the overall weekly mean scores for participants, the intervention week scores were lower than the baseline weeks. The weekly standard deviation scores are also listed, showing that most scores fall close to the mean scores. Since the student disruptive behavior scores were lower during intervention weeks, the hypothesis is accepted.

Table 5. Student Averages for Disruptive Behavior

	Student Averages for Disruptive Behavior					
Research ID	Week 1 Baseline	Week 2 Intervention	Week 3 Baseline	Week 4 Intervention	Week 5 Baseline	Week 6 Intervention
201	20%	15%	absent	10%	15%	7%
203	23%	7%	20%	5%	20%	absent
204	47%	5%	27%	10%	30%	absent
207	27%	10%	17%	7%	17%	13%
213	3%	0%	3%	0%	5%	0%
Weekly Mean Score	24%	7%	17%	6%	17%	7%
Weekly Standard Deviation	0.157797	0.055946	0.100789	0.041593	0.090167	0.065064
N	5	5	4	5	5	3

Overall DBR Scores

Table 6 shows the weekly mean score for the DBR categories (academic engagement, respectful behavior, and non-disruptive behavior) and the average scores for baseline and intervention weeks. In order to obtain the overall average DBR scores to compare baseline and intervention weeks, the disruptive behavior percentages have been subtracted from 100% in order to obtain the non-disruptive behavior weekly mean score.

Table 6 shows the overall average DBR scores were higher during the intervention weeks. The hypothesis for question #1 is accepted, because the engagement scores are higher during intervention weeks.

Table 6. DBR Average Scores

	DBR Average Scores					
	Week 1 Baseline	Week 2 Intervention	Week 3 Baseline	Week 4 Intervention	Week 5 Baseline	Week 6 Intervention
Academic Engagement Weekly Mean Score	70%	89%	74%	86%	76%	88%
Respectful Behavior Weekly Mean Score	78%	91%	83%	89%	85%	90%
Non-Disruptive Behavior Weekly Mean Score	76%	93%	83%	94%	83%	93%
Average	75%	91%	80%	90%	81%	90%

Teacher Anecdotal Notes

The teachers had the option to write weekly anecdotal notes for five minutes about participant engagement. The purpose of these notes was to provide any additional information about a student that would be helpful to understand their engagement further. During the study, the teacher did not write any anecdotal notes related to the student participants.

Interobserver Agreement: DBR Inter-Rater Reliability

Interobserver agreement is the percentage of time during a study that two observers agree on the scoring of a variable in the study (Horner et al., 2005). Interobserver agreement scores are considered adequate and satisfactory when at least 70%- 80% (Artman et al., 2012). The researcher for this study conducted interobserver agreement checks during 33% of the intervention implementation and data collection procedures using the DBR form. The DBR score of the researcher was compared to the

teacher's DBR score for each student. A DBR score agreed if the researcher and teacher rated the engagement within two numbers above or below on the scale. The interobserver agreement for engagement of each student was scored by the number of agreements for the engagement scoring of each student divided by the total number of observations scored and multiplied by 100:

$$\text{Interobserver agreement for student engagement} = \frac{\text{Number of agreements on behavior scoring}}{\text{Total number of observations}} \times 100$$

After the completion of the study, the average of the interobserver agreement for student engagement was calculated. The sum of the interobserver agreement for student engagement scores was divided by the number of scores that were collected:

$$\frac{\text{Sum of interobserver agreement scores for student engagement}}{\text{Number of scores that were collected}}$$

Table 7 outlines the results of interobserver agreement scores for each of the five participants for the three behaviors within the DBR form. The overall average for each DBR behavior is also included.

Table 7 displays inter-observer agreement was highest with participant 201, 203, and 213. The inter-observer agreement was lower for participants 204 and 207.

Agreement was highest with teacher and researcher for observation of respectful behavior at 92% agreement and disruptive behavior at 89% agreement, and lowest for academic engagement at 77% agreement. These scores are considered an acceptable interobserver agreement because the mean scores are at least 70%-80% in agreement.

Table 7. Inter-Observer Agreement Scores

	Interobserver Agreement Scores		
Research ID			
201	100%	100%	100%
203	80%	100%	100%
204	60%	60%	80%
207	66%	100%	67%
213	83%	100%	100%
Mean	77%	92%	89%

Research Question 2

The second research question had two parts. The first part focused on students who are identified as at-risk, and the second part applied to all students in the study:

- What was the impact of an intervention on the reading comprehension of students who were identified as at-risk of emotional regulation as measured by a systematic screening?
- What was the impact of a researcher-adapted and teacher-implemented five-minute whole group intervention on students reading comprehension as measured by Maze probes?

It was hypothesized that the researcher-adapted and teacher-implemented intervention would improve the reading comprehension of students who are identified as at-risk of emotional regulation. It was also hypothesized that student engagement and reading comprehension would improve at a higher rate after the intervention was implemented during the study's six-week period.

SRSS-IE Scores

Table 8 shows the SRSS-IE scores for the students who participated in the research study. The score color means – red - high risk, yellow - moderate risk, and green - low risk. The SRSS-E column rates external behaviors and the SRSS-I column rates internal behaviors.

Table 8 shows that one student (participant 201) who participated in the study displayed high risk behavior. Three additional participants displayed moderate risk behaviors (participants 204, 207 and 213). These four participants were considered to be at-risk within the study.

Table 8. SRSS-IE Scores

Research ID	SRSS-IE Scores	
	SRSS-E Score	SRSS-I Score
201	13	1
203	2	0
204	8	3
207	5	4
213	0	5

Reading Comprehension Results for At-Risk Participants

Figure 6 shows the results to part one of research questions #2: how at-risk student's reading comprehension changed throughout the research study. This graph shows the CBM Maze Scores for each at-risk participant during each week of the study. The difference in scoring between baseline weeks and intervention weeks is separated by vertical black lines. Table 9 that follows includes the exact CBM Maze Scores for the at-risk students.

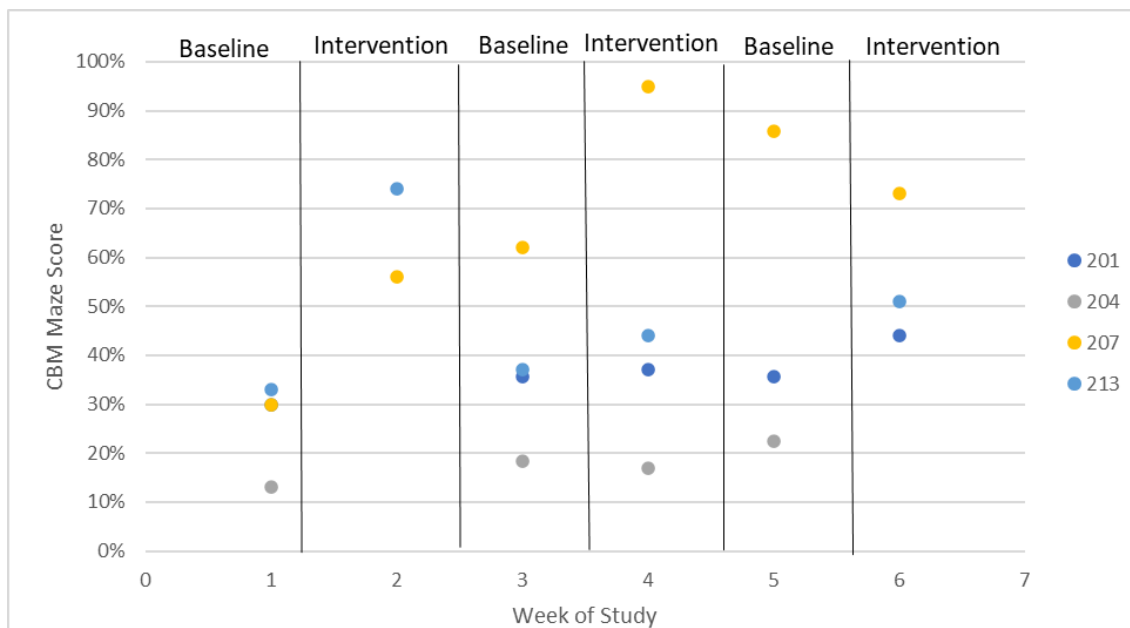


Figure 6. Reading Comprehension Results for At-Risk Participants

Table 9 shows that all students identified as at-risk improved their reading comprehension scores from week one to week six. For example, participant 213's comprehension score fluctuated but overall improved from 33% in week one to 51% correct in week six. The mean score of participants improved from 37% to 56%. Also, participants scored higher on reading comprehension during weeks with the intervention as compared to baseline weeks. Since all students identified as at-risk improved between their first datapoint to the last, the hypothesis is accepted.

Table 9. Reading Score Averages for At-Risk Participants

Reading Score Averages for At-Risk Participants						
Research ID	Week 1 Baseline	Week 2 Intervention	Week 3 Baseline	Week 4 Intervention	Week 5 Baseline	Week 6 Intervention
201	30%	absent	35%	37%	35%	44%
204	13%	absent	18%	17%	22%	absent
207	30%	56%	62%	95%	85%	73%
213	33%	74%	37%	44%	absent	51%
Mean	37%	65%	38%	48%	48%	56%
Standard Dev.	0.091104	0.127279	0.179457	0.332001	0.33337	0.151327

Reading Comprehension Results for All Students Participants

Figure 7 shows the results to part two of research questions #2: how reading comprehension scores for all student participants changed throughout the research study. This graph shows the CBM Maze Scores for each participant during each week of the study. The difference in scoring between baseline weeks and intervention weeks is separated by vertical black lines. Table 10 that follows includes the exact CBM Maze Scores for all students.

Table 10 shows that all student participants improved their reading comprehension scores from week one to week six. For example, participant 207's scores improved from 30% during week one to 73% during week six. The mean score of participants improved from 25% to 56%. Also, participants scored higher on reading comprehension during weeks with the intervention. Since all students' reading comprehension scores improved, the hypothesis is accepted.

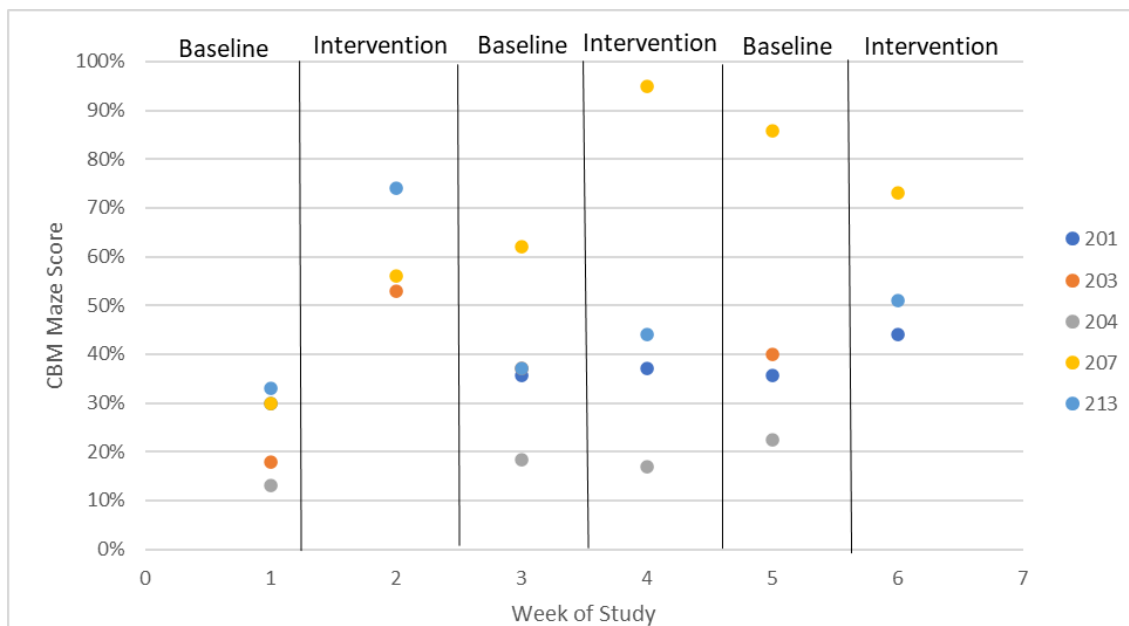


Figure 7. Reading Comprehension Results for All Participants

Table 10. Reading Comprehension Results for All Participants

Research ID	Reading Score Averages for All Participants					
	Week 1 Baseline	Week 2 Intervention	Week 3 Baseline	Week 4 Intervention	Week 5 Baseline	Week 6 Intervention
201	30%	absent	35%	37%	35%	44%
203	18%	53%	37%	absent	40%	absent
204	13%	absent	18%	17%	22%	absent
207	30%	56%	62%	95%	85%	73%
213	33%	74%	37%	44%	absent	51%
Mean	25%	61%	38%	48%	45%	56%
Standard Dev.	0.0875	0.11357	0.15551	0.33200	0.27510	0.15132

Research Question 3

The third research question of the study was: After receiving training in the intervention, to what extent did teachers implement this intervention with fidelity? It was

hypothesized that after receiving training on how to implement the intervention in the school environment, teachers would be able to implement the intervention with a 90% fidelity rate.

Intervention fidelity refers to “the methodological strategies used to monitor and enhance the reliability and validity of behavioral interventions” (Bellg et al., 2004, p. 443). In order to maintain fidelity, the teacher completed daily intervention checklists (see Appendix G) to ensure the correct steps were implemented. The researcher conducted observations of the intervention in practice to ensure each component was completed as designed. Next, the researcher calculated a percentage that represents the fidelity of implementation using the formula below:

$$\text{Daily intervention implementation fidelity} = \frac{\text{Number of steps followed on the checklist}}{\text{Total number of steps on the checklist}} \times 100$$

After the completion of the study, the average of the implementation fidelity scores were calculated. The sum of the daily intervention implementation fidelity scores was divided by the number of days of the intervention. This resulting percentage represented the overall fidelity of intervention implementation:

$$\frac{\text{Sum of daily intervention implementation fidelity scores}}{\text{Number of days of the intervention}}$$

Table 11 outlines the results for research question #3 about fidelity of implementation during intervention weeks. Weeks two, four, and six are the weeks when the intervention was implemented. The researcher also conducted an observation of the intervention each week of implementation. The overall average for fidelity during intervention weeks is also included.

Table 11 reveals that teachers and researcher observation scores were all 100%. This score is a higher percentage than the 90% hypothesized fidelity. The hypothesis for question #3 was accepted, because the fidelity scores were all over 90%.

Table 11. Fidelity Scores for Implementation of the Intervention

	Fidelity Scores for Implementation of the Intervention		
	Week 2 Intervention	Week 4 Intervention	Week 6 Intervention
Teacher #1	100%	100%	100%
Teacher #2	100%	100%	100%
Researcher Observation	100%	100%	100%
Total	100%	100%	100%

Research Question 4

The fourth research question for the study was: After teachers receive training in the intervention, what was the perceived social validity of the intervention? It is hypothesized that the social validity of the intervention would be higher than the acceptability rate of 52.5%.

Social validity is an assessment of whether intervention research goals are met and indicates perceived value or appropriateness of particular procedures (Wolf, 1978; Gresham, 1983). Specifically, social validity describes the perceived value or acceptability of a treatment, or intervention (Diller et al., 2013). To measure social validity, the teachers who facilitated the intervention completed the Intervention Rating Profile-15 (IRP-15) (Witt & Elliott, 1985) before and after the study (see Appendix C).

The IRP-15 survey contains 15 questions that were used to determine the acceptability of the intervention (Martens et al., 1985).

Answers were recorded using a six-point Likert scale and responses range from strongly disagree to strongly agree (Carter, 2010). A total score was calculated by adding all of the scores with the possible range of 15-90. The higher the score, the higher the level of acceptability. A moderate level of acceptability is 52.5 (Ozdemir, 2008).

Table 12 outlines the results for research question #4 about the social validity of the intervention. It includes the IRP-15 questions, and the pre-intervention and post-intervention scores for the two teachers who implemented the intervention. The overall average for social validity is also included at the bottom of Table 12.

Table 12 shows that both teachers' acceptability score of the intervention grew between pre-intervention and post-intervention. Teacher #1's score grew by 2 points, which was a 3% change and Teacher #2's score grew by 13 points, which was an 18% change. The teacher who started with the lower social validity score showed more of an increase in acceptability. There was an increase in social validity between both teachers. The mean score post-intervention was 78. Both teachers rated the intervention above 52.5 which means they perceived this intervention as effective and efficient for supporting student engagement. The hypothesis for question #4 regarding social validity is accepted because the teachers' IRP-15 scores were above 52.5.

Table 12. IRP-15 Scores

	IRP-15 Scores			
	Pre- Intervention Score Teacher #1	Post- Intervention Score Teacher #1	Pre- Intervention Score Teacher #2	Post- Intervention Score Teacher #2
This would be an acceptable intervention for the child's needs	5	6	4	5
Most teachers would find this intervention appropriate for children with similar needs	5	6	3	5
This intervention should prove effective in supporting the child's needs	6	5	4	4
I would suggest the use of this intervention to other teachers	5	6	3	4
The child's needs are severe enough to warrant use of this intervention	4	5	4	4
Most teachers would find this intervention suitable for the needs of this child.	5	6	3	5
I would be willing to use this intervention in the classroom setting	6	6	4	5
This intervention would not result in negative side effects for the child	5	6	5	6
This intervention would be appropriate for a variety of children	6	6	5	6
This intervention is consistent with those I have used in classroom settings	5	4	3	4

The intervention is a fair way to handle the child's needs	5	5	5	5
The intervention is reasonable for the needs of the child	6	5	4	5
I like the procedures used in this intervention	6	6	5	5
This intervention would be a good way to handle this child's needs	6	5	4	5
Overall, this intervention would be beneficial for the child.	6	6	4	5
Total Score	81	83	60	73
% Change from pre and post observation score		3%		18%

Summary

Chapter IV provided the results of the research questions and hypothesis for this study. The results show that the intervention is connected to higher levels of comprehension, lower levels of perceived classroom disruption, higher levels of perceived student engagement, and high levels of social validity for teachers. The next chapter will provide a discussion about the results of the study. The discussion will include limitations, implications, and suggested directions for future research.

CHAPTER V

DISCUSSION

Introduction

The following sections within Chapter V describe the study and discuss the Chapter IV analysis as it relates to the research questions. Chapter V then looks at implications for practice based on the research. Lastly, the study's limitations and suggestions for future research are stated.

Summary of the Study

The purpose of this research was to determine the impact of a universal tier one self-regulation intervention on student engagement and reading comprehension. The intervention was rooted in cognitive behavioral therapy and included techniques related to breathing, self-affirmation, meditative listening, and emotion labeling. The researcher sought to find a simple and effective intervention that was beneficial to students and school staff. The study explored how students were impacted by a daily intervention through monitoring their engagement in learning and reading comprehension scores. This intervention was a tool students may use outside of school in a variety of situations. In addition, the study explored how teachers responded to the intervention through a satisfaction survey, including ease in training and implementation. This intervention was meant to be simple to apply to various grades, content areas, student readiness, and staff experiences.

To select participants for this study, convenience and purposive sampling were used (Johnson & Christensen, 2012). The selection of participants started with convenience sampling because the researcher worked at the school where the research took place at the time of research. The research data was collected during the school's six-week summer camp, which narrowed the selection of students even further. The summer camp allowed for more flexibility in curriculum, interventions, and time, which is also related to the convenience sample. For purposive sampling, specific participant attributes were identified for this study. The attributes included: age, SRSS-IE rating, attendance, and parent consent.

- *Age:* Child participants in this study were between the ages of seven and 12.
- *Student Risk Screening Scale - Internalizing and Externalizing (SRSS-IE)* (see Appendix D): Classroom teachers completed the SRSS-IE to identify students who were most at behavioral and emotional risk. The students who were most at risk were identified as potential study participants (Lane & Menzies, 2009).
- *Attendance:* During summer camp, many students did not attend consistently. Students with the most consistent attendance were chosen for data analysis.
- *Parent Consent:* Child participants in this study were required to obtain parental consent since they were under the age of eighteen (see Appendix E).

There was a total of 25 potential participants, but only five met the criteria for the study. Four of the participants were male and one of the participants was female.

Each day of summer camp, students were taught a reading lesson to improve reading comprehension (Pinnell & Fountas, 2010). After each reading lesson, teachers

scored each student's engagement using a direct behavior rating (DBR) form (see Appendix A) (Chafouleas et al., 2009). At the end of each week, the students completed a curriculum-based measurement (CMB) maze assessment (see Appendix B) to measure reading comprehension (Intervention Central).

An intervention was used to determine its impact on student engagement in the daily reading lesson and weekly comprehension assessment. The researcher adapted this intervention for the purpose of this study. The intervention consisted of the following: three rounds of deep breaths, three things that you hear, two emotions you are feeling, one compliment to yourself, and three more rounds of deep breaths.

A withdrawal treatment method allowed the researcher to draw conclusions based on the intervention treatment and baseline (non-intervention) treatment (Morgan & Morgan, 2008). During the baseline weeks (one, three, and five) of summer camp, the intervention was not utilized prior to the reading lesson. During intervention weeks (two, four, and six) of summer camp, an intervention was utilized prior to the reading lesson.

To measure social validity within the study, the teachers who facilitated the intervention completed the Intervention Rating Profile-15 (IRP-15) (Witt & Elliott, 1985) before and after the study. The IRP-15 is a common rating system for social validity used to assess a teacher's perspective on the intervention (Lane et al., 2009). The two teachers who participated in the study completed the IRP-15 before and after the study.

Based on the experimental design, the results from this study indicated that the intervention positively impacted all participating students' reading comprehension and engagement scores. Also, both teachers' IRP-15 scores indicated acceptance of the

intervention. The next section will discuss the results further and how these results connect to previous research.

Discussion

Results of the Study Related to Cognitive Behavioral Theory

The results of this study support that cognitive behavior theory is applicable to classroom settings. Cognitive behavioral theory is based on research that cognitive activity affects behavior, cognitive activity can be altered, and behavior can be changed through cognitive change (Dozois & Dobson, 2001; Hupp et al., 2008). It is understood through cognitive behavioral theory that a student's thoughts, feelings, and environment are connected to behavioral health. When a student is given opportunities, support, and encouragement, the student's brain is able to think naturally, feel emotions, and engage socially and intellectually (Immordino-Yang, 2015). Intervention X was used as a tool in this study to support students' self-regulation of thoughts, feelings, and behavior, and examine how the intervention improved classroom engagement and reading comprehension. This study indicated that student engagement behavior was positively impacted by the intervention related to thoughts and feelings. The study also indicated that reading comprehension (cognition) was positively impacted by the intervention. The positive results included students whose emotional or behavioral development was identified as at-risk, as indicated by the SRSS-IE data which was outlined in Chapter IV. Cognitive behavioral theory aligns with the results of this study, specifically the connection between classroom success and how a person thinks, feels, and relates to others (Immordino-Yang, 2015; Durlak, 2015).

The next section explains how the results of this study have positive implications for students, teachers, specialists, and schools, including at-risk students and under-resourced schools.

Results of the Study Related to Student Engagement

The five participants displayed increased classroom engagement as measured by the DBR form between baseline and intervention weeks. The DBR form included three specific measured behaviors: academic engagement, respectful behavior, and disruptive behavior (Chafouleas et al., 2009). Each participant within each DBR category displayed improvement during intervention weeks. The weeks without the intervention, the DBR scores were lower. The mean scores of participants also indicated positive engagement scores during intervention weeks and lower engagement scores during baseline weeks. These results further support the idea that emotions can positively or negatively impact a student's academic engagement, motivation, and overall success within school (Elias et al., 1997). These results also support how a universal self-regulation intervention can build a classroom environment that supports students' academic engagement and the individualized needs of students (Cavanaugh, 2016).

Results of the Study Related to Student Reading Comprehension

All participants showed an increase in reading comprehension scores. These results align with research that effective mastery of social and emotional skills are associated with greater well-being and better school performance, including reading comprehension. Research also indicates that all students benefit from social and emotional learning, which is supported by the study's data which showed every student

improved in every measurement (Elias et al., 1997; Durlak et al., 2011). The research and data suggest that changing instructional practices can result in increasing student motivation (Wigfield et al., 2004), as shown in the reading comprehension results of the study. The five participants displayed an increase in reading comprehension as measured by the CBM assessment from week one to week six. This increase in comprehension scores was gradual and fluctuated for each student. For example, student 207's scores:

Table 12. Student 207's Scores

Research ID	Week 1 Baseline	Week 2 Intervention	Week 3 Baseline	Week 4 Intervention	Week 5 Baseline	Week 6 Intervention
207	30%	56%	62%	95%	85%	73%

This student's score started at 30% in week one and ended at 73% in week six, but scores in weeks two and six fluctuated. Reading comprehension scores improved through the research process, but the individual student results do not show exact improvement on weeks that included the intervention. It is not clear from the individual student participants data if improvement is due to the intervention or the weekly reading lesson. However, there is sufficient data to show that the intervention was a catalyst for reading comprehension improvement within this study as shown by the overall comprehension score improvement during intervention weeks and DBR scores.

When looking at the mean comprehension scores, student scores were higher during intervention weeks and lower during baseline weeks. The mean score indicated that the intervention did impact the reading comprehension scores. These results connected to previous research which suggests that a student's ability to engage in

reading is based on the combination of emotion, cognition, and behavior (Fredricks et al., 2004). In order for students to successfully engage in the complexities of reading comprehension, they must be emotionally ready (Wigfield et al., 1997). Within this study, students had their emotions supported by using Intervention X prior to the start of a guided reading lesson. Results of the intervention showed students were better able to engage in the guided reading lesson once their emotions were supported. If a student is able to regulate and modify his or her emotions by using a tool such as Intervention X, then student can have positive outcomes such as academic success (Bohanon & Wu, 2011). The study's results continue to support the important connection between emotions and reading comprehension; there is an association between student motivation and emotions toward reading along with how much and how effectively students read (Wigfield & Guthrie, 1997; Wigfield et al., 2004).

Results of Study Related to Students Identified as At-Risk

Prior to the study, teachers completed an SRSS-IE to determine if any students within the study were at emotional or behavioral risk. One of the five students received an SRSS-IE score that indicated high risk. Three of the five participants received an SRSS-IE score that indicated moderate risk. Based on students being at a moderate or high risk as scored through SRSS-IE, it is possible these students have experienced regular stress or trauma. A student's emotional, physical, social, and academic development can be at risk if that student has experienced a traumatic event (Cavanaugh, 2016; Terrasi & De Galarce, 2017). Students who have been impacted by trauma or regular stress can be more vulnerable to anxiety, depression, withdrawal, disruptive, or

“acting out” behavior (Terrasi & De Galarce, 2017). This study measured disruptive behavior through the DBR form, and results indicate a reduction in disruptive behaviors during weeks with the intervention. Results from this study indicate that Intervention X was an effective method to support the classroom engagement of students who are identified as being at-risk of emotional or behavioral development. Although this intervention showed positive results for students with higher SRSS-IE scores, students experiencing mental health concerns may still need support from social workers, school nurses, or other mental health professionals.

The intervention was adapted to be easily transferable to a variety of situations, and meet the needs of all students, but particularly those who are identified as at-risk. The steps of the intervention were adapted to include techniques from cognitive behavioral therapy, social and emotional learning, and trauma-informed care. Also, the intervention was modified to take between two-to-three minutes, require no materials, and have no cost. These factors allow students to be able to access the intervention as needed regardless of resources available and whether at school or outside of school.

Results of the Study Related to Teachers

Teachers can use this study’s intervention to support the emotional development of students in their classroom. Many teachers feel unequipped to help students in areas of emotional support (Schonert-Reichl, 2017), because they receive minimal formal training or professional development about the impact of trauma on students and ways to help students (Ko et al., 2008). Also, teachers are overwhelmed by their responsibilities and teaching is one of the most stressful professions due to a combination of job

requirements, teacher capabilities, and available resources (Kyriacou, 2001). Intervention X can be a resource for teachers to support students' emotional regulation and classroom engagement, because it requires minimal training, and it could be applied to a variety of grade levels and content areas. Further, the intervention is free for teachers, can be used with all students, and does not require the teacher to prepare any materials. The results of the study indicate that teachers in this study accepted the intervention, meaning that other teachers may be able utilize this intervention. As a result, teachers could utilize the intervention individually and universally with all classroom students (Bohanon et al., 2022).

Results of the Study Related to Schools

Schools can implement this study's intervention universally as a tier 1 approach within an MTSS framework. The MTSS framework provides intervention resources to support the academic, behavioral, and social and emotional needs of students (Horner et al., 2017). MTSS includes evidence-based practices and trauma-informed mental health care. It provides a continuum of support to meet students' mental health needs, which is beneficial for schools considering the high percentage of students with mental health concerns (The Office of Surgeon General, 2022). Education and mental health professions have found that all students benefit from learning social and emotional skills throughout the school day and in the curriculum (Bohanon et al., 2022). Social and emotional learning programs are a tier one prevention tool used within MTSS to help students acquire knowledge, skills, and attitudes that can develop healthy identities, achieve goals, manage emotions, build, and maintain relationships, show empathy, and

make responsible decisions (CASEL, 2022). Since the intervention is free and requires minimal training, it could easily be included as an SEL strategy within an MTSS system.

The intervention from this study can be a useful tool within Catholic schools who often do not have funding for specialized staff to support individual needs of all students (Morten, 2020). Adequate training, personnel, professional development, and programming related to the mental health of students requires substantial financial support, and Catholic schools often do not have this funding (Bonfiglio & Kroh, 2020). Teachers and staff often lack the experience, training, and knowledge necessary to support students with disabilities which creates barriers for Catholic schools to be able to provide mental health services (Bonfiglio & Kroh, 2020; Boyle & Hernandez, 2016; Durow, 2007). Since this study's intervention requires minimal training and is a free resource, it can be infused into schools with limited funds as a tier one support. Although this intervention showed evidence of supporting students' ability to engage in learning, students with mental health concerns such as anxiety or depression may need to obtain professional help from a counselor, social worker, or school nurse.

Results of the Study Related to School Specialists

This study's intervention can be utilized within MTSS to potentially lesson tier one responsibilities of support specialists. MTSS allows for collaboration between general education and special education teachers, along with all other support specialists to ensure student improvement goals are met (Marlowe, 2021). School psychologists and social workers have a critical role in mental health support to students within MTSS. However, staffing of these positions is a challenge. Although federal funding has been

dedicated to building strong systems of support, there is a shortage of social workers and school psychologists available as mental health concerns continue to rise within schools (Kepley & Streeter, 2018). This study's intervention can be used within tier one of an MTSS system to potentially minimize the number of students who require more individualized support and increase the availability of school psychologists and social workers.

Interobserver Agreement Results

The researcher conducted interobserver checks during 33% of the study when monitoring engagement. The teacher's DBR scores were considered in agreement with the researcher's DBR score if engagement was rated within two numbers on the DBR scale. The mean interobserver score for the study was 86%, meaning the researcher and teacher DBR scores agreed 86% of the time. These results indicate that the DBR was a reliable measure for student engagement, because interobserver checks were above the acceptability range of 70-80% (Artman et al., 2012).

Social Validity Results

To include social validity, both teachers completed the IRP-15 at the beginning and the end of the study. The pre-intervention mean score was 70 and the post-intervention mean score was 78. These results indicate that teachers found the intervention to be efficient and acceptable. One teacher also wrote in the post IRP-15 comments section, "Great strategy to calm students down and get them focused before a lesson." This data suggests that teachers would be interested in utilizing Intervention X as a tool to improve student engagement and reading comprehension. Since the intervention

required minimal training for teachers, schools may be able to simply implement the intervention with all staff. Studies examining pre-service teacher preparation have found little evidence of coursework related to knowledge and skills necessary to support students' emotional development (Schonert-Reichl, 2017). This intervention would benefit the many schools and teachers whose staff lack training and knowledge in emotional development.

Fidelity Results

Fidelity data was used within the research to monitor the reliability and validity of a behavior intervention. To measure fidelity teachers completed a daily intervention checklist (see Appendix G) to ensure the correct steps were implemented. The researcher also conducted weekly observations of the intervention to ensure the intervention was implemented correctly. All checklists from teachers and the researcher received a score of 100%. This data supports that the behavior intervention was implemented with fidelity by both teachers, across all phases of the study.

Implications

The results of this study have several implications regarding how to support students, families, teachers, and researchers. First, the study's DBR and CBM data revealed that the intervention improved student engagement and comprehension for students in this study. Also, the experimental design used in this study increased confidence that the study's outcomes were a result of the intervention. The intervention was used in the classroom, but directions were not given to families about how the intervention could be utilized at home. Schools could communicate intervention

directions to families, along with its purpose, to provide families with a tool that could support students in the home environment.

A second implication is that students learned how to practice the intervention in the classroom when led by the teacher. They did not practice how to independently complete the intervention or how to apply it to a variety of circumstances. Students may benefit from practicing how to complete the intervention on their own, including when and how to utilize it outside of school. It would be helpful to see in future studies, if there were an un-trained generalization of the skills learned to other settings outside of the experimental classroom.

A third implication is that results were numeric data that calculated a variety of scores. Anecdotal data was not collected through interviews or notes with students or teachers. Teachers were given the option to write notes, but only one teacher wrote a note on the IRP-15 form. Researchers are encouraged to require some notetaking by teachers and obtain written or oral feedback from students to understand more about their perception of the intervention.

A final implication is that students chosen for the study were Summer Camp participants, and there were a variety of age ranges. The study included students between the age of seven to twelve. It is possible, based on the cognitive development of the participants, that older students may have been able to better regulate self-management strategies. Therefore, future research should focus on replications with specific age bands in mind to determine the impact of the intervention on a developmental stage.

Limitations

There were a few limitations to this study. First, the student participants were chosen using purposive and convenience sampling techniques. These techniques limited the student participants to those who participated in a specific summer camp and were of age seven to twelve. Since parental consent was required, the number of students were limited even further. Also, attendance became a limiting factor for students chosen. The study had the potential for 25 participants, but because of inconsistent attendance at summer camp, only five students qualified. Researchers are encouraged to collect student data during a program that requires regular student attendance, such as during the school year. Regular attendance would allow for more participant data to be collected about the intervention's impact on engagement and comprehension. Also, more participant data would allow researchers to examine specific ages rather than a range that includes a variety of developmental and learning capabilities.

Another limitation was the amount of time of the study was conducted for. The summer camp was only six weeks long, so the study was also six weeks. Of the six weeks, three weeks of baseline data and three weeks of intervention data were collected. However, if the study had taken place over a longer period of time, then more data could have been collected to support the research questions.

A third limitation was the number of teacher participants. Two teachers participated in the study, because there were two teachers in the student age ranges of the study. If the study was conducted during the school year, there would be more teachers

who could implement the intervention and provide feedback before and after using the intervention. Including more teachers would improve the strength of the social validity.

A final limitation is that this study examined a universal tier one self-regulation strategy. It is based on the science of cognitive behavioral therapy which is an evidence-based approach for addressing mental health needs. As a tier one strategy, it is not designed to treat preexisting mental health issues. It is designed to provide students with strategies to support their self-regulation skills in the classroom. As with all tier one strategies, additional tier two and three strategies are needed to ensure that students with mental health needs are supported as effectively as possible. While tier one strategies can create a more supportive environment for all students, including those with mental health needs, it does not replace the need for more intense interventions.

Future Research

This study has identified potential areas for future research related to social and emotional development of students. First, because the study revealed that the intervention can improve student engagement and comprehension within a classroom, more research is needed to specify what part of the procedure contributed to the positive results. More research could lead to future modifications of the intervention to improve student engagement even further. For example, students received the intervention three days per week and future studies could have students receive the intervention five days per week. Changing the frequency of the intervention may show an impact on engagement and reading comprehension.

Second, additional research is needed to determine what specifically caused the increase in reading comprehension. All student comprehension scores improved from the first week to the last week. Not all scores, however, showed higher comprehension during intervention weeks versus baseline weeks. It is not clear if student comprehension improved because of the daily guided reading lessons or the intervention. Future research could help to clarify the reason for improved reading comprehension.

Third, the study revealed that the intervention positively impacted on student engagement and reading comprehension, and it was also accepted by teachers. This intervention was adapted by the researcher for the study, but there are many other SEL interventions available to schools. Future research would help to determine if other interventions would similarly impact student engagement and reading comprehension.

Fourth, each student in the study was evaluated prior to the study using the SRSS-IE to determine if they were at emotional and behavioral risk. The SRSS-IE was given at the start of the study to identify how at-risk students would respond to the intervention however, SRSS-IE scores were not collected after the study. Future research could follow the at-risk students for a year or more to see if the intervention had a long-term impact on their emotional and behavioral development.

Finally, this study was completed in a school that did not utilize MTSS. Although the intervention was created with tier one MTSS in mind, it was not used within an MTSS system. It would be beneficial in future research to try the intervention as a tier one strategy within a school that is utilizing MTSS.

Conclusion

The purpose of this research was to determine the impact of a universal tier one self-regulation intervention on student engagement and reading comprehension. The study sought to find a simple and effective intervention that was beneficial to students and school staff. The study explored how students were impacted by a daily intervention through monitoring their engagement in learning and reading comprehension scores. In addition, the study explored how teachers responded to the intervention through a satisfaction survey including ease in training and implementation.

In summary, the present study provides evidence that an adapted universal tier-one self-regulation intervention within the school environment can improve students' classroom engagement and reading comprehension. The improvement included students whose emotional and behavioral development were identified as at-risk. Also, teachers found the intervention to be acceptable and efficient. All hypotheses of this study were accepted, and future research can continue to improve the understanding of the intervention and its impact on students, teachers, and communities.

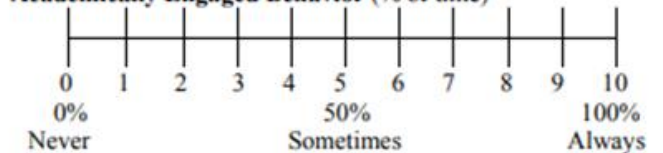
APPENDIX A
DIRECT BEHAVIOR RATING FORM

At the end of each day, complete one of these forms for each student. Include the date, time you completed the form, and rating for each student. On Thursdays (the last day of each intervention week) complete the notes section. Spend 5 minutes total writing notes about significant behaviors you may have noticed during the week.

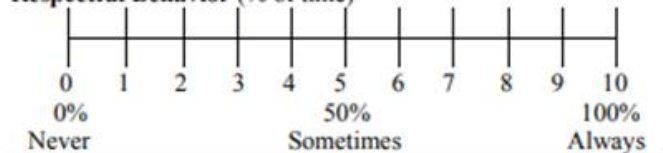
Student Name: _____

Date: _____ Time: _____ to _____

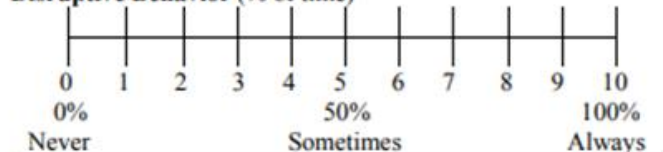
Academically Engaged Behavior (% of time)



Respectful Behavior (% of time)



Disruptive Behavior (% of time)



Notes:

APPENDIX B

CURRICULUM-BASED MEASUREMENT (CBM) MAZE ASSESSMENT

Example of a Curriculum-Based Measurement (CBM) Maze Assessment

Every Thursday, the whole class will take a Maze assessment after the reading lesson. Make sure the students are seated with a writing utensil and the classroom is quiet. Each student will receive a Maze assessment and have 3 minutes to complete.

Student Name: _____

5th Grade - Probe 19

Project PROACT Vanderbilt University

CARL'S SAVINGS ACCOUNT

This was a big day for Carl. Today he was going to open [on/ is/ a] savings account at the bank. The [thought/ forest/ garage] of having his own savings account [each/ made/ hide] him feel very grown-up. He was [also/ wide/ open] proud that he was going to [they/ open/ from] it himself. His father was going [in/ to/ at] go with him but it was understood [that/ crow/ rose] this was Carl's account. Responsibility for [differs/ morning/ opening] the account would be his.

APPENDIX C

INTERVENTION RATING PROFILE (IRP-15)

PRE- AND POST-INTERVENTION SURVEY

2015-2016

PRE-INTERVENTION

Student _____

Rater completing this form _____

Date _____

Adapted Version of the Intervention Rating Profile-15

The purpose of this questionnaire is to obtain information that will aid in the selection of future classroom interventions. These interventions will be used by teachers of children with identified needs. Please circle the number which best describes your agreement or disagreement with each statement.

	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1. This would be an acceptable intervention for the child's needs.	1	2	3	4	5	6
2. Most teachers would find this intervention appropriate for children with similar needs.	1	2	3	4	5	6
3. This intervention should prove effective in supporting the child's needs.	1	2	3	4	5	6
4. I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
5. The child's needs are severe enough to warrant use of this intervention.	1	2	3	4	5	6
6. Most teachers would find this intervention suitable for the needs of this child.	1	2	3	4	5	6
7. I would be willing to use this intervention in the classroom setting.	1	2	3	4	5	6
8. This intervention would <i>not</i> result in negative side effects for the child.	1	2	3	4	5	6
9. This intervention would be appropriate for a variety of children.	1	2	3	4	5	6
10. This intervention is consistent with those I have used in classroom settings.	1	2	3	4	5	6
11. The intervention is a fair way to handle the child's needs.	1	2	3	4	5	6
12. This intervention is reasonable for the needs of the child.	1	2	3	4	5	6
13. I like the procedures used in this intervention.	1	2	3	4	5	6
14. This intervention would be a good way to handle this child's needs.	1	2	3	4	5	6
15. Overall, this intervention would be beneficial for the child.	1	2	3	4	5	6

Total (sum all points circled; higher scores indicate higher acceptability; range = 15-90): _____

Comments: _____

Source: Adapted from Witt, J.C. & Elliott, S.N. (1985). Acceptability of classroom intervention strategies. In Kratochwill, T.R. (Ed.), *Advances in School Psychology*, Vol. 4, 251 – 288. Mahwah, NJ: Erlbaum. Reproduced under Fair Use of copyrighted materials for education, scholarship, and research. 17 U.S.C. § 107



2015-2016

POST-INTERVENTION

Student _____ Rater completing this form _____ Date _____

Adapted Version of the Intervention Rating Profile-15

The purpose of this questionnaire is to obtain information that will aid in the selection of future classroom interventions. These interventions will be used by teachers of children with identified needs. Please circle the number which best describes your agreement or disagreement with each statement.

	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1. This was an acceptable intervention for the child's needs.	1	2	3	4	5	6
2. Most teachers would find this intervention appropriate for children with similar needs.	1	2	3	4	5	6
3. This intervention proved effective in supporting the child's needs	1	2	3	4	5	6
4. I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
5. The child's needs were severe enough to warrant use of this intervention.	1	2	3	4	5	6
6. Most teachers would find this intervention suitable for the needs of this child.	1	2	3	4	5	6
7. I would be willing to use this intervention in the classroom setting.	1	2	3	4	5	6
8. This intervention did <i>not</i> result in negative side effects for the child.	1	2	3	4	5	6
9. This intervention would be appropriate for a variety of children.	1	2	3	4	5	6
10. This intervention was consistent with those I have used in classroom settings.	1	2	3	4	5	6
11. The intervention was a fair way to handle the child's needs.	1	2	3	4	5	6
12. This intervention was reasonable for the needs of the child.	1	2	3	4	5	6
13. I liked the procedures used in this intervention.	1	2	3	4	5	6
14. This intervention was a good way to handle this child's needs.	1	2	3	4	5	6
15. Overall, this intervention was beneficial for the child.	1	2	3	4	5	6

Total (sum all points circled; higher scores indicate higher acceptability; range = 15-90): _____

Comments: _____

Source: Adapted from Witt, J.C. & Elliott, S.N. (1985). Acceptability of classroom intervention strategies. In Kratochwill, T.R. (Ed.), *Advances in School Psychology*, Vol. 4, 251 – 288. Mahwah, NJ: Erlbaum. Reproduced under Fair Use of copyrighted materials for education, scholarship, and research. 17 U.S.C. § 107



APPENDIX D

STUDENT RISK SCREENING SCALE – INTERNALIZING AND EXTERNALIZING
(SRSS-IE)

SRSS-IE Recording Form:

This form is a template of the SRSS-IE form that will be used to identify student participants for the study.

DATE:			Student Risk Screening Scale - Internalizing and Externalizing (SRSS-IE) 2.0 ELEMENTARY USE 2020-2021														
TEACHER NAME:																	
0 = Never 1 = Occasionally 2 = Sometimes 3 = Frequently Use the above scale to rate each item for each student.																	
Student Name	Student ID	Count	Steal	Lie, Cheat, Sneak	Behavior Problem	Peer Rejection	Low Academic Achievement	Negative Attitude	Aggressive Behavior	Emotionally Flat	Shy, Withdrawn	Sad, Depressed	Anxious	Lonely	SRSS TOTAL	SRSS-IE TOTAL	SRSS-IE TOTAL
Example: Smith, Sally	11111	0	0	0	3	1	3	3	3	2	2	2	3	0	13	9	22
Example: Lane, Scarlett	112341	0	0	0	1	0	0	1	0	0	1	0	1	0	2	2	4
Example: Lane, Nathan	112345	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
		3													0	0	0
		4													0	0	0
		5													0	0	0
		6													0	0	0
		7													0	0	0
		8													0	0	0

SRSS-IE Scale:

Elementary School	
SRSS-E7	SRSS-IE5
(1) steal;	(8) emotionally flat;
(2) lie, cheat, sneak;	(9) shy, withdrawn;
(3) behavior problem;	(10) sad, depressed;
(4) peer rejection;	(11) anxious;
(5) low academic achievement;	(12) lonely
(6) negative attitude;	
(7) aggressive behavior	
0-3 = low risk	0-1 = low risk
4-8 = moderate risk	2-3 = moderate risk
9-21 = high risk	4-15 = high risk

APPENDIX E
PARENT/GUARDIAN CONSENT LETTER

Project Title: MEASURING THE EFFECT OF AN EMOTIONAL INTERVENTION ON STUDENT'S ABILITY TO ENGAGE IN A READING LESSON AND READING COMPREHENSION

Researcher: Kaitlin Reichart, doctoral candidate at Loyola University of Chicago

Introduction:

You and your child are being asked to take part in a dissertation research study by Kaitlin Reichart, a doctoral candidate at Loyola University in Chicago, under the supervision of Dr. Hank Bohanon, in the Department of Education at Loyola University in Chicago. Your child is being asked to participate because he/she is between the ages of 8-15 and participating in the school's summer camp.

Purpose:

This study has two purposes. First, the study aims to determine if an emotion-based intervention impacts a student's engagement in learning. Second, the study aims to determine if an emotion-based intervention has an impact on a student's reading comprehension.

Procedures:

All students in the summer camp classroom will regularly participate in reading lessons, emotional interventions, and reading assessments. Teachers will also collect information about student classroom behavior through a survey. This is a part of normal school programming.

This consent letter is to obtain permission to use on your child's data on classroom behavior and reading score in this research study. This includes using research data for the researcher's dissertation and possible conference presentations or publications.

Risks/Benefits:

There are no foreseeable risks involved in participating in this research beyond those experienced in everyday life. There are a few potential indirect benefits to your child's participation in the study. Your child may benefit from learning a new intervention that can improve their academic engagement and reading comprehension. The intervention for this study may improve your child's ability to emotionally manage events that occur in school and outside of school.

Confidentiality:

All records that identify your child will be kept confidential. However, the researcher and teachers are legally responsible for breaking confidentiality if there is reasonable suspicion of a child being neglected and/or abused. The school principal will not be aware of which students choose to participate in the study. Participants will be given a numeric and alphabetic code that will be used during the note taking and data collection forms. Participants will be given pseudonyms in any published reports of the study. A

code list of participant names and corresponding pseudonyms and numeric and alphabetic codes will be kept separate from all other data.

Voluntary Participation:

The use of your student's classroom data for this research project is voluntary. If you do not want your child's classroom data to be used, you do not need to provide consent. Deciding not have your child's data used for research will not affect your child's programming at any educational institution cooperating in this study. Your decision to consent or not consent to this research will not affect your child's activities or standing at the school or with the principal or their relationship with the school. The teacher and principal will be unaware of whether you consented or did not consent to the use of your child's data. A research assistant will collect the consent forms.

If you agree to have your child participate in the study, your child is to attend camp every day when able. It is requested that your child do not participate in additional reading instruction camps or programs during the time of this study.

Contact and Questions:

If you have any questions about this research study, please contact the research assistant, TBD, by email (TBD) or phone (TBD).

You can also contact the faculty sponsor for this research, Dr. Hank Bohanon by email (hbohanon@luc.edu).

If you have questions about you or your child's rights as a research participant, you may contact the Loyola University Office of Research Services at (773) 508-2689.

Statement of Consent:

Your signature below indicates that you have read the information provided above, have had an opportunity to ask questions, and agree to your child's classroom data being used within this research study. You will be given a copy of this form to keep for your records.

Signature of Parent or Guardian Date

Date

Signature of Researcher Date

Date

APPENDIX F
TEACHER WEEKLY IMPLEMENTATION CHECKLIST

Weeks *without* Intervention X (Weeks 1, 3, 5)

After each step is completed, place a check mark on the corresponding line. After all steps are completed, sign and date the bottom of the form. (For the purpose of this appendix, all items are on 1 page. For the study, these will be separate for a daily checklist that is signed and turned in)

Tuesday

_____ Teach reading lesson

_____ Complete DBR form after reading lesson

_____ Turn in DBR form and checklist to researcher

Wednesday

_____ Teach reading lesson

_____ Complete DBR form after reading lesson

_____ Turn in DBR form and checklist to researcher

Thursday

_____ Teach reading lesson

_____ Provide students Maze Assessment

_____ Complete DBR form after reading lesson

_____ Write notes for 5 minutes on DBR form

_____ Turn in DBR form, checklist, and Maze Assessment to researcher

Notes:

Signature_____
Date

Weeks with Intervention X (Weeks 2, 4, 6)

After each step is completed, place a check mark on the corresponding line. After all steps are completed, sign and date the bottom of the form. (For the purpose of this appendix, all items are on 1 page. For the study, these will be separate for a daily checklist that is signed and turned in)

Tuesday

_____ Facilitate intervention

(_____ breath, _____ sounds, _____ emotions, _____ compliment, _____ breath)

_____ Teach reading lesson

_____ Complete DBR form after reading lesson

_____ Turn in DBR form to researcher

Wednesday

_____ Facilitate intervention

(_____ breath, _____ sounds, _____ emotions, _____ compliment, _____ breath)

_____ Teach reading lesson

_____ Complete DBR form after reading lesson

_____ Turn in DBR form to researcher

Thursday

_____ Facilitate intervention

(_____ breath, _____ sounds, _____ emotions, _____ compliment, _____ breath)

_____ Teach reading lesson

_____ Provide students Maze Assessment

_____ Complete DBR form after reading lesson

_____ Write notes for 5 minutes on DBR form

_____ Turn in DBR form and Maze Assessment to researcher

Notes:

Signature

Date

APPENDIX G
INTERVENTION X IMPLEMENTATION GUIDE

Overview of Steps:

- 3 rounds of deep breaths
- 3 things that you hear
- 2 emotions you are feeling
- 1 compliment to yourself
- 3 rounds of deep breath

Teachers use the following script for guidance on each step of the intervention.

1. Quiet the classroom:
 - “Before we begin, let’s take a moment to quiet down the classroom. If you have a book in front of you, move it to the side. If you are writing, put down the writing utensil. Find a seat in the classroom where you can sit silently for a few minutes.”
 - Use this moment to ensure all students have materials to the side and are quietly seated. Do not begin until everyone is ready. This step should take between 30-60 second.
 - “Let’s take a few moments to quiet our brain and our bodies. You can keep your eyes open or closed. You can keep your head up or you can lay it down on your desk.”
2. 3 rounds of deep breath:
 - “We will begin by taking three deep breaths. You will slowly breathe in through your nose, make your belly nice and big, and then breathe out slowly through your mouth. Let’s begin: take your first deep breath slowly through your nose making your belly big, and breathe out slowly through your mouth. Take the second slow breath in through your nose and breathe out slowly through your mouth. Now, let’s take our third slow breath in through your nose, and slowly breathe out through your mouth.”
 - Each breath in and out should take around 10 seconds: 5 seconds breathing in, and 5 seconds breathing out.
 - “Great work calming your body with 3 deep breaths. Try to keep breathing in through your nose and out through your mouth as we keep going.”
3. 3 things that you hear:
 - “Now, we are going to listen to the sounds in our school. Begin by finding the first sound. Focus on this sound and take a deep breath.” (Pause for 10 seconds) “Let’s move on to another sound. Find the next sound and focus on it. Take a deep breath while focusing on that sound.” (Pause for 10 seconds) “Find one last sound and take a deep breath while focusing on that sound.” (Pause for 10 seconds)

4. 2 emotions you are feeling:
 - “Next, take a moment to think about how you are feeling today. There may be many emotions you are feeling but choose 2 emotions to focus on today. Take a moment to think about two emotions you are feeling today, and why you might be feeling that way. Continue to take deep breaths as you think about how you are feeling.”
 - Give about 30 seconds.

5. 1 compliment to yourself:
 - “Finally, take a moment to give yourself a compliment today. Did you help a friend? Work hard on a project? Use kind words toward someone? Give yourself a compliment for something you have done recently.”

6. 3 rounds of deep breath:
 - “We will end our time by taking 3 more deep breaths. Take your first deep breath slowly through your nose making your belly big and breathe out slowly through your mouth. Take the second slow breath in through your nose and breathe out slowly through your mouth. Now, let’s take our third slow breath in through your nose, and slowly breathe out through your mouth.”
 - As students get better at deep breathing, you can minimize the amount of guidance you provide with each breath.

7. Immediately transition into reading lessons.
 - “Great work everyone! Now let’s begin our reading lesson. Please...”

APPENDIX H
READING LESSON SAMPLE

The lesson plan below was published by Scholastic. It was retyped for this study to remove some content because of classroom time constraints and to only focus on reading comprehension.

Book: One Tiny Turtle

Author: Nicola Davies

Lesson Number: 1

A First Look

Read the title and display the front and back covers of the book. Point out that the cover illustration is a single drawing that spans the front and back covers. Ask: What do you see in the illustration? What are the white objects? What clues in the picture help you to know these are turtle eggs? What do you think this book will be about?

Read and Analyze Content Area Text

Understand Sequence of Events

Point out to children that they learn about loggerhead turtles by following a sequence of events in the book. Explain that a sequence of events is the order that events take place in a story or text.

- (pp. 7-9) How old is the turtle on page 8? How does the “world of weed” help the turtle? Why does the author begin the book with a baby turtle and where it lives?
- (pp. 14-15) By the time the turtle is several years old, how has it changed from when it was a baby?
- (pp. 18-21) Why does the turtle come ashore when it is about thirty years old? How has it changed? Why do turtles usually nest at night?
- (pp. 22-23) What sequence of events is shown on these pages? How can you tell the order of the events? What details are shown in the illustrations?
- (pp. 25-29) A turtle is at what part of its life on pages 25 and 29? Why does only one turtle make it to the sea?

Thinking Within the Text

Have children consider the book as a whole. Ask:

- What do you learn about the life of a loggerhead turtle? What are some dangers that loggerhead turtles face?
- Why is it difficult for scientists to study loggerhead turtles?

Thinking Beyond the Text

Have children focus on inferences. Say:

- Read the last sentence on page 15. Did the loggerhead turtle really disappear after feasting on crabs? What do you think happened to the turtle after the feast?
- On page 23, the turtle covers her eggs “to hide her nest from hungry mouths.” What does the author mean by “hungry mouths?” How did the sand help to protect the eggs?

Thinking About the Text

Discuss the book's format and language. Ask:

- Why did the author put some information in a smaller font that curves on the page? How is this information different from that shown in the larger, straight type on the page?
- How does the author's language connect the beginning of the story to the end of the story?

REFERENCE LIST

- Adaptation of the Intervention Rating Profile, ci3T, 2015.
https://ci3t.org/tier_library/Social_Validity_Adapted-IRP15_Adult.pdf
- Affective Education Conference. (1971). *The Science Teacher (National Science Teachers Association)*, 38(4), 69–69.
- Allen-Meares, P. (2006). One hundred years: A historical analysis of social work services in schools. *School Social Work Journal*, 30(3), 24–43.
- American Psychological Association. (2015). Trauma. www.Apa.org/topics/trauma
- Artman, K., Wolery, M., & Yoder, P. (2012). Embracing our visual inspection and analysis tradition: Graphing interobserver agreement data. *Remedial and Special Education*, 33(2), 71–77. <https://doi.org/10.1177/0741932510381653>
- August, G., Piehler, T. F., & Miller, F. G. (2018). Getting “SMART” about implementing multi-tiered systems of support to promote school mental health. *Journal of School Psychology*, 66, 85–96. <https://doi.org/10.1016/j.jsp.2017.10.001>
- Bandura, A. (1974). Behavior theory and the models of man. *American Psychologist*, 29(12), 859-869. <https://doi.org/10.1037/h0037514>
- Barnes, T. N., Smith, S. W., & Miller, M. D. (2014). School-based cognitive-behavioral interventions in the treatment of aggression in the United States: A meta-analysis. *Aggression and violent behavior*, 19(4), 311-321.
- Barnett, D., Hawkins, R., McCoy, D., Wahl, E., Shier, A., Denune, H., & Kimener, L. (2014). Methods used to document procedural fidelity in school-based intervention research. *Journal of Behavioral Education*, 23(1), 89-107.
- Beck, A. T. (1963). Thinking and depression: I. Idiosyncratic content and cognitive distortions. *Archives of General Psychiatry*, 9(4), 324-333.
- Beck, A. T. (Ed.). (1979). *Cognitive therapy of depression*. Guilford Press.
- Beidel, D. C., & Turner, S. M. (1986). A critique of the theoretical bases of cognitive behavioral theories and therapy. *Clinical Psychology Review*, 6(2), 177-197.

- Bellg, A. J., Borrelli, B., Resnick, B., Hecht, J., Minicucci, D. S., Ory, M., ... & Czajkowski, S. (2004). Enhancing treatment fidelity in health behavior change studies: Best practices and recommendations from the NIH Behavior Change Consortium. *Health Psychology, 23*(5), 443.
- Berkeley, S., Bender, W. N., Gregg Peaster, L., & Saunders, L. (2009). Implementation of response to intervention: A snapshot of progress. *Journal of Learning Disabilities, 42*(1), 85-95.
- Bishops, U. C. (1978). *Pastoral statement of US Catholic bishops on people with disabilities*. National Catholic Office for Persons with Disabilities.
- Boiten, F. A., Frijda, N. H., & Wientjes, C. J. (1994). Emotions and respiratory patterns: Review and critical analysis. *International Journal of Psychophysiology, 17*(2), 103-128.
- Bogdan, R., & Biklen, S. K. (1997). *Qualitative research for education*. Allyn & Bacon.
- Bohanon, H., Malloy, J., & Kelly, M. (2022). Multi-tiered systems of supports: A framework for improving schools. In M. Kelly (Ed.), *School social work* (9th ed., pp. 407-425). Oxford University Press.
- Bohanon, H., & Wu, M. (2011). Can prevention programs work together? An example of school-based mental health with prevention initiatives. *School-Based Mental Health Practice, 4*(4), 35-46.
- Boler. (1999). *Feeling power: Emotions and education*. Routledge.
- Bonfiglio, C., & Kroh, K. (2020). Inclusion in Catholic schools: From inception to implementation. *Journal of Catholic Education, 23*(2), 138-164.
- Bosshart. (1939). *Harvard Educational Review, 455*.
- Boullier, M., & Blair, M. (2018). Adverse childhood experiences. *Pediatrics and Child Health, 28*(3), 132-137.
- Boyle, M., & Hernandez, C. (2017). An investigation of the attitudes of Catholic school principals towards the inclusion of students with disabilities. *Journal of Catholic Education, 20*(1), 190-219.
- Brackett, M. A., & Simmons, D. (2015). Emotions matter. *Educational leadership, 73*(2), 22-27.

- Brewer, J. A., Worhunsky, P. D., Gray, J. R., Tang, Y. Y., Weber, J., & Kober, H. (2011). Meditation experience is associated with differences in default mode network activity and connectivity. *Proceedings of the National Academy of Sciences, 108*(50), 20254-20259.
- Brown, B. B., & Prinstein, M. J. (Eds.). (2011). *Encyclopedia of adolescence*. Academic Press.
- Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? *Qualitative Research, 6*(1), 97-113.
- Burke, C. A. (2010). Mindfulness-based approaches with children and adolescents: A preliminary review of current research in an emergent field. *Journal of Child and Family Studies, 19*(2), 133-144.
- Burke, M. M., & Griffin, M. M. (2016). Students with developmental disabilities in Catholic schools: Examples in primary and secondary settings. *Journal of Catholic Education, 19*(3), 197-220.
- Carter, S. L. (2010). *The social validity manual*. Elsevier, Inc.
- Carter, S. L., & Wheeler, J. J. (2019). *The social validity manual* (2nd ed.).
- Cavanaugh. (2016). Trauma-informed classrooms and schools. *Beyond Behavior, 25*(2), 41-46. <https://doi.org/10.1177/107429561602500206>
- Centers for Disease Control and Prevention. (2014). *About BRFSS*. <http://www.cdc.gov/brfss/about/index.htm>
- Chafouleas, S. M., Pickens, I., & Gherardi, S. A. (2021). Adverse childhood experiences (ACEs): translation into action in K12 education settings. *School Mental Health, 13*(2), 213-224.
- Chafouleas, S. M., Riley-Tillman, T. C., Christ T. J. (2010). Direct Behavior Rating Form – Fill-in Behaviors. www.directbehaviorratings.org
- Children's Morality Code (verified and revised). (1924). *Journal of Education, 100*(5), 130-132.
- Christ, T. J., Riley-Tillman, T. C., & Chafouleas, S. M. (2009). Foundation for the development and use of Direct Behavior Rating (DBR) to assess and evaluate student behavior. *Assessment for Effective Intervention, 34*(4), 201-213.

- Clark, A., Sorgenfrei M., Mulcahy J., Davie, P., McBride T. (2021). Adolescent mental health: A systematic review on the effectiveness of School-based interventions. *Early Intervention Foundation*.
- Cohen, G. L., & Sherman, D. K. (2014). The psychology of change: Self-affirmation and social psychological intervention. *Annual Review of Psychology*, 65, 333-371.
- Collaborative for Academic, Social, and Emotional Learning. (2007). Implementation guidance. Collaborative for Academic, Social, and Emotional Learning. <http://casel.org/in-schools/implementation/implementation-guidance/>
- Collaborative for Academic, Social, and Emotional Learning (2012). <https://casel.org/state-resource-center/frameworks-competencies-standards-and-guidelines/>
- Collaborative for Academic, Social, and Emotional Learning (2022). <https://casel.org/fundamentals-of-sel/what-is-the-casel-framework/>
- Congregation for Bishops. (2017). Directory for the Pastoral Ministry of Bishops Apostolorum Successores, 22 February 2004, n. 133a and c.
- Craske. (2017). *Cognitive-behavioral therapy* (2nd ed.). American Psychological Association.
- Creswell, J. D. (2017). Mindfulness interventions. *Annual Review of Psychology*, 68, 491-516.
- Crone, D. A., Hawken, L. S., & Horner, R. H. (2015). *Building positive behavior support systems in schools: Functional behavioral assessment*. Guilford Publications.
- Cullinan, D. (2002). *Students with emotional and behavior disorders: An introduction for teachers and other helping professionals*. Pearson.
- Curriculum-based measurement Maze passage. (2007). *Intervention central*. <https://www.interventioncentral.org/teacher-resources/test-of-reading-comprehension>
- Daunic, A. P., Smith, S. W., Brank, E. M., & Penfield, R. D. (2006). Classroom-based cognitive-behavioral intervention to prevent aggression: Efficacy and social validity. *Journal of School Psychology*, 44(2), 123-139.
- Davidson, R. J., & McEwen, B. S. (2012). Social influences on neuroplasticity: Stress and interventions to promote well-being. *Nature Neuroscience*, 15(5), 689-695.

- DeCuir-Gunby, J. T., Marshall, P. L., & McCulloch, A. W. (2011). Developing and using a codebook for the analysis of interview data: An example from a professional development research project. *Field Methods*, 23(2), 136-155.
- Delamont, S. (Ed.). (2012). *Handbook of qualitative research in education*. Edward Elgar Publishing.
- Diller, J. W., Brown, R. M., & Patros, C. H. (2013). Revisiting Kazdin (1980): Contemporary treatment acceptability for problem behavior in children. *International Journal of Psychology and Psychological Therapy*, 13(2), 225-231.
- Dorfman, C. (Ed.). (1988). *Youth indicators 1988: Trends in the well-being of American youth*. National Center for Education Statistics.
- Downer, J., Sabol, T. J., & Hamre, B. (2010). Teacher-child interactions in the classroom: Toward a theory of within-and cross-domain links to children's developmental outcomes. *Early Education and Development*, 21(5), 699-723.
- Dozois, D. J., & Dobson, K. S. (2001). Information processing and cognitive organization in unipolar depression: Specificity and comorbidity issues. *Journal of Abnormal Psychology*, 110(2), 236.
- Durlak, J. A. (2015). *Handbook of social and emotional learning: Research and practice*. The Guilford Press.
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, 82(1), 405-432.
- Durow, W. P. (2007). Including and serving students with special needs in Catholic schools: A report of practices. *Journal of Catholic Education*, 10, 473-489.
- D'zurilla, T. J., & Goldfried, M. R. (1971). Problem solving and behavior modification. *Journal of Abnormal Psychology*, 78(1), 107.
- Educationis, G. (1965). Declaration on Christian education. *Vatican Council II: The Conciliar and Post Conciliar Documents*, 725-738.
- Edwards, E., Shivaji, S., & Wupperman, P. (2018). The emotion mapping activity: Preliminary evaluation of a mindfulness-informed exercise to improve emotion labeling in alexithymic persons. *Scandinavian Journal of Psychology*, 59(3), 319-327. <https://doi.org/10.1111/sjop.12438>

- Eisenberg, N. (Ed.). (2006). Volume 3: Social, emotional, and personality development. In W. Damon, & R. M. Lerner (Series Eds.), *Handbook of child psychology* (6th ed). Wiley.
- Elias, M. J., Wang, M. C., Weissberg, R. P., Zins, J. E., & Walberg, H. J. (2002). The other side of the report card: Student success depends on more than test scores. *American School Boards Journal*, 189(11), 28–31.
- Elias, M. J., Zins, J. E., Weissberg, R. P., Frey, K. S., Greenberg, M. T., Haynes, N. M., et al. (1997). Promoting social and emotional learning: Guidelines for educators. Association for Supervision and Curriculum Development.
- Elliott, S. N. (1988). Acceptability of behavioral treatments: Review of variables that influence treatment selection. *Professional Psychology: Research and Practice*, 19(1), 68.
- Ellis, A. (1962). *Reason and emotion in psychotherapy*. Lyle Stuart.
- Engelniederhammer, K., Sasse, H., & Papastefanou, G. (2020). Effects of a short mindful-breathing intervention on the psychophysiological stress reactions of German elementary school children. *School Psychology International*, 41(3), 218–238. <https://doi.org/10.1177/0143034320903480>
- Every Student Succeeds Act, 20 U.S.C. § 6301. (2015). <https://www.congress.gov/bill/114th-congress/senate-bill/1177>
- Farrell. (2010). School psychology: Learning lessons from history and moving forward. *School Psychology International*, 31(6), 581–598. <https://doi.org/10.1177/0143034310386533>
- Fawcett, S. B. (1991). Social validity: A note on methodology. *Journal of Applied Behavior Analysis*, 24, 235-239.
- Fleming, C., Haggerty, K., Catalano, R., Harachi, T., Mazza, J., & Gruman, D. (2005). Do social and behavioral characteristics targeted by preventive interventions predict standardized test scores and grades? *The Journal of School Health*, 75(9), 342-349. <http://www.cinahl.com/cgi-bin/refsvc?jid=225&accno=2009059387>
- Forman, S. G., & Barakat, N. M. (2011). Cognitive-behavioral therapy in the schools: Bringing research to practice through effective implementation. *Psychology in the Schools*, 48(3), 283-296.
- Fountas, I. C. (2008). *Fountas and Pinnell benchmark assessment system 2: Grades 3-8, levels L-Z*. Heinemann.

- Fountas, I. C., & Pinnell, G. S. (2008). *When readers struggle: Teaching that works*. Heinemann.
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59-109. <https://doi.org/10.3102/00346543074001059>
- Fuchs, L. S., Fuchs, D., & Malone, A. S. (2017). The taxonomy of intervention intensity. *Teaching Exceptional Children*, 50(1), 35-43.
- Gherardi. (2017). Policy windows in school social work: History, practice implications, and new directions. *School Social Work Journal*, 42(1), 37-54.
- Ginsburg, G. S., Becker, K. D., Kingery, J. N., & Nichols, T. (2008). Transporting CBT for childhood anxiety disorders into inner-city school-based mental health clinics. *Cognitive and Behavioral Practice*, 15(2), 148-158.
- Goetz, T., Pekrun, R., Hall, N. C., & Haag, L. (2006). Academic emotions from a socio-cognitive perspective: Antecedents and domain specificity of students' affect in the context of Latin instruction. *British Journal of Educational Psychology*, 76, 279-308.
- Goleman, D. (2005). *Emotional intelligence*. Bantam.
- Goodman, S., & Bohanon, H. (2018, February 1). A framework for supporting all students: One-size-fits-all no longer works in schools. *American School Board Journal*. https://ecommons.luc.edu/education_facpubs/116/
- Greene, J. C. (2007). *Mixed methods in social inquiry*. John Wiley & Sons Inc.
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis*, 11(3), 255-274.
- Greenberg, & Abenavoli, R. (2017). Universal interventions: Fully exploring their impacts and potential to produce population-level impacts. *Journal of Research on Educational Effectiveness*, 10(1), 40-67. <https://doi.org/10.1080/19345747.2016.1246632>
- Gresham, F. M. (1983). Social validity in the assessment of children's social skills: Establishing standards for social competency. *Journal of Psychoeducational Assessment*, 1(3), 299-307.

- Gueldner, B. A., Feuerborn, L. L., & Merrell, K. W. (2020). *Social and emotional learning in the classroom: Promoting mental health and academic success*. Guilford Publications.
- Guthrie, J. T. (2008). Reading motivation and engagement in middle and high school: Appraisal and intervention. In J. T. Guthrie (Ed.), *Engaging adolescents in reading* (pp. 1-16). Corwin Press.
- Han, S. S., & Weiss, B. (2005). Sustainability of teacher implementation of school-based mental health programs. *Journal of Abnormal Child Psychology*, 33(6), 665-679.
- Hamedi, S. M., Pishghadam, R., & Fadardi, J. S. (2019). *The contribution of reading emotions to reading comprehension: The mediating effect of reading engagement using a structural equation modeling approach*.
- Hoffman, D. M. (2009). Reflecting on social emotional learning: A critical perspective on trends in the United States. *Review of Educational Research*, 79(2), 533-556.
- Hoover, S. A. (2019). Policy and practice for trauma-informed schools. *State Education Standard*, 19(1), 25-29.
- Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single subject research to identify evidence-based practice in special education. *Exceptional Children*, 71, 165-179.
- Horner, R. H., Sugai, G., & Fixsen, D. L. (2017). Implementing effective educational practices at scales of social importance. *Clinical Child and Family Psychology Review*, 20(1), 25-35.
- Horner, S., Rew, L., & Torres, R. (2006). Enhancing intervention fidelity: A means of strengthening study impact. *Journal for Specialists in Pediatric Nursing*, 11(2), 80-89.
- Hupp, S. D., Reitman, D., & Jewell, J. D. (2008). Cognitive behavioral theory. *Handbook of Clinical Psychology*, 2, 263-287.
- Hutchins. (1926). Morality code for elementary schools. *Journal of Education*, 103(2), 38-39. <https://doi.org/10.1177/002205742610300203>
- Immordino-Yang, M. H. (2015). *Emotions, learning, and the brain: Exploring the educational implications of affective neuroscience (the Norton series on the social neuroscience of education)*. WW Norton & Company.

- Immordino-Yang, M. H., Darling-Hammond, L., & Krone, C. (2018). *The brain basis for integrated social, emotional, and academic development: How emotions and social relationships drive learning*. Aspen Institute.
- Individuals with Disabilities Education Act Amendments of 1997, Pub. L. No. 105-17 § 111 Stat. 37 (1997). <https://www.govinfo.gov/content/pkg/PLAW-105pub117/html/PLAW-105pub117.htm>
- ISBE. (2003). Illinois learning standards. Science: Illinois State Board of Education. <https://www.isbe.net/pages/social-emotional-learningstandards.aspx>
- Jagers, R. J., Rivas-Drake, D., & Borowski, T. (2018). *Establishing practical social-emotional competence assessments work group equity and social and emotional learning: A cultural analysis purpose*.
- Janus, & Duku, E. (2007). The school entry gap: Socioeconomic, family, and health factors associated with children's school readiness to learn. *Early Education and Development, 18*(3), 375–403. <https://doi.org/10.1080/10409280701610796a>
- Johnson, B., & Christensen, L. (2012). *Educational research* (4th ed.). SAGE Publications, Inc.
- Joyce-Beaulieu, D., & Zabolski, B.A. (2021). CBT applications in schools. *Applied Cognitive Behavioral Therapy in Schools, 1*.
- Kalodner, C. R. (2011). Cognitive-behavioral theories. In D. Capuzzi, & D. R. Gross (Eds.), *Counseling and psychotherapy* (pp. 193–213). American Counseling Association.
- Kazdin, A. E. (2011). *Single-case research design: Methods for clinical and applied settings* (2nd ed.). Oxford University Press.
- Kempermann, G., & Gage, F. H. (1999). New nerve cells for the adult brain. *Scientific American, 280*, 48-67.
- Kepley, H. O., & Streeter, R. A. (2018). Closing behavioral health workforce gaps: A HRSA program expanding direct mental health service access in underserved areas. *American Journal of Preventive Medicine, 54*(6), S190-S191.
- Kiddle, H., & Schem, A. J. (1882). *The dictionary of education and instruction*. Sampson Low & Co.

- Kircanski, K., Lieberman, M. D., & Craske, M. G. (2012). Feelings into words: Contributions of language to exposure therapy. *Psychological Science, 23*(10), 1086-1091.
- Khng, K. H. (2017). A better state-of-mind: Deep breathing reduces state anxiety and enhances test performance through regulating test cognitions in children. *Cognition and Emotion, 31*(7), 1502-1510.
- Ko, S. J., Ford, J. D., Kassam-Adams, N., Berkowitz, S. J., Wilson, C., Wong, M., ... & Layne, C. M. (2008). Creating trauma-informed systems: Child welfare, education, first responders, health care, juvenile justice. *Professional Psychology: Research and Practice, 39*(4), 396-404. <https://doi.org/10.1037/0735-7028.39.4.396>
- Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review, 53*, 28-35.
- Łakuta, P. (2020). Using the theory of self-affirmation and self-regulation strategies of mental contrasting and forming implementation intentions to reduce social anxiety symptoms. *Anxiety, Stress, and Coping, 33*(4), 370-386.
- Lane, K. L., Kalberg, J. R., Bruhn, A. L., Driscoll, S. A., Wehby, J. H., & Elliott, S. N. (2009). Assessing social validity of school-wide positive behavior support plans: Evidence for the reliability and structure of the Primary Intervention Rating Scale. *School Psychology Review, 38*(1), 135-144.
- Lane, K. L., & Menzies, H.M. (2009). *Student Risk Screening Scale for Internalizing and Externalizing (SRSS-IE)*. <http://www.ci3t.org/screening>
- Larson, H. A., Yoder, A. M., Johnson, C., El Rahami, M., Sung, J., & Washburn, F. (2010). Test anxiety and relaxation training in third-grade students. *Eastern Education Journal, 13*.
- Leitch. (2017). Action steps using ACEs and trauma-informed care: a resilience model. *Health and Justice, 5*(1), 5–5. <https://doi.org/10.1186/s40352-017-0050-5>
- Lieberman, M. D., Eisenberger, N. I., Crockett, M. J., Tom, S. M., Pfeifer, J. H., & Way, B. M. (2007). Putting feelings into words. *Psychological Science, 18*(5), 421-428.
- Marlowe, A. B. (2021). *Multi-Tiered System of Supports: A case study examining effective MTSS implementation at the middle school level* (Doctoral dissertation, Gardner-Webb University).

- Martens, B. K., Witt, J. C., Elliott, S. N., & Darveaux, D. X. (1985). Teacher judgments concerning the acceptability of school-based interventions. *Professional Psychology: Research and Practice*, *16*(2), 191.
- Mayer, J. D., & Cobb, C. D. (2000). Educational policy on emotional intelligence: Does it make sense? *Educational Psychology Review*, *12*(2), 163-183.
- McIntyre, E. M., Baker, C. N., & Overstreet, S. (2019). Evaluating foundational professional development training for trauma-informed approaches in schools. *Psychological Services*, *16*(1), 95.
- McQueen, A., & Klein, W. M. (2006). Experimental manipulations of self-affirmation: A systematic review. *Self and Identity*, *5*(4), 289-354.
- Meichenbaum, D. (1977). Cognitive behaviour modification. *Cognitive Behaviour Therapy*, *6*(4), 185-192.
- Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. John Wiley & Sons.
- Michael, K. D., Albright, A., Jameson, J. P., Sale, R., Massey, C., Kirk, A., & Egan, T. (2013). Does cognitive behavioural therapy in the context of a rural school mental health programme have an impact on academic outcomes? *Advances in School Mental Health Promotion*, *6*(4), 247-262.
- Murphy. (1941). Social and emotional development. *Review of Educational Research*, *11*(5), 479–501. <https://doi.org/10.2307/1168597>
- Morgan, & Morgan, R. K. (2008). *Single-case research methods for the behavioral and health sciences*. SAGE.
- Morten, S. (2020). Response from the field: Framework for all: Building capacity for service delivery in Catholic schools. *Journal of Catholic Education*, *23*(2), 107-110.
- National Association of Social Workers. (1996). *Code of ethics of the National Association of Social Workers*. Washington, DC: Author.
- Oberle, E., Domitrovich, C. E., Meyers, D. C., & Weissberg, R. P. (2016). Establishing systemic social and emotional learning approaches in schools: A framework for schoolwide implementation. *Cambridge Journal of Education*, *46*(3), 277–297.

- Obradović, J., Sulik, M. J., & Armstrong-Carter, E. (2021). Taking a few deep breaths significantly reduces children's physiological arousal in everyday settings: Results of a preregistered video intervention. *Developmental Psychobiology*, 63(8), e22214–n/a.
- Office of the Surgeon General. (2022). Protecting Youth Mental Health.
- Ollendick, T. H., & King, N. J. (2000). Empirically supported treatments for children and adolescents. In P. C. Kendall (Ed.), *Child and adolescent therapy: Cognitive-behavioral procedures* (pp. 386–425). Guilford Press.
- Ozar, L. A., & Weitzel-O'Neill, P. (Eds.). (2012). *National standards and benchmarks for effective Catholic elementary and secondary schools*. Loyola University Chicago, Center for Catholic School Effectiveness.
- Ozdemir, S. (2008). The effectiveness of social stories on decreasing disruptive behaviors of children with autism: Three case studies. *Journal of Autism and Developmental Disorders*, 38(9), 1689-1696.
- Payton, J., Weissberg, R. P., Durlak, J. A., Dymnicki, A. B., Taylor, R. D., Schellinger, K. B., & Pachan, M. (2008). The positive impact of social and emotional learning for kindergarten to eighth-grade students: Findings from three scientific reviews. Technical Report. *Collaborative for Academic, Social, and Emotional Learning (NJ)*.
- Pekrun, R. (2014). Emotions and learning. *Educational practices series*, 24(1), 1-31.
- Pekrun, R., Goetz, T., Titz, W., & Perry, R. P. (2002). Academic emotions in students' self-regulated learning and achievement: A program of quantitative and qualitative research. *Educational Psychologist*, 37, 91-106.
http://dx.doi.org/10.1207/S15326985EP3702_4
- Phifer, L. W., Crowder, A. K., Elsenraat, T., & Hull, R. (2017). *CBT Toolbox for children and adolescents: Over 200 worksheets and exercises for trauma, ADHD, autism, anxiety, depression and conduct disorders*.
- Pinnell, G. S., & Fountas, I. C. (2010). Research base for guided reading as an instructional approach. *Scholastic: Guided reading research*.
- Porcino. (2016). Not birds of a feather: Case reports, case studies, and single-subject research. *International Journal of Therapeutic Massage and Bodywork*, 9(3), 1–2.
- Pressley, M. (2002). Metacognition and self-regulated comprehension. *What Research has to say about Reading Instruction*, 3, 291-309.

- Prevention, V. About the CDC-Kaiser ACE Study. *Age (years)*, 19(29), 5-3.
<http://www.cdc.gov/violenceprevention/acestudy/>
- Reinbergs, E. J., & Fefer, S. A. (2018). Addressing trauma in schools: Multitiered service delivery options for practitioners. *Psychology in the Schools*, 55(3), 250-263.
- Reitman, D., & Drabman, R. S. (1997). The value of recognizing our differences and promoting healthy competition: The cognitive behavioral debate. *Behavior Therapy*, 28(3), 419-429.
- Rehabilitation Act of 1973. Pub. L. No. 93-112 § 87 Stat. 355.
<https://www.congress.gov/bill/93rd-congress/house-bill/17q=%7B%22search%22%3A%5B%22rehabilitation+act+of+1973%22%5D%7D&r=3>
- Richards, L., & Morse, J. M. (2007). Coding. *Readme first for a user's guide to qualitative methods*, 133-151.
- Schonert-Reichl, K. A. (2017). Social and emotional learning and teachers. *The Future of Children*, 27(1), 137–155. <http://www.jstor.org/stable/44219025>
- Schmidt, J. J. (2008). History of school counseling. *Handbook of school counseling*, 3-13.
- Scott, J. E., & Walczak, S. (2009). Cognitive engagement with a multimedia ERP training tool: Assessing computer self-efficacy and technology acceptance. *Information and Management*, 46(4), 221-232.
- Sears, R. W., & Chard, K. M. (2016). *Mindfulness-based cognitive therapy for posttraumatic stress disorder*. John Wiley & Sons.
- Sherman, D. K. (2013). Self-affirmation: Understanding the effects. *Social and Personality Psychology Compass*, 7(11), 834-845.
- Sherman, D. K., & Cohen, G. L. (2006). The psychology of self-defense: Self-affirmation theory. *Advances in Experimental Social Psychology*, 38, 183-242.
- Shetty, R., Kongasseri, S., & Rai, S. (2020). Efficacy of mindfulness based cognitive therapy on children with anxiety. *Journal of Cognitive Psychotherapy*, 34(4), 306-318. <https://doi.org/10.1891/JCPSY-D-20-00014>
- Skinner, B. (1953). *Science and human behavior*. Macmillan.
- Snedden, D. (1918). The improvement of character education. *Journal of Education*, 88(6), 144–145.

- Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In *Advances in experimental social psychology* (Vol. 21, pp. 261-302). Academic Press.
- Stinson, D. A., Logel, C., Shepherd, S., & Zanna, M. P. (2011). Rewriting the self-fulfilling prophecy of social rejection: Self-affirmation improves relational security and social behavior up to 2 months later. *Psychological Science, 22*(9), 1145-1149.
- Sweeney, A. M., & Moyer, A. (2015). Self-affirmation and responses to health messages: A meta-analysis on intentions and behavior. *Health Psychology, 34*(2), 149.
- Syeda, & Andrews, J. J. W. (2021). Mindfulness-based cognitive therapy as a targeted group intervention: Examining children's changes in anxiety symptoms and mindfulness. *Journal of Child and Family Studies, 30*(4), 1002–1015.
- Systematic screening ci3t.org*. ci3t.org. (2020, September 20).
<https://www.ci3t.org/screening>
- Taylor, R. D., Oberle, E., Durlak, J. A., & Weissberg, R. P. (2017). Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child Development, 88*(4), 1156-1171.
- Teasdale, J. D., Segal, Z., & Williams, J. M. G. (1995). How does cognitive therapy prevent depressive relapse and why should attentional control (mindfulness) training help? *Behaviour Research and Therapy, 33*(1), 25-39.
- Teicher, M. H., Andersen, S. L., Polcari, A., Anderson, C. M., Navalta, C. P., & Kim, D. M. (2003). The neurobiological consequences of early stress and childhood maltreatment. *Neuroscience and Biobehavioral Reviews, 27*(1), 33-44.
- Terrasi, S., & De Galarce, P. C. (2017). Trauma and learning in America's classrooms. *Phi Delta Kappan, 98*(6), 35-41.
- United States. Public Health Service. Office of the Surgeon General, United States. Substance Abuse, Mental Health Services Administration, Center for Mental Health Services (US), & National Institute of Mental Health (US). (1999). *Mental health: A report of the surgeon general*. Department of Health and Human Services, US Public Health Service.
- University of Connecticut. (2010). Direct Behavior Ratings.
<http://www.directbehaviorratings.org/cms/index.php/library/online>

- Vicary, J. R. (1976). Teaching models involving affective education. *Journal of School Health*.
- Wainer, A., & Ingersoll, B. (2013). Intervention fidelity: An essential component for understanding ASD parent training research and practice. *Clinical Psychology: Science and Practice*, 20(3), 335.
- Watkins, M. W., & Pacheco, M. (2000). Interobserver agreement in behavioral research: Importance and calculation. *Journal of Behavioral Education*, 10(4), 205–212. <http://www.jstor.org/stable/41969910>
- Watson, J. B. (1924). The un verbalized in human behavior. *Psychological Review*, 31(4), 273.
- Weissberg, Durlak, Domitrovich, & Gullotta. (2015, 2016). Collaborative for Academic, Social, and Emotional Learning [CASEL].
- Wiest-Stevenson, C., & Lee, C. (2016). Trauma-informed schools. *Journal of Evidence-Informed Social Work*, 13(5), 498-503.
- Wigfield, A., & Guthrie, J.T. (1997). Relations of children's motivation for reading to the amount and breadth of their reading. *Journal of Educational Psychology*, 89(3), 420.
- Wigfield, A., Guthrie, J. T., Tonks, S., & Perencevich, K. C. (2004). Children's motivation for reading: Domain specificity and instructional influences. *The Journal of Educational Research*, 97(6), 299-310.
- Wilbert, J. (2021). *Analyzing single-case data with R and scan*. <https://jazznbass.github.io/scan-Book/overlapping-indices.html>
- Witt, J. C., & Elliott, S. N. (1985). *Acceptability of classroom intervention strategies*. Vol. 4. In T. R. Kratochwill (Ed.), *Advances in school psychology*.
- Witt, J. C., Martens, B. K., & Elliott, S. N. (1984). Factors affecting teachers' judgments of the acceptability of behavioral interventions: Time involvement, behavior problem severity, and type of intervention. *Behavior Therapy*, 15(2), 204-209.
- Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart 1. *Journal of Applied Behavior Analysis*, 11(2), 203-214.
- World Health Organization. (2004). *Prevention of mental disorders: Effective interventions and policy options*. Summary Report. Geneva: Author.

- World Health Organization. (2020). *WHO timeline - COVID-19*.
https://www.who.int/news-room/detail/27-04-2020-who-timeline---covid-19?gclid=CjwKCAjw_qb3BRAVEiwAvwq6VuqNnDK2dN5aM71KZBkIPap1qwIR-IRcW231MXMvKKPPW0O23GbvYhoC6b8QAvD_BwE
- Zelazo, P. D., & Lyons, K. E. (2012). The potential benefits of mindfulness training in early childhood: A developmental social cognitive neuroscience perspective. *Child Development Perspectives*, 6(2), 154-160.

VITA

Kaitlin Reichart was born in the suburbs of Chicago. She currently resides in Chicago with her husband, two children, and dog.

Kaitlin graduated from Marquette University in 2010 with a Bachelor of Science degree in Elementary Education and Sociology. In 2015, Kaitlin graduated from Loyola University Chicago with a master's in administration and supervision for Principals. From 2016-2018, Kaitlin was a Fellow through the University of Notre Dame in the Center for Transformational Educational Leadership. Kaitlin has been a part of the Ed.D. Curriculum and Instruction Doctoral Program through Loyola University Chicago since 2019.

Kaitlin has worked in the field of education since 2010. She began her career as a first and third grade classroom teacher before moving into the principal role in 2015. Kaitlin is in her eighth year as an elementary school principal within the Archdiocese of Chicago and Big Shoulders Fund network.

DISSERTATION COMMITTEE

The Dissertation submitted by Kaitlin Reichart has been read and approved by the following committee:

Hank Bohanon, Ph.D., Director
Professor, School of Education
Loyola University Chicago

Michelle Lia, Ed.D.,
Co-Director of the Andrew M. Greeley Center for Catholic Education and
Clinical Assistant Professor, School of Education
Loyola University Chicago

Kate Phillippo, Ph.D.
Professor, School of Social Work and School of Education
Loyola University Chicago