To everything, everyone, and every event that helps me complete me
ACKNOWLEDGMENTS

I am extremely grateful as I think back on my doctoral journey. There are plenty of people and experiences that have helped me become stronger and dedicated to my education. Without these people and experiences, I could not be who I am today. First of all, I want to thank my committee chair-Dr. Jacqueline Swank. She has helped, guided, and encouraged me. It is because of her mentorship and guidance that I can successfully complete my dissertation and my doctoral degree. I will keep her commitment and dedication to guide students in my heart, and will remind myself of this when I guide and mentor my future students. In addition, I want to express my appreciation to my committee members-Dr. Sondra Smith, Dr. John Super, and Dr. Kristen Kemple. I am grateful that they served as my committee members and provided me with valuable feedback and insight. I truly appreciate their help.

I would also like to thank all of the parents of the participants who allowed me to work with their children, the school counselors who participated in my study, and the observers-Han Wang and Shelby Machart who helped me observe the students. I also want to thank my husband, David Ho, who constantly encourage and help me throughout my doctoral study. He helped me overcome many difficulties that I encountered during the degree seeking process and also reminded me that I have to take care of myself. Lastly, I want to thank my family in Taiwan. My parents have always provided me with support, no matter what I do. They deeply helped me become who I am today. There is no word to express my appreciation to my parents. They are the best parents in the world. Also, thanks to my sister and brother who have always been supportive. Their encouragement was very important throughout my doctoral journey. I am extremely grateful. Thank you.
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<td>ADHD</td>
<td>Attention Deficit/Hyperactivity Disorder; ADHD is a common childhood disorder that is characterized by developmentally inappropriate levels of inattention, impulsivity, and hyperactivity (American Psychiatric Association [APA], 2013).</td>
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<td>ACT</td>
<td>Acceptance and Commitment Therapy; “A psychological intervention based on modern behavioral psychology, including relational frame theory, that applies mindfulness and acceptance processes, to the creation of psychological flexibility” (Hayes, Luoma, Bond, Masuda &amp; Lillis, 2006, p.9).</td>
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<td>ASCA</td>
<td>American School Counseling Association</td>
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<td>AST</td>
<td>Attention State Training; AST focuses on changes in state that result from experiences, such as mindfulness and interaction with nature.</td>
</tr>
<tr>
<td>AT</td>
<td>Attention Training; AT involves practices in conflict-control, working memory, and executive functions tasks.</td>
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<tr>
<td>EF</td>
<td>Executive Function; one component of attention, which includes updating of working memory, inhibition, and shifting.</td>
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<tr>
<td>MAPs</td>
<td>Mindfulness Awareness Practices; MAPs include exercises that help increase receptive attention to the here and now moment.</td>
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<td>MBCT</td>
<td>Mindfulness-Based Cognitive Therapy; A MBCT program combines mindfulness training (Kabt-Zinn, 1990) with elements of cognitive-behavioral therapy for depression (Beck, 1979) and typically lasts eight weeks.</td>
</tr>
<tr>
<td>MBSR</td>
<td>Mindfulness-Based Stress Reduction; MBSR is a program that integrates mindfulness to help people reduce stress and other conditions (i.e., pain). This program was developed by Jon Kabat-Zinn at the University of Massachusetts Medical Center in the 1970s.</td>
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Abstract of Dissertation Presented to the Graduate School of the University of Florida in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

ADDRESSING ATTENTION PROBLEMS THROUGH MINDFULNESS: THE EFFECTIVENESS OF A SCHOOL COUNSELING GROUP INTERVENTION

By

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August 2018

Chair: Jacqueline M. Swank
Major: Counseling and Counselor Education

Attention has an important role in students’ success in academic, personal, and social development. Students who struggle with attention problems may encounter difficulties in their academic performance and social relationships. Ray, Schottelkorb, and Tsai (2007) found that behaviors associated with ADHD negatively affected teachers and peers, which might further interfere with a child’s relationships and overall well-being at school. At school, attention problems is an issue school counselor can potentially address because they are trained to address human relations, problems solving, career development, learning theories, and program evaluation (Borders & Shoffner, 2003). However, there is currently no evidence-based intervention designed specifically for school counselors to address students’ attention problems. In this study, the researcher addressed this problem by adapting an existing mindfulness intervention to the specific needs of school counselors to address students’ attention problems.

The researcher used a single-case design to examine the effectiveness of the Mindfulness-Based Attention Group for Children (MBAG-C) with elementary school students ($N = 8$) recruited from a mid-size city school district in a state in the southeastern part of the United States. The researcher hypothesized that participation
in the MBAG-C would (a) decrease attention problems, (b) improve on-task behavior, and (c) increase mindfulness level. The participants were randomly assigned to either an intervention group or a comparison group. The results showed that the intervention effect for improving on-task behavior ranged from no effect ($N = 1$), debatable effect ($N = 2$) to very effective ($N = 2$) and for decreasing attention problems also ranged from no effect ($N = 1$), debatable effect ($N = 2$) to very effective ($N = 2$). In terms of the mindfulness level, the intervention group demonstrated improvements ranging from debatable effective ($N = 1$), moderate effective ($N = 1$), and very effective ($N = 3$). However, the effectiveness of improving students’ mindfulness level might be uninterpretable, compared to the comparison group. The researcher further discussed the comparison between the intervention and comparison group, limitations of the study, and implications for research and practice.
CHAPTER 1
INTRODUCTION

Overview

Attention issues have an important role in students’ success in academic, personal, and social development. As a result, it is important to address students’ attention problems and provide a supportive environment to facilitate students’ growth and development. However, “attention” is a complicated concept, with models describing attention by using several components, including alerting, orienting, executive functions (Petersen & Posner, 2012), dorsal system functions, ventral system functions (Corbetta & Shulman, 2002), directed attention, and involuntary attention (Kaplan & Berman, 2010). These components have important roles in students’ learning that may affect students’ academic performance, and their personal and social development.

Students’ attention issues can be addressed by teachers or other personnel when they occur. However, school counselors may assist teachers and other personnel in addressing attention issues in a systematic manner. Specifically, school counselors are trained to address human relations, problems solving, career development, learning theories, and program evaluation (Borders & Shoffner, 2003). Therefore, they are also helpful in addressing this issue from a broader perspectives. For example, school counselors can help reform a school culture that values students’ attention issues and their effects on student development.

Personnel can use several methods to address attention problems that are grouped within two categories: (a) attention training (AT), and (b) attention state training (AST) (Tang & Posner, 2009). The category of AT includes computer-based
interventions and curriculum-based programs. Whereas, AST includes mindfulness interventions and interaction with nature. Mindfulness is a feasible method for school counselors to use in addressing students’ attention problems, partially due to not having time and financial constraints that are associated with many other methods. This researcher found literature on interventions that mental health counselors and other professionals use inside and outside of the school to address attention problems, but no literature regarding interventions that school counselors use to address students’ attention. This is concerning because students need help and support consistently within the school to help them succeed. Therefore, this author adapted an existing mindfulness intervention that is used by community mental health professionals to provide school counselors with an intervention to address students’ attention problems. Additionally, the author examined the effectiveness of the intervention in addressing attention problems. In order to successfully adapt/develop an effective intervention to address students’ attention problems, several concepts need to be discussed, including students’ attention problems, attention models, school counselors, and mindfulness.

**The Influences of Attention Problems**

Students who struggle with attention problems might also encounter difficulties in their academic performance and social behaviors and relationships. Attention problems can not only mediate the relationships between academic achievement and problem behaviors, including withdrawing, somatic complaints, delinquent behavior, and aggressive behavior (Barriga et al., 2002), but also can predict children’s reading achievements after controlling for IQ, previous reading achievement, and other behavioral issues (Rabiner, et al., 2000). Specifically, there are several studies that
have examined the relationship between executive function (one component of attention) and school achievement (Best, Miller & Naglieri, 2011; Bull, Espy & Wiebe, 2008; Monette, Bigras & Guay, 2011; St Clair-Thompson & Gathercole, 2006). Executive function is an essential ability for learning since it controls three basic functions: shifting, updating, and inhibition. Shifting helps students change mental sets or tasks in multiple-task situations (Miyake et al., 2000). Updating monitors the working memory representations (Miyake et al., 2000). Inhibition is “one’s ability to deliberately inhibit dominant, autonomic, or prepotent responses when necessary” (Miyake et al., 2000, p.57). Scholars have found a relationship between executive function and academic achievement, including mathematics and English (Best, Miller & Naglieri, 2011; Bull, Espy & Wiebe, 2008; Monette, Bigras & Guay, 2011; St Clair-Thompson & Gathercole, 2006). Poor executive functioning has a negative effect on students’ academic achievement. Therefore, researchers report that early identification of attention problems may help prevent children from later experiencing achievement failures (Rabiner et al., 2000).

In addition to academic difficulties, attention problems also has a negative effect on children’s social behaviors and relationships. Specifically, there is a relationship between attention problems and prosocial skills deficits and aggressive and disruptive behavior (Bellanti & Bierman, 2000). Scholars also found that irritable-inattentive behaviors were associated with peer difficulties, including peer rejection, victimization, and antisocial activities (Pope & Bierman, 1999). Thus, the effects of attention problems can be profound; and therefore, it is important to address this issue as early as possible to help prevent future difficulties.
School Counselors

School counselors have an important role in helping children succeed in the school environment because they have a unique position in the school. They may work with students on an individual, small group, and classroom level, as well as through indirect ways such as consultation and collaboration. Based on the ASCA (2012) National Model®, school counselors should spend at least 80% of their time delivering services, including the school counseling curriculum, individual student planning, responsive services, and indirect student services. Through these delivery methods, school counselors provide students with evidence-based interventions to help improve their attention and prevent difficulties within academic, personal, and social domains. Additionally, school counselors are expected to provide evidence demonstrating the effectiveness of the school counseling program to justify funding and retention of school counseling programs as necessary components within the education system (Gysbers, 2004; Whiston & Sexton, 1998). With the empirical studies, school counselors not only can secure the funding but also evaluate the counseling services to further establish an effective school counseling program. Therefore, it is crucial for school counselors to collect and examine data to determine the effectiveness of the interventions they use with students.

Theoretical Framework

There were two important theoretical frameworks that guided this study, including attention models and mindfulness. In order to learn the effects of attention problems and how to address these issues, we first need to learn about how attention works and how it influences student learning. Learning about attention models provides a rationale for using mindfulness to address students’ attention problems.
Attention Models

Three main attention models include Corbetta and Shulman’s Goal-Directed and Stimulus-Driven Attention Model (2002), Kaplan’s Attention Restoration Theory (1995), and Petersen and Posner’s (2012) Attention System Model. These models help provide an understanding of how attention works and how it affects students’ learning. Corbetta and Shulman’s (2002) concepts of attention are similar to Kaplan’s (1995) Attention Restoration Theory, in that both models discuss how the brain controls our attention and also how the stimulus can drive our attention. However, these two models use different ways to label attention functions. Kaplan claimed that there are two types of attention, involuntary and voluntary attention. People use voluntary or directed attention when we intentionally focus on something (Kaplan & Berman, 2010). Corbetta and Shulman (2002) also called voluntary attention “top-down” attention. These two models explain why our brain takes control over our attention and how our brain needs a break in order to help us restore our attention and be able to focus again.

In developing the Attention System Model, Petersen and Posner (2012) proposed that our attention system is divided into several networks, including alerting, orienting, and executive control (Petersen & Posner, 2012). Alerting is the ability to achieve and maintain a condition of sensitivity to incoming stimuli. The orienting network aims to choose information from the stimuli for further processing. The executive control network manages the ability to resolve conflicts that result from competing stimuli that help us act in goal-directed, flexible, intentional ways. These abilities are essential for student learning. Therefore, addressing students’ deficits may help prevent academic and social difficulties.
Mindfulness

Mindfulness is rooted in Buddhist and other contemplative traditions that encourage conscious awareness and attention. Nyanaponika Thera (1972) called mindfulness “the clear and single-minded awareness of what actually happens to us and in us at the successive moments of perception” (p. 5). Hanh (1976) similarly defined mindfulness as “keeping one’s consciousness alive to the present reality” (p. 11). Scholars also describe mindfulness as “the awareness that emerges through paying attention on purpose, in present moment, and nonjudgmentally to the unfolding of experience moment by moment” (Kabat-Zinn, 2003, p.144). Several main concepts of mindfulness include curiosity, kindness, gratitude and generosity, acceptance, non-judging, non-striving, letting go, patience, humor, trust, and a beginner’s mind (Wolf & Serpa, 2015). Each of these concepts has an important role in the human mind and in reaching the goals of living mindfully.

Mindfulness interventions includes Mindful-Based Stress Reduction (MBSR), Mindful-Based Cognitive Therapy (MBCT), and Acceptance and Commitment Therapy (ACT). Scholars have found that mindfulness-related interventions have several benefits for promoting well-being and preventing illness (Chiesa & Serretti, 2011; Grossman et al., 2004; Piet & Hougaard, 2011; Powers et al., 2009). Additionally, scholars have found that mindfulness improves students’ executive functions (one important components of attention) (Flook et al. 2010). Researchers have also discussed the use of mindfulness concepts within the school setting (Meiklejohn et al., 2012), including use by school counselors (Tadlock-Marlo, 2011). Thus, although the researcher found no studies examining the use and effectiveness of mindfulness interventions that are used
by school counselors, scholars have encouraged school counselors to use of mindfulness.

**Statement of Problem**

“Attention problems” have a profound effect on students that includes negatively influencing students’ academic performance and their social interactions (Barriga et al., 2002; Bellanti & Bierman, 2000; Best, Miller & Naglieri, 2011; Bull, Espy & Wiebe, 2008; Duncan & Magnuson, 2011; Monette, Bigras & Guay, 2011; Pope & Bierman, 1999; Rabiner, Coie, & Conduct Problems Prevention Research Group, 2000; St Clair-Thompson & Gathercole, 2006). Additionally, Ray, Schottelkorb, and Tsai (2007) found that behaviors associated with ADHD negatively affected teachers and peers, which may further interfere with a child’s relationships and overall well-being at school. Thus, attention problems can negatively affect students’ school experiences, learning, and development. As a result, addressing attention problems in the school becomes an imperative issue.

**Need for the Study**

Rabiner et al. (2000) emphasize the importance of identifying and addressing attention problems early to prevent achievement failure. Others scholars have also found effectiveness in using various interventions to address attention problems (Bodrova & Leong, 2007; Davis et al., 2014; Flook et al., 2010; Harting, Mang & Evans, 1991; Jha, Krompinger & Baime, 2007; Klingberg et al., 2005; Mezzacappa & Buckner, 2010; Napoli, Krech & Holley, 2005; Rabiner et al., 2010; Sohlberg & Mateer, 1987; Semple, Lee, Rosa & Miller, 2010; Taylor et al., 2001; Tennessen & Cimprich, 1995). However, the interventions involved non-school personnel or facilitating the interventions outside of the school environment (Taylor et al., 2001; Tennessen &
Cimprich, 1995). Therefore, there is a need for providing interventions within the school that address students’ attention problems. School counselors are in a key position to deliver these interventions to help students succeed in academic, personal, and social domains. Mindfulness, in particular, is an appropriate intervention for school counselors to use within the school environment.

Scholars have examined the effectiveness of using mindfulness (Flook et al., 2010; Jha, Krompinger & Baime, 2007; Napoli, Krech & Holley, 2005; Semple et al., 2010) and found that mindfulness interventions can help improve students’ behavioral regulation and overall executive control (Flook et al., 2010), attention-related behavioral reactions including attention subsystems (Jha et al., 2007), selective attention (the ability to choose what to pay attention to), and teacher ratings of ADHD symptoms (Napoli et al., 2005). Additionally, students who participated in mindfulness interventions had fewer attention problems than students who did not participate, and the improvements were still present at the three-month follow-up (Semple et al., 2010). Thus, mindfulness can be a beneficial strategy to use in the school to help students overcome their attention problems. However, although researchers have found the concepts of mindfulness to be beneficial for school-age students and school counselors are the qualified personnel within schools to address students’ academic, personal, and social issues, there is almost no research focused on how school counselors can use mindfulness to address students’ attention problems and developmental issues. Therefore, there is a need for training school counselors to implement mindfulness interventions with students experiencing attention problems (Flook et al., 2010; Jha, Krompinger & Baime, 2007; Napoli, Krech & Holley, 2005; Semple et al., 2010). Thus,
the purpose of this study was to measure the effectiveness of a mindfulness
intervention facilitated by school counselors to address students’ attention problems.

**Research Question**

The research question for this study is: What are the treatment effects of using a Mindfulness-Based Attention Group for Children (MBAG-C) on third and fourth graders’ on task behaviors, attention behaviors (i.e. attention problems, inattentive behaviors, hyperactivity-impulsivity behaviors) and their levels of mindfulness?

**Overview of Chapters**

The Chapter 1 provided a foundation for the study, including a discussion of the rationale and purpose of the study. In Chapter 2, the researcher examines the literature related to the concepts of attention models, interventions for attention problems, mindfulness, and the role of school counselors. Chapter 3 focuses on the methodology for the study. In Chapter 4, the author discusses the results from examining the research questions. Finally, in Chapter 5, the author discusses the results, limitation, recommendation for future research, and implications for the counseling profession.
CHAPTER 2  
REVIEW OF THE LITERATURE

In Chapter 2, the author reviews the relevant literature for this study. The first section of this chapter introduces the attention system of human. There are three models that are relevant to this study and are essential to understand in order to learn the effects of attention problems in school. The next section addresses the differences between inattention, attention problem, and Attention Deficit/Hyperactivity Disorder (ADHD) and their influences on students’ development and achievement. Then, the author will present the interventions for addressing attention problems, specifically mindfulness, and how it can be helpful for addressing attention and implementing it with children and adolescents. Finally, the author discusses the role of school counselors in addressing attention problems by using mindfulness, as well as following the American School Counselor Association (ASCA, 2012) National Model Themes.

Attention System

Attention is a complex concept and there are multiple models describing its complexity (Corbetta & Shulman, 2002; Petersen & Posner, 2012). These models describe attention by using several components, including alerting, orienting, executive functions (Petersen & Posner, 2012), dorsal system functions, ventral system functions (Corbetta & Shulman, 2002), directed attention, and involuntary attention (Kaplan & Berman, 2010). These components all have important roles in students’ learning, which can affect students’ academic performance, and personal and social development. Models that describe attention include various components that serve as a basis for understanding the influence of inattention and how the current interventions work (See Figure 2-1). The author presents three attention models, including Corbetta and
Shulman’s Goal-Directed and Stimulus-Driven Attention Model (2002), Kaplan’s Attention Restoration Theory (1995), and Petersen and Posner’s (2012) Attention System Model. These models help provide an understanding of how attention works and how it affects students’ learning.

Goal-Directed and Stimulus-Driven Attention

Corbetta and Shulman (2002) proposed that attention is comprised of two separate systems: bilateral dorsal frontoparietal system (engaged in voluntary orienting) and right-lateralized ventral frontoparietal system (engaged in involuntary attention). Dorsal system functions are similar to “concentrative attention”, in which attention is restricted to a specific target. This type of attention is goal-oriented and is called “top-down” attention. For example, an individual may decide to focus on the letters that are written on the board in the classroom or pay attention to a person wearing a hat in a crowd. Both are examples of top-down attention because the individual attends to something intentionally (Pinto, van der Leij, Sligte, Lamme, & Scholte, 2013). On the other hand, ventral system functions parallel “receptive attention”, in which attention is more “objectless” and related to the present moment (Broww, 1977; Semple, 1999). This type of attention is involved in stimulus-driven attention, which is “bottom-up” attention (Corbetta & Shulman, 2002). For example, if an individual is paying attention to the teacher’s lecture and suddenly a big bang occurs, this loud noise would distract the individual’s attention. Similarly, if an individual is focused on the person who is wearing a hat in a crowd, and a person runs into the crowd and acts strangely, this unexpected stimulus may distract attention. These are examples of “bottom-up” attention because the stimuli drive the individuals’ attentions in both cases. Both “top-down” and “bottom-up” attention can happen in the classroom. However, top-down
attention is especially important in students’ learning since it is an ability for students to focus on the lectures and their academic works.

**Attention Restoration Theory**

Corbetta and Shulman’s (2002) concepts of attention are similar to Kaplan’s (1995) Attention Restoration Theory, in that both models discuss how the brain controls our attention and also how the stimulus can drive our attention. However, these two models use different ways to label attention functions. Kaplan claimed that there are two types of attention, involuntary and voluntary attention. People use voluntary or directed attention when we intentionally focus on something (Kaplan & Berman, 2010). Corbetta and Shulman (2002) also called voluntary attention “top-down” attention. In order to pay attention to something that is not interesting, we need to make a strong effort. On the other hand, involuntary attention does not need effort (Kaplan, 1995). People use involuntary attention when encountering something interesting and exciting (Kaplan, 1995). Another difference between directed and involuntary attention is related to frontal and parietal brain areas, which effect cognitive control (Corbetta & Shulman, 2002; Fan, McCandliss, Fossella, Flombaum & Posner, 2005). Directed attention depends more on the frontal and parietal brain cognitive control structures than involuntary attention (Corbetta & Shulman, 2002; Fan et al., 2005). Directed attention is also a common resource for both executive functioning and self-regulation (Kaplan & Berman, 2010). This author will further discuss these two concepts (executive functioning and self-regulation) in the next section.

**Attention System: Alerting, Orienting, and Executive Functions**

Petersen and Posner (2012) proposed that our attention system is divided into several networks, including alerting, orienting, and executive control (Petersen &
Posner, 2012). Alerting is the ability to achieve and maintain a condition of sensitivity to incoming stimuli. The orienting network aims to choose information from the stimuli for further processing. Furthermore, the executive control network manages the ability to resolve the conflicts that result from competing stimuli, which help us able to act in goal-directed, flexible, intentional ways.

The taxonomy of executive functioning is comprised of three basic functions (shirting, updating, and inhibition; Miyake et al., 2000). Shirting is the ability to change between mental sets or tasks in multiple-task situations (Miyake et al., 2000). This is also called cognitive flexibility (Diamond, Barnett, Thomas & Munro, 2007). Updating is related to working memory (Lehto, 1996) and consists of updating and monitoring the working memory representations (Miyake et al., 2000). Finally, inhibition includes “one’s ability to deliberately inhibit dominant, autonomic, or prepotent responses when necessary” (Miyake et al., 2000, p.57). Inhibition is a self-regulating ability, which is an “ability to control our thoughts, feelings, and behavior in developmental psychology” (Petersen & Posner, 2012, p.8). It is also an ability for us to “control reflective or otherwise dominant responses to select less dominant ones” (Petersen & Posner, 2012, p. 9).

Executive functioning and self-regulation require effort, which relies on a resource that is limited and is easily exhausted (Kaplan & Berman, 2010). Several studies have shown that the effort required for self-regulation is the same for executive functioning (Baumeister, Bratslavsky, Muraven & Tice, 1998; James, 1982). William James (1982) claimed that volitional effort, an endeavor of attention (James, 1982), is a characteristic of both self-regulation and executive functioning. He hypothesized that
willpower and effort encompass concrete ideas, including attention (James, 1982). Baumeister and his colleagues (1998) examined self-regulation among 67 college students majoring in psychology and found that self-regulation can worsen the performance of executive function since both functions require directed attention. Specifically, in the first experiment participants \(N = 67\) were assigned to eat either radishes or chocolates and then engage in problem solving tasks. The researchers found that if an individual was forced to eat radishes in front of more attractive cookies or suppress his emotions, then he would have more difficulty to persist in solving puzzles and would be less effective at the task, compared to individuals who were not forced to eat radishes and suppress their emotions.

The second experiment, involving 39 undergraduate students, addressed whether the same resource that was depleted by not eating chocolate would be depleted by making a choice. The researchers assigned the participants into three groups: counter-attitudinal choice (were asked to deliver a counter-attitudinal speech but gave them choices), counter-attitudinal no choice (were asked to deliver a counter-attitudinal speech but without choice), and no speech (control). The result of this experiment showed that making a choice uses the same limited resource that is used for self-control. Compared with participants who make a counter-attitudinal speech under low choice, participants who chose the same speech under high choice showed a drop in their persistence on a subsequent frustrating task.

The third experiment was designed to see whether ego depletion weakened the performance for solvable tasks. The participants \(N = 30\) in this experiment were asked to suppress their emotional response to a funny or sad video clip (an act of self-control).
After suppressing their emotions, they had poorer performance on solving cognitive tasks. Thus, this study indicated that there is a shared resource between self-regulation and executive function.

**Inattention, Attention Problems, and ADHD**

Inattention causes students to have poor concentration within the classroom and on their academic work. It is one of the characteristics of “attention problems,” which is used to explain a group of behavioral problems, including inattentiveness, distractibility, poor concentration, impulsivity, and hyperactivity (Friedman et al., 2007). Students with attention problems do not necessarily have ADHD. According to the Diagnostic and Statistical Manual for Primary Care (DSM-PC), problems in general are behaviors that are severe enough to interrupt normal interactions with others at school or at home, but not serious enough to meet criteria of a mental disorder (Felice & Drotar, 1996). Therefore, many students may have attention problems that are not severe enough to constitute an ADHD diagnosis.

ADHD is a common childhood disorder that is characterized by developmentally inappropriate levels of inattention, impulsivity, and hyperactivity (American Psychiatric Association [APA], 2013. Because ADHD has become increasingly prevalent among school-aged children, researchers and clinicians are devoting more attention to the disorder. In 2011, approximately 11% of children (6.4 million) between the ages of 4 and 17 had been diagnosed with ADHD, with the percent increasing from 2003 to 2011 (Center for Disease Control and Prevention [CDC], 2011). Children with ADHD experience personal, social, and academic difficulties in school. These difficulties influence academic success (i.e., maintaining attention, inhibiting impulsive responses, persisting with academic tasks). Children who have behavioral inhibition problems often
experience difficulty with waiting for their turn, or not interrupting conversations, which are essential to succeed in school. Behaviors associated with ADHD can also negatively affect teachers and peers, which may further interfere with a child’s relationships and overall well-being at school (Ray, Schottelkorb & Tsai, 2007). Students with ADHD often have significantly negative student-teacher interactions compared to those who do not have ADHD (Ray et al., 2007). Figure 2-2 illustrates the relationship between inattention, attention problems, and ADHD. Specifically, Figure 2-2 demonstrates that inattention is a component of attention problems, and both inattention and attention problems are the characteristics of ADHD.

**Academic Performance**

The ability to pay attention is essential for children to succeed in school. Several studies have examined the effects of inattention and attention problems on children’s performances in school (Barriga et al., 2002; Bellanti & Bierman, 2000; Duncan & Magnuson, 2011; Rabiner, Coie, & Conduct Problems Prevention Research Group, 2000). Barriga et al. (2002) explored the relationship between problem behaviors and academic achievement in adolescents ($N = 58$), with a special focus on the role of attention problems. They found that attention problems mediated the relationships between academic achievement and problem behaviors, including withdrawn, somatic complaints, delinquent behavior, and aggressive behavior. The researchers concluded that many problematic behaviors do not directly result in academic failure, but are associated with attention problems that create academic concern (Barriga et al., 2002). Additionally, Rabiner, Coie and the Conduct Problems Prevention Research Group (2000) assessed attention problems of 387 children from kindergarten through fifth grade to examine whether early attention problems predicted children’s reading
achievement or even lead to reading impairment for some of the children. They found that attention problems predicted children’s reading achievements after controlling for IQ, previous reading achievement, and other behavioral issues (Rabiner, et al., 2000). The researchers suggested that early identification of attention problems may help prevent children from later achievement failures (Rabiner et al., 2000). Duncan and Magnuson (2011) also examined attention and cognitive self-regulation skills in children’s learning and found that they increased the amount of time that children engaged in academic efforts, and also enhanced children’s ability to problem-solve. Thus, school personnel need to address attention problems to help students succeed academically.

Some researchers have examined the influence of executive functions, one component of attention, on school achievements (Best, Miller & Naglieri, 2011; Bull, Espy & Wiebe, 2008; Monette, Bigras & Guay, 2011; St Clair-Thompson & Gathercole, 2006). Best et al. (2011) examined whether age-related change in complex executive function (EF; updating of working memory, inhibition, and shifting) was related to academic achievement. This study was conducted with 2036 children and adolescent (age 5-17) by using the Cognitive Assessment System (CAS; Naglieri & Das, 1997) and Woodcock–Johnson Tests of Achievement–Revised (Woodcock & Johnson, 1989). The results indicated that complex EF performance improved until at least at age 15 and the correlation between complex EF and academic achievement was different across age groups. Furthermore, the results indicated a domain-specific (math and reading achievement) between complex EF and academic achievement (Best, Miller & Naglieri, 2011).
Bull et al. (2008) also examined the effect of executive functions on achievement, specifically in mathematics. They examined preschool students' \((N = 124)\) short-term memory, working memory, and executive functioning and assessed whether or not these factors predicted students' math achievement at seven years old. They were also interested in the changes in the pattern of cognitive predictors to math skills, and the influence of cognitive skills on math achievement. They used a mathematics outcome measure (Performance Indicators in Primary School; PIPS, Tymms, 1999) to measure participants' basic skills. Participants were assessed on their basic numbers, phonics, and reading skills at entry into primary school. The PIPS assessments were conducted again at the end of the first year of primary school and also at the end of the third year of primary school. The researchers also used the following predictor measures to examine change: (a) central executive tasks (Shape School, Espy, 1997; Tower of London, Korkman, Kirk, & Kemp, 1998), (b) short-term memory tasks, (c) working memory tasks (Corsi Blocks), and (d) digit span. These predictor variables were also assessed once during preschool. The researchers found that that cognitive skills correlated significantly with both mathematics and reading achievement at the beginning and end of the first year of primary school. Thus, researchers (Bull et al., 2008; Monette, Bigras & Guay, 2011; St Clair-Thompson & Gathercole, 2006) conclude that the components of attention (executive functions) affect students’ academic achievements.

Monette et al.'s (2011) examined executive functioning among 85 kindergartners to see whether it influenced the students’ school achievement at the end of grade one. Specifically, they focused on working memory (updating), flexibility (shifting), and
inhibition, and found that working memory and inhibition, measured in kindergarten, can predict students’ reading, writing, and math achievement at the end of grade one. Executive functions had a particularly important role in math achievement (Monette et al., 2011).

St Clair-Thompson and Gathercole (2006) also examined the relationship between executive functions and achievement in school. All participants (\(N = 51\), 11-and 12-year-old children) took a set of six executive tasks, which included two tasks designed to examine the functions of shifting, updating, and inhibition. The participants were also tested on four working memory tasks and the researchers obtained students’ achievement scores on national curriculum tests in English, mathematics, and science. The researchers found that working memory was closely associated with achievement in English and mathematics. Additionally, inhibition ability was linked with attainment in English, mathematics, and sciences.

**Social Behavior and Relationships**

Bellanti and Bierman (2000) examined the relationship between cognitive ability, and prosocial skill development, and inattention and disruptive-aggressive social behaviors among 387 children during their kindergarten year and also at the beginning and end of first-grade. The researchers found that children with lower cognitive abilities had a lack of prosocial behavioral skills in kindergarten and first grade. They were also less likely to be accepted by their peers. Thus, the researchers concluded that attention problems have a negative effect on children’s social behavior and peer relationships, predicting prosocial skills deficits and aggressive and disruptive behavior (Bellanti & Bierman, 2000).
Researchers have also found that self-regulation affects social interactions. Specifically, self-regulation is associated with attention and effective emotion regulation, which are essential for quality social interactions (Lopes, Salovey, Côté, Beers & Petty, 2005). Effective emotion regulation includes the ability to inhibit negative behaviors, and the capacity to flexibly and strategically respond to a situation that is emotionally arousing (Fox, 1994; Thompson, 1994). Lopes et al. (2005) recruited 76 junior and senior undergraduate students to measure their emotion regulation ability and quality of social interaction and found that individuals who rated themselves high on emotion regulation abilities, also viewed themselves more interpersonally sensitive. Additionally, their peers viewed them more favorably (Lopes et al., 2005).

Pope and Bierman (1999) examined irritable-inattentive behaviors and peer difficulties among 145 children. Specifically the researchers assessed the children once during grades 3-6 and again after four years (grades 7-10). The participants were interviewed individually when they were elementary school students and were asked about familiarity with their classmates. At the middle school level, the participants were again interviewed individually and were asked to complete two written forms to examine their friendships with their classmates and familiarity with their peers. There were also group sessions to assess peer relation and antisocial behaviors.

The researchers found that irritable and inattentive behaviors had an important role in predicting the stability and the severity of peer relationship problems in elementary school, and social dysfunction in middle school (Pope & Bierman, 1999). The students who only presented with aggressive behaviors without irritable-inattentive behaviors did not have the same difficulty with being accepted by their peers, compared
to the students who had both aggressive and irritable-inattentive behaviors. Students’ irritable-inattentive behaviors had a profound influence on peer relationships. The researchers concluded that children with aggressive and irritable-inattentive behaviors are more at risk for peer rejection, victimization, and antisocial activity, than children with aggressive behaviors alone. Children with irritable-inattentive behaviors are also more likely to complain, feel upset when called on in class, act like a baby, have difficulty concentrating, and be easily distracted (Pope & Bierman, 1999). Therefore, students with inattentive problems are more at risk in school. Furthermore, Ray, Schottelkorb, and Tsai (2007) found that behaviors associated with ADHD negatively affected teachers and peers, which may further interfere with a child’s relationships and overall well-being at school (Ray, Schottelkorb, & Tsai, 2007). Thus, inattentive characteristics create vulnerability for children in the school environment across academic, personal, and social domains.

**Interventions for Improving Attention**

Personnel have used a variety of trainings and interventions to improve students’ attention. Scholars classify interventions and trainings into two categories: (a) attention training (AT), and (b) attention state training (AST) (Tang & Posner, 2009). AT involves practices in conflict-control, working memory, and executive functions tasks. These practices usually involve repetitive trials to exercise executive control (Tang & Posner, 2009). The trainings and interventions in the AT category include computer-based interventions, and curriculum-based programs. In contrast, AST aims at changes in state resulting from experiences, such as mindfulness and interaction with nature.
**Computer-Based Interventions**

Computer-based interventions include Computerized Attention Training (CAT) and Computer Assisted Instruction (CAI). CAT involves using computers to provide a series of exercises, in which participants need to sustain attention and respond to a set of defined rules. If a participant succeeds in an exercise, the following exercises will become more challenging and require more attention. Thus, the students learn to attend through the organized practices (Rabiner et al., 2010). CAI involves presenting academic materials by providing instructional features through computers. Students receive instant feedback and reinforcements. Due to the requirement of sustained attention, CAI has an attention training effect (Rabiner et al., 2010). Rabiner et al. (2010) found that computer-based interventions helped first-grade students ($N = 77$) with their attention and academic performance (Rabiner et al., 2010).

RoboMem, a computer program designed for children age 7 to 12, has eleven exercises to train children’s visuo-spatial working memory, verbal working memory, and the combination of visuo-spatial and verbal working memory. Mezzacappa and Buckner (2010) trained nine students, who ranged in age from 8 to 10 years old, in using RoboMem and found that students showed improvements in their attention problems and working memory. Additionally, Klingberg et al. (2005) used RoboMem to train the working memory of children (age 7 to 12) with ADHD ($N = 53$) and found significant improvement in span-board task, which was a measure of visuo-spatial working memory. They also found that the training positively affected children’s response inhibition, verbal working memory complex reasoning, and parent ratings of ADHD symptoms (Klingberg et al., 2005).
Curriculum-Based Programs

Curriculum-based programs include Tools of Mind, Memory Mates, and the Pay Attention Program (Bodrova & Leong, 2007; Davis et al., 2014; Sohlberg & Mateer, 1987). Tools of Mind is a curriculum that teachers use with children in the classroom to help with executive functioning (Bodrova & Leong, 2007). This curriculum is based on Vygotsky’s (1978) social development and includes 40 activities designed to promote children’s executive functions, including regulating what one should say or do in a situation. It also provides support for facilitating children’s memory and attention (Diamond et al., 2007). In examining the effectiveness of the curriculum, Bodrova and Leong (2007) found that the curriculum had positive effects on inhibition ability and other executive functions-demanding tasks for preschoolers (N = 147) who had participated in this curriculum for one to two years.

Memory Mates is another curriculum-based intervention that involves eight strategies that classroom teachers can use to help students improve their attention and working memory (Davis et al., 2014). In using the curriculum, teachers adjust their class delivery and monitor students’ working memory overload. In examining the effectiveness of the curriculum, Davis et al. (2014) found that students’ working memory and attention improved when they used working memory strategies regularly within targeted lessons. However, the reader should interpret these findings with caution because the study involved only four participants and included only four lessons.

The Pay Attention Program is another curriculum-based intervention for children. This program was adapted from Attention Process Training Program (Sohlberg & Mateer, 1987), a program that was designed for adults and adolescents. The Pay Attention Program includes a series of activities that help children train and improve
their attention. Tamm et al. (2013) conducted a randomized clinical trial to examine the effectiveness of Pay Attention with specific goals of training sustained, selective, alternating, and divided attention of the students with ADHD. After receiving 16 bi-weekly sessions of Pay Attention, the children (ages 7-15) with ADHD ($N = 54$) showed significant improvement in multiple areas, including parent and clinician rating of ADHD symptoms, child self-reported ability to focus, and parent rating of executive functioning when compared to the control group (Tamm et al., 2013). Additionally, Kerns et al. (1999) used Pay Attention as a directed intervention with 14 children who ranged in age from 7 to 11 years old to examine whether this program improved children’s attention, academic efficiency, and behavioral rating. These participants were diagnosed with ADHD and during the intervention period, they were seen individually, twice weekly, for 30-min sessions for eight weeks. The researchers found that the children that participated in the program achieved better performance on attention and academic efficiency.

**Interaction with Nature**

Regarding interacting with nature, scholars report that nature has a restorative effect on directed attention. This effect may help make human functioning more efficient since people use their involuntary attention instead of directed attention when exposed to nature (Kaplan, 1995). Scholars have shown the relationship between restorative experiences and information-processing effectiveness, which is an important component of improving directed attention. Harting, Mang and Evans (1991), divided participants into three groups (wilderness vacationers [$N = 25$], urban vacationers [$N = 18$], and non-vacationers [$N = 25$]) and found that the wilderness vacation group did better on a proofreading test, which was a task that needed directed attention (Harting
et al., 1991). Additionally, Tennessen and Cimprich (1995) found that college students who were exposed to an all-natural view window \( (N = 10) \) did better on the Symbol Digit Modalities Test (SDMT), which is an objective measure of directed attention, compared to a “mostly natural view window” group \( (N = 10) \), “mostly built view window” group \( (N = 26) \), and an “all built view window” group \( (N = 26) \). Furthermore, Taylor, Kuo, and Sullivan (2001) examined the benefits of nature for children with Attention Deficit Disorder (ADD). The researchers surveyed the parents after the children were exposed to a nature or green environment, and found that following exposure to the environment, children with ADD functioned better than usual and had less severe attention deficit symptoms (Taylor et al., 2001).

Although there are strategies can be helpful for improving students’ attention issues, some of them might be expensive or need extra efforts to receive training and implement intervention, which might not be feasible for school counselors. However, mindfulness can be an effective method to address attention issues in school, and can be cost-free. When comparing mindfulness with using nature strategy, mindfulness intervention still have a level of structure, which can be easier for school counselors to implement without extensive trainings. Therefore, the author will focus on mindfulness as an intervention and introduce its concepts, its applications with children and adolescents, its’ positive impacts on young population, and some modifications for mindfulness intervention when using with children and adolescents. Further, the author will also discuss the studies that used mindfulness to address attention-related issues.

**Mindfulness**

**Mechanism of Mindfulness.** The definition of mindfulness is a function of an individual’s conscious, intentional choice and ability to be present in the current moment
This mindfulness concept is rooted in Buddhist and other contemplative traditions. Buddhist and other contemplative traditions encourage conscious awareness and attention. Nyanaponika Thera (1972) once called mindfulness “the clear and single-minded awareness of what actually happens to us and in us at the successive moments of perception” (p. 5). Hanh (1976) similarly defined mindfulness as “keeping one’s consciousness alive to the present reality” (p. 11). When individuals are mindful, they are fully aware through sensation, including visual, auditory, gustatory, tactile, cognitive, consciousness, and emotional human sensory features (Napoli et al., 2005). Mindful process has three main components, including attitude (“in a particular way”), attention (“on purpose”), and intention (“paying attention”) (Shapiro et al., 2006). Mindfulness practices require specific attitudes, which are the foundation of mindfulness. These attitudes include non-judgmental, acceptance, trust, patience, curiosity, and kindliness (Burke, 2010; Bishop et al., 2004; Kabat-Zinn & Hanh, 2009). In addition to attitude, attention is also important, which includes focused, broad, and sustained attention and the ability to switch one’s attention to one stimulus to another (Burke, 2010). Intention refers to “the intentionality one brings to directing, sustaining or switching attention” (Burke, 2010, p. 134). Intentional attention can be understood as the self-regulation of attention (Bishop et al., 2004). Through mindful process, individuals are able to develop a de-centered viewpoint on one’s experiences with a non-judgmental, objective perspective. Individuals would also witness their thoughts, sensations, and emotions as mindfulness phenomena (Burke, 2010).

**Mindfulness Approaches**

The predominant mindfulness approaches include MBSR (mindfulness-based stress reduction), MBCT (mindfulness-based cognitive therapy), and ACT (acceptance
Mindfulness-based stress reduction (MBSR). The assumptions of MBSR include (1) individuals are usually unaware of their here-and-now experiences and often act in an “automatic pilot” mode; (2) everyone is able to develop a capacity to sustain attention to mental content; (3) developing this capacity needs practices and time to gradually improve; (4) awareness of here-and-now experiences can provide individuals a better sense of life and help individuals become more aware of their active mind instead of unconscious reactiveness; (5) observation of mental content gradually helps individuals have better and truthful perceptions; (6) when more accurate perceptions of individuals’ mental responses to other stimuli are attained, individuals are more capable to effectively respond to the world (Grossman, Niemann, Schmidt & Walach, 2004). MBSR normally consists of 8 to 10 weekly group sessions and also includes a whole day “retreat” session. Typically, each session is 2.5 hours (Kabat-Zinn, 1982; Kabat-Zinn & Hanh, 2009). Each session has different mindfulness exercises, such as sitting meditations, body scans, and walking meditations, and the participants are encouraged to do mindfulness exercises outside of the sessions. Mindfulness techniques focus on helping participants become more aware of their thoughts and feelings and also develop a perspective on thoughts and feelings that is non-judgmental. Through practicing mindfulness techniques, participants are able to develop the ability to calmly separate their thoughts and feelings from the facts, which help them avoid suffering from negative thinking (Bishop, 2002). For example, during a sitting meditation, participants are asked
to sit comfortably with an upright sitting posture, while attempting to sustain attention to the breath. If the mind/attention starts to wonder, the participants are asked to gently acknowledge and accept their thoughts and feelings and let go of them, while bring their attention back to the breath. By practicing this technique, participants gradually learn to observe and accept their thoughts and feelings without judging them (Bishop, 2002).

People use MBSR to reduce stress and lessen suffering due to physical, psychosomatic, and psychiatric disorders (Grossman et al., 2004). Grossman et al. (2004) conducted a meta-analysis to examine the effectiveness of MBSR with people with various health issues (i.e., stress, Fibromyalgia, mixed cancer diagnoses, coronary artery diseases, depression, chronic pain, anxiety, obesity and binge eating disorder, psychiatric problems) and found that the mindfulness training had consistent and relatively strong effect sizes across different samples, leading the researchers to conclude that mindfulness training may enhance an individual's ability to cope with stress and health issues in daily life, even under extraordinary situations (Grossman et al., 2004).

**Mindfulness-based cognitive therapy (MBCT).** A MBCT program combines mindfulness training (Kabt-Zinn, 1990) with elements of cognitive-behavioral therapy for depression (Beck, 1979) and typically lasts eight weeks. In MBCT, individuals learn a new way of paying attention to their thoughts, further reducing their tendency for depressing thinking (Ma & Teasdale, 2004). One aim of MBCT is to address individuals' cognitive reactivation (Segal et al., 2002). Additionally, the purpose of mindfulness skills is to help individuals to be aware of distressing thoughts and feelings with acceptance and self-compassion. By cultivating this awareness, individuals are able to help prevent
depression relapse (Segal et al., 2002). During the first three sessions of MBCT, individuals learn intentional attention by practicing a range of core mindfulness techniques, such as the body scans, mindfulness movement and mindful breath. Through mindfulness practices, individuals develop attention to be aware of the habitual patterns of reactivity during meditation, such as negative thoughts. Individuals become aware of their judgmental thoughts (Kuyken et al., 2010). Other mindfulness-based activities of MBCT includes guided or unguided exercises that aim at increasing non-judgmental awareness of any negative or depressive thoughts, feelings, and emotions. This process is also referred to as “decentring” (Ma & Teasdale, 2004).

In terms of the effectiveness of MBCT, two meta-analysis studies have examined the effectiveness of MBCT on psychiatric disorders and the prevention of relapse in recurrent major depressive disorder (Chiesa & Serretti, 2011; Piet & Hougaard, 2011). Chiesa and Serretti (2011) found that MBCT and treatment as usual (TAU) is more effective to prevent relapse or recurrence rates of major depression over the period of one year, compared to only TAU. They also reported that MBCT has similar efficacy to antidepressants in regards to major depression relapses. In addition, MBCT was useful in reducing residual depressive symptoms in patients with major depression, and in reducing anxiety symptoms in patients with anxiety and bipolar disorders (Chiesa & Serretti, 2011). Piet and Hougaard (2011) analyzed six randomized control trials with a total of 593 participants and also found that MCBT can reduce the risk of relapse in major depression, when compared to treatment as usual or placebo controls, with a relative risk reduction of 34%.
Acceptance and commitment therapy (ACT). Hayes, Luoma, Bond, Masuda and Lillis (2006) defined ACT as “a psychological intervention based on modern behavioral psychology, including relational frame theory, that applies mindfulness and acceptance processes, to the creation of psychological flexibility” (p.9). ACT has six essential treatment processes: (a) acceptance (b) defusion (c) contact with the present moment (d) self as context (e) values and (f) commitment action (Powers, Zum Vörde Sive Vörding & Emmelkamp, 2009). The goal of ACT is to “provide an account of human behavior, including private events, linked with a technology of prediction and change” (Coyne, McHugh & Martinez, 2011, p.380).

Powers et al. (2009) conducted a meta-analysis of 18 randomized control trials of ACT with 917 total participants. The researchers concluded that ACT is more effective than control conditions for several problem conditions, including worksite stress, anxiety, chronic pain disability, chronic low back pain, and weight control. Furthermore, they found that short one-time ACT training showed similar effect sizes to long-term therapy.

Mindfulness with Children and Adolescents

Researchers have reported several benefits of using mindfulness with children and adolescents, including decreasing stress, improving self-confidence, relationships with others, attention, optimism, and self-esteem (Fisher, 2006; Schonert-Reichl & Lawlor, 2010; Valentine & Sweet, 1999). Mindfulness is also helpful for cognitive change, self-management, relaxation, and acceptance attitude (Beisser, 1970; FoDoR & Hooker, 2008; Kabat-Zinn & Hanh, 2009). There is a growing movement to use mindfulness with children and adolescents, such as The Hawn Foundation MindUP program (Hawn, 2011), and the Inner Resilience Program (Lantieri & Goleman, 2008).
These programs aim to help young people develop abilities to self-regulate and cope with stress, and improve their social-emotional skills (Lantieri, 2008; Maloney, Lawlor, Schonert-Reichl & Whitehead, 2016).

The MindUP program is a classroom-based program that is based on cognitive developmental neuroscience, contemplative science and mindfulness, and positive psychology (Maloney et al., 2016). This program aims at developing children and adolescents’ social and emotional skills by using activities that promote students’ social and emotional learning (SEL) competencies, such as self-awareness, attention awareness, regulation of stress, self-management, social awareness, relationship skills, and responsible decision-making (Maloney et al., 2016). Each lesson of the MindUP program includes mindfulness practices. Students have opportunities to learn about their brain; the relationships between their thoughts, feelings and their actions; and strategies to become a caring person (Maloney et al., 2016).

Schonert-Reichl and Lawlor (2010) examined the effects of the MindUP program among 246 fourth- to seventh-grade children who attended public elementary schools in Vancouver, BC. They used questionnaires as pre- and post-test to assess students’ mindfulness attention, awareness, optimism, self-concept and social and emotional understanding, such as emotional awareness, reflection, and rumination. They also used a teacher-rating scale to assess the dimensions of social and emotional competence and aggressive behaviors (Schonert-Reichl & Lawlor, 2010). The researchers found that students who participated in the MindUP program showed significant improvement on teacher-rated school behaviors, such as attentional control, aggression, social-emotional competence, and behavioral dysregulation. The students
also reported improved optimism and mindful attention (Schonert-Reichl & Lawlor, 2010).

The Inner Resilience Program is another mindfulness- and classroom-based program that aims at helping children and adolescents to have the capacities to control their thoughts, emotions, and actions. It is also designed to create an inner space for students, teachers, and schools. This program teaches students mindfulness techniques and also helps school create a mindfulness environment for students to regain their inner balance and flow (Lantieri, 2008). To measure the effectiveness of the program, Metis Associates conducted a randomized control trial (RCT) to examine students and teachers’ well-being and the overall classroom climate (Metis Associates., 2011). The dimensions of teachers’ well-being included stress level, burnout, coping abilities, mindfulness, attention, job satisfaction, and relationships with colleagues. Regarding students’ emotions and behaviors, scholars measured students’ attention level, aggressive behaviors, depressive temper, frustrated moods, pleasure sensitivity, and sensitivity of perception. The researchers measured classroom climate through teachers’ leadership and management type and whether or not the environment was supportive. There were 57 teachers that participated in the study, with 29 teachers and their students assigned to the treatment group and 28 teachers and their students assigned to control group. The researchers found that teachers who participated in the program experienced reduced stress, improved attention and mindfulness skills, and better perceived trust relationships with their colleagues. Students exhibited lower frustration rates and lower perceptual sensitivity. Furthermore, regarding the classroom climate, there was better autonomy and influence with supportive atmospheres.
Self-management techniques of mindfulness practices might be the factor that makes mindfulness suitable for children and adolescents, since self-management is crucial for growth and development (Semple, Reid & Miller, 2005). With self-management techniques, children and adolescents have a better ability to manage their attention, increase their self-awareness, and reduce anxious symptoms (Semple, Reid & Miller, 2005). Children can also potentially improved their impulsive behaviors and decreased their reactivity when encountering challenging events with their improved self-awareness (Thompson & Gauntlett-Gilbert, 2008).

The mindfulness approaches discussed above (MBSR, MBCT, and ACT) have also been used with children and adolescents. In this section, the author will focus on MBSR and MBCT, since these interventions have more empirical-based support with youth. More research is needed regarding the use of ACT with children. Researchers have adapted MBSR for use with children and adolescents and have found positive outcomes with this population (Biegel, Brown, Shapiro, & Schubert, 2009; Saltzman & Goldin, 2008). Saltzman and Goldin (2008) enrolled 24 families (31 children and 27 parents) in the child-parent MBSR program. Their modified program was eight sessions (two for the first week and one every week for the rest sessions), and the time for each session varied from 40 to 90 minutes per class, depending on the setting and class size. After completing this MBSR program, the children showed improvements in their attention, self-regulation, social competence, and general well-being (Saltzman & Goldin, 2008). Professionals has also used MBSR successfully with adolescents. Biegel and colleagues (2009) adapted MBSR to adolescents (MBSR-T) ages 14 to 18 years with heterogeneous diagnoses in an outpatient psychiatric facility ($N = 102$). After the
intervention, the adolescents who received MBSR-T reported positive effects including reduced symptoms of anxiety, depression, and somatic distress, and increased self-esteem and sleep quality (Biegel et al., 2009).

In addition to MBSR, scholars have found positive results with using MBCT with children (Semple & Lee, 2008; Semple, Lee, Rosa & Miller, 2010). Scholars have adapted MBCT for children, which is designed to improve children’s self-management of attention, encourage “decentering”, and enhance emotional self-regulation (Rempel, 2012; Semple & Lee, 2008; Semple, Lee, Rosa & Miller, 2010). Lee, Semple, Rosa and Miller (2008) found that participants (N = 25, age 9-12) that participated in the MBCT-C intervention had decreased internalizing and externalizing symptoms. They also reported that the children responded well to the instruction of mindfulness and were able to understand the concepts of mindfulness and integrate them into their daily lives (Lee et al., 2008).

Modification for mindfulness with children and adolescents. Since children and adolescents are developmentally different from adults, using age appropriate strategies is crucial in using mindfulness with this population. Researchers found that providing a detailed explanation and rationale of mindfulness practices to children and adolescents increased effectiveness. The language professionals use to introduce and explain mindfulness should be age-appropriate and may also include metaphors (Saltzman & Goldin, 2008; Kornfield, 2009). For example, Saltzman used “Still Quiet Place” to describe the ideas of mindfulness to children. She described this as a place inside everyone that will make you feel warm with a happy smile inside. “Still Quiet Place” is also a good place to talk to any angry, sad, or afraid feeling a child might
experience (Saltzman & Goldin, 2008). Kornfield (2009) also used “puppy” to describe our inner mind that we want to train to sit still. She stated that our “puppy” is easily distracted and that is normal. However, we need to notice that our “puppy” is running away and then gently bring it back and try to teach it sit down again (Kornfield, 2009). Through the use of this metaphor, young children are able to better understand the abstract concept of mindfulness.

Using a variety of mindfulness practices is also important and may include mindful eating, meditation, and mindful use of the phone (Thompson & Gauntlett-Gilbert, 2008). Varying practices not only keeps children and adolescents engaged in the practices, but also encourages them to apply mindfulness to their daily lives. Mindful walking is one way that children can integrate mindfulness daily. By assigning homework, children can practice skills to further integrate them into their lives (Thompson & Gauntlett-Gilbert, 2008). Keeping practice short is also important, especially for young children. Saltzman and Goldin (2008) recommend that children practice one minute per their age in years for a single formal practice. For example, a five year old child can usually complete a five minutes mindfulness practice without losing patience. If a discussion of the experience follows the practice, Saltzman and Goldin (2008) recommend that experience-sharing should be limited to a few children, instead of letting all of the children share because if the discussion becomes long, children may become restless.

**Mindfulness and Attention**

Several studies have shown that there are positive effects of mindfulness on attention (Flook et al., 2010; Jha, Krompinger & Baime, 2007; Napoli, Krech & Holley, 2005; Semple, Lee, Rosa & Miller, 2010). Through mindfulness training, people modify
their attention subsystem. Jha et al. (2007) used a mindfulness-based stress reduction (MBSR) course and an intensive mindfulness retreat to examine whether mindfulness training can alter or enhance specific aspects of attention. The intervention involved 3-hour classes for 5 weeks and encompassed daily sitting meditation practice, group discussions, and interactive mindfulness-based exercises. The course followed the book “Mindfulness Meditation for Everyday Life” by Kabat-Zinn (1994). Participants were also asked to practice meditation 30 minutes per day as an assignment. For the retreat group, participants joined an intensive one-month residential mindfulness retreat. These participants engaged in formal mindfulness meditation practices for 10-12 hours per day, lasting 30 days. The retreat group activities followed the book “The Myth of Freedom and the Way of Meditation” by Trungpa (1975). Researchers found that mindfulness training improved attention-related behavioral reactions, including attention subsystems (alerting, orienting, and executive functions; Jha et al., 2007).

Mindfulness intervention can also have positive effects on children’s attention. Semple et al. (2010) evaluated a 12-week mindfulness-based cognitive therapy for children (MBCT-C) intervention for 25 children that ranged in age from 9 to 13 years old. MBCT-C is a manualized group psychotherapy program that consists of group interaction (i.e., games, activities, movements) and a variety of sensory exercises to emphasize non-judgmental awareness toward perceptual experiences and intrapsychic events. This program also invites parents to engage in the process. The results of this study indicated that children who participated in the program had fewer attention problems than the students in the control group, and the improvements were still present at the three-month follow-up (Semple et al., 2010). In addition, Flook et al.
(2010) explored the effectiveness of an eight-week intervention that met twice a week and focused on the effect of mindful awareness practices (MAPs) on children’s executive functions. They used a randomized control study with 64 second- and third-grade children (ages 7-9). The MAPs included exercises that help increase receptive attention to the here and now moment. One of the common exercises emphasized directing attention to a current experience or sensation. Through different types of mindfulness exercises, the children learned to initiate, monitor, and shift their attention (Flook et al., 2010). For example, children needed to bring their attention to their breath (initiate) and then pay attention to their breath and mind (monitor). If their mind started to wonder, they needed to gently direct their attention back to their breath (shift). The results of this study showed that the students who have poor executive function improved their behavioral regulation and overall executive control after participating in MAPs. Their improvements also generalized across different settings (i.e., home, school).

Additionally, Napoli et al. (2005) used a 45 minute, 24-week, mindfulness training to train first, second, and third graders ($N = 194$). The training included breathing exercises, scanning body, and activities that involved sensorimotor awareness. The goals of the training were to help children learn to (a) improve their attention to the current experience, (a) address each experience without judgement, and (c) view every experience with a “beginner’s eye” (Napoli et al., 2005). The students in the experimental group increased their selective attention (the ability to choose what to pay attention to) and improved on teacher ratings of ADHD symptoms. Thus research supports the use of mindfulness activities to improve attention.
Rani and Rao (1996) also reported that children (9-11 years old, \( n = 19 \)) who participated in a Transcendental Meditation (TM) showed increased attention regulation on the Star Counting Task, compared to the children who did not participate in any meditation (\( n = 20 \)) (Jong & Das-Smaal, 1995). The Star Counting Task is designed to assess attention regulatory function, which based on the working memory model (Baddeley, 1986) in combination with the concept of the supervisory attentional system (Norman & Shallice, 1986). Transcendental Meditation is a concentrative meditation technique developed by Maharshieh Yogi, and this technique is defined as turning the attention inwards towards subtle thought until the mind become the source of the thought (Yogi, 1963). The premise of this technique is that internalizing of attention results in the “expansion of the conscious mind” (Yogi, 1967, pp.350).

The Roles of School Counselor

With children spending five days a week and an average of 6.5-7 hours in school, the school counselor becomes an important person in addressing students’ attention problems, due to their training and unique position in the school. Beginning in late 1960s, school counselors became more aware of the need to provide preventative services to address problems using educational activities, instead of only intervening during crises. Educational activities can increase social awareness, promote healthy adjustment, increase the abilities to problem solve interpersonal issues, and develop vocational concepts (Wittmer, 2000). School counselors also implement strategies to prevent further school-related difficulties. School counselors help the school population prevent academic failure and social and personal difficulties due to attention problems.

School counselors have an important role in helping children succeed in the school environment because they have a unique position in the school. They may work
with students on an individual, small group, and classroom level, as well as through indirect ways such as consultation and collaboration. Based on the ASCA (2012) National Model®, school counselors should spend at least 80% of their time delivering services, including the school counseling curriculum, individual student planning, responsive services, and indirect student services. Through these delivery methods, school counselors can provide students with evidence-based interventions to help improve their attention and prevent difficulties within academic, personal, and social domains.

The ASCA National Model Themes include leadership, advocacy, collaboration, and systemic change as part of the framework of the ASCA National Model (The Education Trust, 1997). These four themes provide a rationale for school counselors to develop a program or an intervention that is comprehensive. In other words, school counselors do not work separately from others and need to consider several factors when helping students. School counselors need to use their leadership skills to support student academic achievement and their development needs.

Regarding leadership, school counselors should use their leadership practices to help school personnel become aware of the effects of attention problems and the negative influences on academic achievements and future development. Mason (2010) stated that there is a relationship between practicing leadership skills and school counseling program implementation. School counselors who practice leadership skills are more likely to fully implement their program in the school (Mason, 2010). They can “follow through on promises and commitments” and “set an example for what is expected of others”. They are also “treating others with dignity and respect” and
“developing cooperative relationship with others” (Mason, 2010, p.282). School counselors or school counseling students will be able to practice leadership skills when communicating with teachers regarding the importance of addressing students’ attention problems. Advocating for students’ academic achievement is an important task for school counselors (ASCA, 2012, p. 4). Since the attention problems have negative effects on students’ academic achievement, school counselors need to advocate for addressing attention problems in the school.

In considering the inclusion of mindfulness by school counselors, Tadlock-Marlo (2011) suggested that the implementation of mindfulness might be helpful for increasing students’ academic achievement, developing social skills, and learning coping skills to improve students’ personal quality of life. Through practicing mindfulness, students may gain a sense of empowerment, which will help students learn and accept personal responsibilities for their lives, and recognize that some externalizing events are beyond their control (Tadlock-Marlo, 2011). By mindfully exploring and learning oneself, students will be able to find more appropriate coping skills addressing stressful and upset events. Students will gradually learn to respond to every unpleasant situation instead of directly reacting to it. This is a primary tenet of counseling session within the ASCA (2012) National Model. Thus, mindfulness can be a useful tool and concept for school counselors.

**Chapter Summary**

This literature review has provided a rationale for the study, which addresses the functions of attention and discusses how attention problems can have negative effects on students. Then, the author examined mindfulness as an effective intervention to address attention issues, which also addressed the modification to mindfulness when
using it with children. Finally, the author discussed the role of the school counselor and the importance for school counselors to address attention problems in the school.

The current study will examine the effects of mindfulness on students’ attention and levels of mindfulness through the MBAG-C. Providing mindfulness instruction to school counselors-in-training and practicing school counselors is intended to help them implement a mindfulness intervention in a small group format. Chapter 3 focuses on the methods for the study, including the design, participants, sampling, training and implementation procedures, data collection, and data analysis.
Figure 2-1. All of the components make up the attention system.
Figure 2-2. The relationships between inattention, attention problems, and ADHD.
This chapter outlines a study designed to examine the effectiveness of using a mindfulness intervention facilitated by school counselors to address attention problems. The author discusses the research design, participants, treatment fidelity, instrumentation, and data analysis. Furthermore, the researcher outlines the mindfulness intervention.

Research Design

The research used an A-B-A single-case research design (SCRD) to examine the effectiveness of a mindfulness intervention on improving third and fourth graders’ attention (attention problems and on-task behaviors) and mindfulness. The researcher chose a SCRD due to (a) the feasibility of completing both intervention and outcomes measurement, and (b) access to the students who meet the recruitment requirements. This design is especially useful in school counseling studies due to its self-comparing characteristic. Single-case design research reveals more precise findings regarding individual’s behavior changes, which are usually unclear in the group results (Lundervold & Belwood, 2000). Furthermore, the school counselor may have greater interest in a single student’s improvement (i.e., single-case design study), instead of the average behavior of the group (i.e., group design study). Morgan and Morgan (2003) also suggested that SCRD is the most appropriate design to examine individual behavior change. They reported that SCRD studies assess relationships between variables, and also rule out threats to validity (Morgan & Morgan, 2003). In SCRD, individual participants serve as the unit for data analysis (Lundervold & Belwood, 2000;
Sharpley, 2007). Additionally, within this type of experimental research, the single case can be an individual, a system, or a group (Morgan & Morgan, 2009). Barlow and Hersen (1984) reported that the advantage of a SCRD is that the researchers can easily isolate the cause for behavior change and determine what components or procedures of the intervention result in behavior changes. Other advantages of using a SCRD include (a) identifying individuality among subjects, and (b) evaluating the effects of a treatment immediately, which allows for improvisation in treatment techniques to more readily isolate cause and effect (Foster, Watson, Meeks & Young, 2002).

**Participants**

The target population for this study was elementary school children in the third and fourth grades identified as having attention problems within the school setting. The participants included three female fourth graders (Sophia, Brittany, and Vivian), three male fourth graders (Jason, Eric, and Peter), one female third grader (Daisy), and one male third grader (Gavin). All of the participants’ names are pseudonyms. In order for children to be eligible to participate in the study, they needed to score within the borderline or clinically significant ranges for attention problems on the Teacher’s Report Form (TRF; Achenbach & Rescorla, 2001). The participants attended schools in one mid-size city school district in a state in the southeastern part of the United States.

**Intervention**

The researcher developed the mindfulness intervention (MBAG-C) based on her own mindfulness practice, experience teaching mindfulness as a component of a stress and anxiety management course, in-depth study of the literature on mindfulness including existing mindfulness programs for children, and experience working with children and adolescents as a school counselor. The mindfulness intervention is based
on the concepts of the InnerKids program (Flook et al., 2010) and the Attention Academy program (Napoli, Krech & Holley, 2005), which include breathing, sensory awareness, non-judgement, and choosing to respond versus react. These two mindfulness programs have evidence supporting their effectiveness in improving children and adolescents’ attention (sustained attention, selective attention, and executive functions). However, the interventions were facilitated by community mental health professionals in either school settings or settings outside of the school. Additionally, they were facilitated over an extended period of time. Therefore, research is needed to examine the effectiveness of a mindfulness intervention delivered by school counselors in a brief format that is realistic within the school setting.

One significant difference between the current intervention and the Attention Academy program is the length of the intervention. The length of Attention Academy program is 45 minutes bi-monthly for 24 weeks. In contrast, the MBAG-C is 30 minutes for 6 weeks. The similarities between the two interventions include the use of a variety of activities within each session that are focused on addressing mindful breathing, sensing, movement, and thoughts and emotions. Some activities in the MBAG-C are the same as the activities in the Attention Academy program. The researcher received permission from the author of the Attention Academy program (Dr. Maria Napoli) to use these activities. The remaining activities are different, but they emphasized the same core concepts as the activities in the Attention Academy program and the InnerKids program, such as practicing mindful breathing, mindful sensory, mindful thoughts and emotions, and mindful movement. Due to the accessibility of the InnerKids program, the researcher used limited components from this program, such as the inclusion of mindful
breathing. Thus, the structure of the current intervention is more similar to the Attention Academy program.

The facilitators conducted the mindfulness intervention in six small group sessions, with a session duration of 25 to 30 minutes. The rationale for having 30-minute sessions is that this is usually the time frame that school counselors have to facilitate small groups within the school schedule. Another reason for having six sessions was to examine whether fewer sessions of mindfulness could also positively affect students struggling with attention problem. Although this was a brief intervention, it emphasized mindfulness practices that extended beyond the small group sessions, with students being encouraged to continuously practice mindfulness skills that they learned in the group. The school counselors checked in with the students about their mindfulness practices when they met for the group sessions.

The intervention focused on introducing mindful breathing, with the breathing exercises focused on helping children learn how to pay attention to their own breathing. Breathing is the fundamental technique in mindfulness. Kabat-Zinn (2003) defined mindfulness as “the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment” (p. 144). Focusing on one’s breathing is the first step in paying attention by being in the present without one’s mind wondering. Breathing is also the core concept in both the InnerKids program (Flook et al., 2010) and the Attention Academy program (Napoli et al., 2005). The group facilitators emphasized the concept of breathing during every session. Students learned how to pay attention to their breathing in a nonjudgmental way and with self-awareness. Sensory awareness was a second area of
focus within the mindfulness intervention. It is “the direct focus on some specific sensory aspect of the body or outer or inner environment — is a frequently occurring yet rarely recognized phenomenon of inner experience” (Hurlburt & Heavey, 2009, p. 231). The researcher aimed to use the intervention to help students gain awareness through five senses, including listening, seeing, tasting, smelling, and touching.

The third component was “nonjudgmental”, which also refers to acceptance. Students in this intervention not only learned to be mindful with their sensory and breathing, but also learned to be kind to their experiences with curiosity and compassion. The final component was “choosing to respond versus react”. The facilitators introduced this concept last because students need to learn mindful awareness to distinguish the difference between responding and reacting. An outline of the MBAG-C is in Appendix G.

Facilitators need to be aware of the ethical issues of implementing mindfulness techniques with clients. Facilitators were encouraged to personally practice mindfulness daily, in order to fully understand the concepts of mindfulness, before implementing the intervention with students. The focus of the mindfulness training was to introduce the concepts of mindfulness to the school counselors, and also to strive to foster mindful attitudes among the school counselors. The school counselors were encouraged to practice mindfulness in their daily lives before implementing the session, and to be especially mindful during the intervention sessions with the students. This provided students with a role model in practicing mindfulness.

**Treatment Fidelity**

The researcher took several steps to ensure the fidelity of the treatment. First, the researcher developed a detailed manual to use in implementing the MBAG-C,
including instructions for the activities, timeframe for each small group session, and discussion questions for the activities. Second, the researcher scheduled a meeting with the group facilitators (school counselors) to discuss the effects of mindfulness on students’ attention and the concepts of mindfulness, and train them in facilitating the MBAG-C. The school counselors also completed a session reflection journal (Appendix H) to record the experiences in the small group sessions, including any obstacles and how the facilitator addressed them. Furthermore, the researcher watched some of the sessions live (six sessions in one group and two sessions in the other group) to assess the degree that the facilitators conducted the sessions consistent with the intervention manual (see Appendix I for the fidelity checklist). The degree of consistency between the two group facilitators was 85%. After each session, the researcher also checked in with the group facilitators to ensure that there were no significant issues with implementing the intervention.

**Procedures**

After receiving approval from the institutional review board (IRB) at her institution, the researcher sent out recruitment emails to eight practicing school counselors in one mid-size city school district in a state in the southeastern part of the United States. Upon receiving interest from three school counselors, the researcher obtained approval from the school district to conduct the study within these schools. Following school district approval, the researcher met with the school counselors individually to discuss the study, schedule a training session, and discuss the potential student participants. The researcher also discussed the consent process and participant recruitment with the practicing school counselors. Before the mindfulness training, one of the school
counselors withdrew. Thus, there were two school counselors that participated in the study.

During the training session, the researcher discussed the effects of mindfulness on students’ attention and the concepts of mindfulness with the school counselors. The counselors also completed the Mindful Attention Awareness Scale (MAAS) and a short demographic questionnaire at the beginning of the training. During training, the school counselors also received the materials to facilitate the intervention.

The two practicing school counselors identified students for the study based on their interactions with students with attention problems and through consultation with the teachers. The researcher then obtained consent from each child’s parents through written (letter sent home with child for parents) or verbal (phone call to parents) response. Additionally, the researcher obtained verbal assent from the children. The researcher then had the teachers complete the TRF for these students to determine eligibility for the study. Students were eligible for the study if they scored in the borderline or clinical significant ranges on the attention problems subscale, which included inattention and hyperactivity-impulsivity. After determining eligibility, the researcher randomly assigned students to the treatment or the comparison group. However, due to the preference of one of the school counselors to have all of her identified students participate in the intervention, one participating school had only students in the intervention group and no students in the comparison group. The researcher used the Direct Observation Form (DOF; McConaughy & Achenbach, 2009) to obtain data regarding participants’ attention problems and on-task behaviors. In following an A-B-A SCRD, the researcher collected baseline data for three weeks
before the facilitators implemented the intervention. Then, the researcher continued obtaining data throughout the duration of the intervention and for three weeks following the intervention phase. There were three observers for this study that rated students behaviors using the DOF. Two of the observers were master’s level school counseling students and the third observer was the researcher. The three observers rated the participants three times each week using the DOF, and then the researcher averaged the three weekly ratings to get one overall rating for each student each week. The researcher also administered the Mindful Attention Awareness Scale for Children (MAAS-C; Benn, 2004) to the children each week to assess their mindfulness. Prior to beginning observations, the researcher provided training on conducting and rating observations using the DOF. The training included watching segments of practice cases, rating the practice observations individually, and discussing the ratings. The inter-observer reliability among the observers was .83 for problem items, and .90 for on-task behavior.

**Instrument**

**Teacher Report Form (TRF)**

The Teacher’s Report Form (TRF) is designed for teachers to assess the problem behaviors of children ages 6 to 18. It contains 113 items with a Likert-type scale and fill-in-blank questions. Likert-type scale ranging from 0 (not true) to 2 (very true or often true). The test-retest reliability after a 16-day interval ranged from .60 to .96 for all of the subscales. Specifically, the test-retest reliability for attention-related problems ranges from .93 to .96 (attention problem, inattention, hyperactivity-impulsivity). Regarding the internal consistency, the Cronbach’s alpha for the scales ranged from .73 to .97. Specifically, the Cronbach’s alpha for attention-related problems...
ranges from .93 to .95. Additionally, the content validity for TRF is supported by four decades of research, consultation, and feedback (Achenbach & Rescorla, 2001).

**Direct Observation Form (DOF)**

The Direct Observation Form (DOF; McConaughy & Achenbach, 2009) is designed to rate children’s (age 6-11) behavior in the classroom, during recess, and in other group settings. The observer records a narrative description of the child’s behavior for 10 minutes and then rates the child’s on-task behavior at ten 1-minute intervals. After completing the 10-minutes observation, the observer rates 88 problem items based on the student’s behavior during the observation. The rating scale for observed behavior ranges from 0 (no occurrence) to 3 (definite occurrence with severe intensity or occurrence lasting more than 3 minutes duration). The norm group for the DOF included 661 ethnically diverse children for classroom observations and 224 for recess observations. Inter-rater reliability for the DOF ranges from .71 to .97 (McConaughy & Achenbach, 2009).

**Mindful Attention Awareness Scale for Children (MAAS-C)**

The Mindful Attention Awareness Scale for Children (MAAS-C; Benn, 2004) was modified from the Mindful Attention Awareness Scale (MAAS). This scale contains 15 items, which each item is rated on a 6-point response format ranging from 1 (almost never) to 6 (almost always). Lower scores represent higher levels of mindfulness (e.g., “I could be feeling a certain way and not realize it until later”). Lawlor, Schonert-Reichl, Gadermann and Zumbo (2014) examined the reliability and validity of the MAAS-C by conducting an exploratory factor analysis (EFA) to analyze the factor structure of the MAAS-C with a total of 286 children (fourth to seventh grade). The results indicated a strong internal consistency, with a Cronbach’s alpha at .84. In terms of convergent and
discriminant validity, the MAAS-C was positively and significantly correlated with students’ self-concept, optimism, positive affect, perceived classroom autonomy, academic efficacy, and personal achievement goals; it was negatively and significantly correlated with depression, anxiety, and negative effects (Lawlor et al., 2014).

**Mindful Attention Awareness Scale (MAAS)**

The Mindful Attention and Awareness Scale (MAAS; Brown & Ryan, 2003) is a 15-item instrument that was developed to measure dispositional mindfulness. According to Brown and Ryan (2003), the MAAS measure a conceptualization of mindfulness as “the presence or absence of attention to, and awareness of, what is occurring in the present moment” (p.824). Items are worded to reflect an absence of mindfulness (e.g., “I rush through activities without being really attentive to them.”) Therefore, if a person receives a low score on the MAAS, it indicates that he or she has a higher level of mindfulness. Each item is rated on a 6-point response format ranging from 1 (almost always) to 6 (almost never). Higher scores represent higher levels of mindfulness, which is opposite from MAAS-C. In order to obtain the MAAS total score, the items are averaged. The intraclass correlation (comparable to a Pearson r) of the MAAS was .81 ($p = .0001$) and the analysis of test-retest score agreement indicated that there were not significantly different scores between Time 1 (3.78) and Time 2 (3.77).

**Demographic Questionnaire**

The researcher obtained demographic information from the school counselors and students using demographic questionnaires. The demographic questionnaire for the school counselors included items about age, race/ethnicity, and years of elementary school counseling experience for the school counselors. The students’ demographic
questionnaire included item related to the students’ age, gender, grade level, and race/ethnicity.

**Research Questions and Hypotheses**

The current study involves three dependent variables: (a) attention problem, (b) on-task behaviors, and (c) mindfulness. The following are the research questions for this study:

1. What is the treatment effect of using a mindfulness intervention to decrease attention problems?
2. What is the treatment effect of using a mindfulness intervention to improve on-task behavior?
3. What is the treatment effect of using a mindfulness intervention to improve mindfulness?

The research will test the following hypotheses:

HO 1: Students who participate in a mindfulness intervention will have decreased attention problems.

HO 2: Students who participate in a mindfulness intervention will have increased on-task behavior.

HO 3: Students who participate in a mindfulness intervention will have increased mindfulness.

**Data Analyses**

The researcher used visual analysis (Morgan & Morgan 2009) as the primary method of data analysis to examine data changes in means, level, trend, variability, and immediacy of effect. The level in visual analysis refers to the change in behavior from the last day of one phase (i.e. baseline) to the first day of another phase (i.e. intervention phase). The trend indicates the slope of the line that contains all of the data.
points (i.e., either linear, quadratic). Variability of data within a phase indicates the deviation of the scores from the trend line. Overlap is the proportion of data points in phase B that overlap with the data in phase A. By examining the degree of overlap, the researcher will be able to assess the effect size of the intervention. Low overlap indicates a larger effect, and when the trend and variability in visual analysis are minimal, the interpretive value or weight of overlap will be the greatest (Horner, Swaminathan, Sugai & Smolkowski, 2012). Finally, the immediacy of effect refers to any change in data patterns that result from manipulating the independent variable (Horner et al., 2012).

The researcher used the percentage of data exceeding the median (PEM; Ma, 2006), in conjunction with visual analysis, to estimate the treatment effect. In using PEM, the researcher draws a line from the median data point in the baseline phase across the intervention and post-intervention phases. If the intervention is effective, the data points of intervention phase and post-intervention phase will be predominately on the therapeutic side of median. The researcher selected the PEM procedure due to the variance of data points in baseline phase. Ma (2009) reported that PEM is a robust measure to examine the treatment effect for within-subjects research designs, which is also useful for study designs that involve less than 10 data points in the treatment phases. To calculate the PEM, the researcher first identified the anticipated changes (decrease in attention problems, increase in on-task behaviors, and decrease in mindfulness score). Using data from separate graphs, the researcher identified the baseline median point and drew a line across the intervention and post-intervention phases. With the median point line across three phases, the researcher was able to
identify the data points that were above and below the median point line. To calculate the effect size of the intervention, the researcher divided the numbers of data point from the side of anticipated change during the intervention phase by six (the number of intervention data points). For interpreting treatment effect size for nonoverlap data analysis procedures, such as PEM, Scruggs and Mastropieri (2001) suggested that the effect size of .90 and above indicates very effective treatment; .70-.89 reveals moderate effective treatment; .50-.69 shows debatably effective treatment; and below .50 indicates not effective. In addition to calculating effect size by using PEM, individual participants’ graphical data were presented and analyzed through visual trend analysis.

In order to strengthen the internal validity, the researcher calculated the Relative Success Rate (RSR; Parker & Hagan-Burke, 2007) between the treatment and comparison groups. The RSR is the treatment group success rate divided by the comparison group success rate. In order to calculate the success rate for the treatment group, the researcher added the number of data points that were above the baseline median point for on-task behaviors and added the number of data points that were below the baseline median point for attention problem behaviors and mindfulness score in separate analyses and divided each of these numbers separately by the total treatment data points (30). For the comparison group, the researcher did the same procedure for on-task behaviors, attention problem behaviors, and mindfulness score, but divided by 18 (total data points during the six week period). For the post-intervention phase, the researcher also added the total data points above or below the baseline median point for on-task behaviors, attention problem behaviors and mindfulness
separately in the post-intervention period. Then, the researcher divided the numbers by 15 for the treatment group and 9 for the comparison group.

To account for missing data, the researcher applied the Expectation-Maximum likelihood algorithm (EM procedure; Dempster, Laird, & Rubin, 1977). Smith, Borckardt and Nash (2012) recommended the use of the EM procedure to address missing data in time series studies because it does not affect one’s ability to correctly infer a significant effect. Time series studies involve repeated observation on a single unit over time, which possesses the same characteristic as the single case design (Velicer & Colby, 2005). According to Velicer and Colby, the EM procedure can accurately estimate data in every tested condition with up to 40% missing data by using time series parameters. As a result, the researcher applied the EM procedure by using missing value analysis in the SPSS software.

**Chapter Summary**

In this chapter, the researcher provided an overview of the study. The study involves an A-B-A SCRD with a comparison group to examine the effectiveness of the MBAG-Con students’ attention problems, on-task behavior, and mindfulness. The chapter included an explanation of the research design, the intervention, and treatment fidelity. The researcher also described the research procedure, the instruments, and the research questions and hypotheses. Finally, the researcher discussed the procedures used to analyze the data. The researcher will present the results of the study in Chapter 4.
CHAPTER 4
RESULT

In this study, the researcher used an A-B-A single-case research design (SCRD) to examine the effectiveness of a mindfulness intervention on improving third and fourth graders’ attention (attention problems and on-task behaviors) and mindfulness. In this chapter, the researcher will present the results for each participant by applying visual analysis (means, level, trend and variability analysis). The researcher will also discuss the effect size of the intervention, for each individual, by applying the percentage of data exceeding the median (PEM; Ma, 2006). Finally, the researcher will calculate the Relative Success Rate (RSR; Parker & Hagan-Burke, 2007) to compare the results from the intervention and comparison group. After presenting the results of individual students, the researcher will also present the information that the school counselors wrote in the session reflections. Lastly, the researcher will present the school counselors’ pre- and post-test scores on the MAAS. Before interpreting participants’ data, it is important to note that the data for the last week of the post-intervention phase was collected during the last week of the school year and the school activities were less structure compared to a regular school day. Therefore, readers should be cautious when interpreting the post-intervention data, especially the last week of the post-intervention phase.

In summary, the results revealed that the MBAG-C was very effective for two participants (Eric, Gavin), debatably effective for two participants (Jason, Daisy), and not effective for one participant (Sophia) in addressing attention problems; was very effective for two participants (Jason, Gavin), debatably effective for two participants (Sophia, Dasiy), and not effective for one participant (Eric) in improving on-task
behavior; and ranged from debatably effective \( (n = 1) \), to moderately effective \( (n = 1) \), to very effective \( (n = 3) \) for improving students’ mindfulness level.

**Participant Analysis**

**Participant 1: Jason**

Jason is a ten year-old fourth grader who is Multiracial. His teacher described him as a smart boy who is aware of how his behavior affects others. He scored in the borderline clinical range on the TRF for attention problems and his teacher reported that he constantly disrupts and distracts others around him, and at times intentionally shares strange ideas in response to a question to get attention from his peers.

**On-task behavior.** For mean changes, Jason’s mean for on-task behavior slightly increased from 6.33 to 7.42, which indicated that Jason’s on-task behaviors slightly improved during the intervention phase. In terms of level, the last week of baseline phase for on-task behavior was 5.5 and the first week of intervention phase for on-task behavior was 7. There was a positive shift after implementing the MBAG-C. Regarding trend of on-task behavior data, there was no obvious trend during the baseline phase. But after implementing the intervention, we can see some slopes within the intervention phase. For the first three weeks of the intervention phase, Jason’s on-task behavior became stable and suddenly improved in Week 4 and 5 of the intervention phase, but during Week 6 it returned to a level that is the same as Week 2 and 3 (6.5) of the intervention phase. For the post-intervention phase, all of the data points remained above the baseline median. In terms of variability, Jason’s on-task behavior become less variable during the intervention phase, compared to the baseline phase (baseline SDs of 2.84 and intervention SDs of 1.28). There is a stable trend for week 1-3 and week 6.
In addition to the visual analysis, the researcher applied the percentage of data exceeding the median (PEM; Ma, 2006) to examine the effect size of the intervention. For Jason’s on-task behavior, the subscale rating shown in Figure 4-1 indicated that the MBAG-C was very effective for improving on-task behavior. The PEM statistic for on-task behavior (1.00) shows that all of the data points for Jason’s on-task behavior were above the baseline median (5.5) during the six intervention weeks, demonstrating treatment effectiveness.

**Attention problems.** The means for attention problem scores were slightly improved from 5.83 (baseline phase) to 5.42 (intervention phase; the decreased score indicated improvement). In terms of level, there was an immediately decrease from last week of the baseline phase (8) to the first week of the intervention week (5.5). The trend became stable after implementing the intervention. There were four data points (Week 1, 3, 4, and 5) out of six below the median point of baseline phase (6) and one data point (Week 2) was the same as the baseline median. During the post-intervention phase, Jason’s score for attention problems (7.5) exceeded the baseline median during Week 2; however, the data points (5.5) were below the baseline median (6) for the other two weeks. Analysis of variability demonstrated a moderate variability during the baseline phase with a SD of 2.25, and a moderate variability during the intervention phase with a SD of 0.74, indicating Jason’s attention problems became less variable and became visibly stable during the intervention phase. For the effect size of the treatment, the PEM statistic for Jason’s attention problems (0.67) indicated that the MBAG-C was debatable effective, with the score falling below the baseline median during four weeks (decreased score indicated improvement).
**Mindfulness.** Jason’s mindfulness score mean also showed improvement from 59.67 to 45.5 (decreased score indicated improvement). Level analysis revealed a clear shift between the last week of baseline phase (58) and the first week of intervention phase (45). In terms of trend, there was a constant decrease for the first four weeks of the intervention phase (45, 44, 42, 41) and a slight increase during Week 5 (43). During the last week of the intervention, Jason’s mindfulness score increased to 58, which was the same as the baseline median (58). For the post-intervention phase, there was an increased trend with the last data point (62) exceeding the baseline median (58). Analysis of variability revealed that there was a sudden increase for Week 6 of the intervention phase. However, the first five weeks of intervention phase were stable and less variable (SD = 1.58 for Week 1 to 5), compared to the baseline data (SD = 2.89). The PEM of Jason’s mindfulness score was 0.83, indicating moderate effective treatment. In total, five data points during the intervention phase were below the baseline median (58). In summary, the MBAG-C was very effective for addressing Jason’s on-task behavior (PEM = 1.00), debatably effective for addressing his attention problems (PEM = 0.67), and moderately effective for improving his mindfulness level (PEM = 0.83).

**Participant 2: Eric**

Eric is a ten year-old fourth grader who is White. His attention problems score on the TRF was within the borderline range; however, his teacher reported that he has an ADHD diagnosis and his parents are trying to avoid putting him on medication. His classroom teacher reported that he struggles with self-awareness and managing his behaviors. However, the teacher also reported that, at times, he can be very kind and considerate of others. Table 4-2 provides the means and SD for on-task behavior,
attention problems, and mindfulness. Figure 4-2 provides a graphical representation of on-task behavior, attention problems, and mindfulness and illustrates the data level and trend across phases of the study.

**On-task behavior.** The mean of Eric's on-task behavior slightly increased from 7.17 to 7.5. In terms of level, there was no shift between the last week of the baseline phase (7.5) and the first week of the intervention phase (7.5). Analysis of trend revealed that there was a constant increase in Eric's on-task behavior (6.5, 7.5, 8.5, 8.5) beginning the third week of the intervention phase and he scored above the baseline median during two weeks (increased score indicated improvement). For the post-intervention phase, his on-task behavior showed a decreased trend, and the data point for the last week of the post-intervention phase (6.5) was below the baseline median (7.5). Variability analysis of Eric’s on-task behavior demonstrated moderate variability during both the baseline and the intervention phases with SDs of 0.58 and 0.89. The PEM statistic for Eric’s on-task behavior (0.33) indicated no treatment effect, with only two data points being above the baseline median (7.5).

**Attention problems.** The mean for Eric's attention problems decrease from 6.5 to 5 (decreased score indicated improvement). Analysis of level revealed that there was a clear shift from the last day of the baseline phase (6.5) to the first day of the intervention phase (4.5). In terms of trend, there was a stable trend with no intervention data points exceeding the baseline median (6.5). The maximum score on attention problems during the intervention phase was 5.5, which was one point below the baseline median. The scores for post-intervention phase increased slightly with one data point being above the baseline median (7) and one data point (6.5) being the same.
as the baseline median. Variability analysis of Eric’s attention problems indicated that this area became more stable (less variable) from a SD of 1 to a SD of 0.45. The PEM statistic for the attention problems (1.00) indicated an effective treatment, with all of the data points falling below the baseline median (decreased score indicated improvement).

**Mindfulness.** The mean score for Eric's attention problems improved from 73 to 60.17, which indicated that Eric’s mindfulness level improved after receiving the intervention. Analysis of level demonstrated that there was a big shift from the last day of the baseline phase (78) to the first day of the intervention phase (60). Eric's mindfulness level improved starting with the first week of the intervention. The trend analysis demonstrated that there was a constant increase for the first three weeks of the intervention (60, 67, 69; low score indicates high mindfulness level). Although the mindfulness score increased for the first three weeks of the intervention, all of these scores were below the baseline median (74). During Week 4 of the intervention, there was a sharp drop from 69 to 56 and after that, Eric’s mindfulness scores were fairly stable (56, 54, 55). They were also below the baseline median (74). The scores for post-intervention remained below the baseline median. In terms of variability, the graph illustrates that there was less variability during the intervention phase compared to the baseline phase. The PEM statistic for Eric’s mindfulness (1.00) demonstrated an effective treatment with all of the intervention data points falling below the baseline median. In summary, the MBAG-C was not effective in addressing Eric’s on-task behavior (PEM = 0.33), but it was effective in addressing attention problems (PEM = 1.00) and level of mindfulness (PEM = 1.00).
Participant 3: Sophia

Sophia is a ten year-old fourth grader who is White. Her attention problems score on the TRF was within the borderline range. According to her teacher, she is a funny, smart, and athletic girl who likes to help. However, she seems unaware of how her behaviors affect her relationships with her peers. For example, she likes to make fun of others by poking them, stepping on the back of their shoes, and laughing at them even after they ask her to stop. Table 4-3 provides the means and SDs for on-task behavior, attention problem, and mindfulness for Sophia. Figure 4-3 provides a graphical representation of on-task behavior, attention problems, and mindfulness for Sophia and illustrates the data level and trend across the phases of the study.

**On-task behavior.** The mean of Sophia’s on-task behavior improved from 8.67 to 9.8. For the level analysis, there was a shift from the baseline phase (8) to the intervention phase (9.5). Regarding trend, there were two drops during the six week intervention (Week 2 and Week 4). However, the two drops were not far from the baseline median (8.5). The data point during Week 2 of the intervention phase was the same as the baseline median (8.5) and the Week 4 data point was only .5 below the baseline median (8). For the post-intervention phase, there was a sharp drop for the last three week, with one data point falling below the baseline median and one data point being the same as the baseline median, indicating a regression for her on-task behavior. In terms of variability, there was moderate variability during the baseline phase with a SD of 0.76 and during the intervention phase with a SD of 0.66, with four data points during the intervention phase being above the baseline median (8.5) and one data point during the intervention phase being the same as the baseline median.
The PEM of Sophia’s on-task behavior (0.67) demonstrated debatable effectiveness, with two data points during the intervention phase falling below the baseline median.

**Attention problems.** The mean score for attention problems slightly improved from 4 (baseline phase) to 3.67 (intervention phase; decreased score indicated improvement). Level analysis showed that there was no shift from the baseline (3) to the intervention phase (3). There was also no immediate change after implementing the intervention. Regarding the trend analysis, Sophia’s attention problems scores slightly increased every other week during the intervention phase. Three data points were above the baseline median (Week 2, 4, and 6), and three data points were the same as the baseline median (3). The scores for the post-intervention were all above the baseline median (3) with a peak (6) during the second week of the post-intervention phase. Variability analysis demonstrated more stability during the intervention phase with a SD of 0.75, compared to the baseline phase with a SD of 2.18. The PEM for Sophia’s attention problems (.00) indicated that the treatment was not effective with no data points falling below the baseline median.

**Mindfulness.** The mean for Sophia’s mindfulness slightly improved from 43.67 to 41.33. For the level, there was a shift from the last week of the baseline phase (42) to the first week of the intervention phase (46). Trend analysis showed that Sophia’s mindfulness score decreased for the first three weeks of the intervention phase, showing that her mindfulness level improved. But during the third and fourth weeks of the intervention, her mindfulness scores was higher than the baseline median, indicating regression. Three data points of the intervention phase were above the baseline median (Week 1, 4, 5) and three data points were below the baseline median.
For the post-intervention phase, there were two data points above the baseline median and one data point was the same as the baseline median. Variability analysis indicated that the variability became slightly less during the intervention phase with a SD of 4.73, compared to the baseline phase with a SD of 3.93. The PEM of Sophia’s mindfulness (0.50) indicated debatably effective treatment, with three data points falling below the baseline median. In summary, the MBAG-C was debatably effective for addressing Sophia’s on-task behavior (PEM = 0.67) and increasing her mindfulness level (PEM = 0.50). However, the intervention was not effective in addressing her attention problems (PEM = .00).

**Participant 4: Daisy**

Daisy is a nine year-old third grader who is Black. Her attention problems score on the TRF was within the borderline range. According to her teacher, Daisy is a sweet girl. However, she reports that Daisy’s social behaviors and emotional reactions might be affecting her school performance. She also receive exception student education (ESE) services. Table 4-4 provides the means and SDs for on-task behavior, attention problems, and mindfulness during the baseline, intervention, and post-intervention phases for Daisy. Figure 4-4 provides a graphical representation of on-task behavior, attention problems, and mindfulness for Daisy and illustrates the data level and trend across the phases of the study.

**On-task behavior.** The mean score for Daisy’s on-task behavior improved from the baseline phase (5.67) to the intervention phase (7.25). From the level analysis perspective, there was a shift from the last week of the baseline phase (7) to the first week of the intervention phase (8). In terms of trend, Daisy’s attention problems improved and became stable for the first three weeks of the intervention phase, but
there were two data points that dropped below the baseline median (Week 4 and 6). The scores for the post-intervention phase were all below the baseline median, indicating her on-task behavior became worse compared to her behavior during the intervention phase. Variability analysis indicated that her attention problems became more stable during the intervention phase with a SD of 0.99, compared to the baseline phase with a SD of 2.75. The PEM of Daisy's on-task behavior (0.67) indicated debatable treatment effectiveness, with four data points being above the baseline median.

**Attention problems.** Daisy's attention problems improved from a mean of 5 to 3.67 (decreased score indicates improvement). In terms of level, there was a negative shift from the baseline phase to the intervention phase (score increased from 2.5 to 4; high score indicates high attention problems). Regarding trend, there was a decrease for the first three weeks of the intervention phase, but during Week 4, the data point exceeded the baseline median (4) and the data point during Week 6 was the same as the baseline median. The scores during the post-intervention phase were all above the baseline median, indicating that her attention problems became more severe compared to the intervention phase. For the variability, the attention problems seemed to become stable during the intervention phase with a SD of 0.61, compared to the baseline phase with a SD of 3.12. The PEM of Daisy's attention problems (0.50) indicated debatable treatment effectiveness, with three data points below the baseline median.

**Mindfulness.** During Week 2 of the intervention phase, Daisy missed three days of school. Therefore, the mindfulness score for that week was generated by using EM procedure. Thus, the reader should be cautious about the interpretation of Daisy's
mindfulness level. Based on the mean scores for mindfulness, there was an improvement (35.33 to 21.6, with a low score indicating greater mindfulness). When addressing level, there was a clear drop after implementing the intervention (31 to 24). Trend analysis showed that there was a decreased trend starting from the first two weeks of the intervention phase, and the scores became constant throughout the rest of the intervention weeks. The scores also remained below the baseline median for the post-intervention phase. The variability of the intervention phase (SD of 1.2) was less compared to the baseline phase (SD of 7.51). The PEM of Daisy’s mindfulness score (1.00) indicated that the intervention was very effective. Thus, the MBAG-C was debatably effective for addressing Daisy’s on-task behavior (PEM=0.67) and attention problems (PEM=0.50), and very effective for improving Daisy’s mindfulness (PEM=1.00).

**Participant 5: Gavin**

Gavin is a nine year-old boy in third grade who is Black. He scored within the borderline range for attention problems on the TRF. According to his teacher, he is funny, quick-witted, and tries to make other laugh. However, the teacher also reported that he has erratic behaviors that are characterized by becoming angry and hitting, throwing things and yelling at his peers and teacher. He also receives ESE services. Table 4-5 provides the means and SDs for on-task behavior, attention problems, and mindfulness during the baseline, intervention, and post-intervention phases. Figure 4-5 provides a graphical representation of on-task behavior, attention problems, and mindfulness for Gavin and illustrates the data level and trend across phases of the study.
Gavin participated in this study a week late due to his parent turning in the parental consent form late. Therefore, Gavin missed the first week of data collection, including on-task behavior, attention problems, and mindfulness. The missing data were replaced by numbers generated through the EM procedure. However, readers should be cautious when interpreting his data.

**On-task behavior.** Based on the mean score for Gavin’s on-task behavior, there was an improvement from the baseline phase to intervention phase (2.5 to 6.75). Level analysis also indicated that there was an immediate improvement for Gavin’s on-task behavior. For the last week of the baseline phase, the data point for Gavin’s on-task behavior was 2 and it increased to 4.5 during the first week of the intervention phase. In terms of trend, there were two peaks during Week 2 and 5 of the intervention phase and all of the data points during the intervention phase were above the baseline median (2.5). The scores for the post-intervention also remained above the baseline median. The variability analysis showed less stability during the intervention phase (SD of 1.84), compared to the baseline phase (SD of 0.5). The PEM of Gavin’s on-task behavior (1.00) indicated that the intervention was very effective.

**Attention problems.** The mean score for Gavin’s attention problems decreased from 10.5 to 6.42, indicating an improvement (lower score indicates less attention problems). Regarding level, there was a clear shift when beginning the intervention (dropped from 11.5 to 8.5). Trend analysis revealed that there were two drops during Week 2 and 4 of the intervention phase. Although there were only two clear drops during the intervention phase, all of the data points within the intervention phase were below the baseline median (10.5). For the post-intervention phase, the scores all
remained below the baseline median. Analysis variability showed a moderate variability in both the baseline phase (SD = 1) and the intervention phase (SD = 1.66). The PEM statistic for Gavin’s attention problems (1.00) showed that the intervention was very effective.

**Mindfulness.** The mean score for mindfulness during the intervention phase (44.67) was lower than the mean score during the baseline phase (66.5; low score indicates a high mindfulness level). There was a shift from the last week of the baseline phase (69) to the first week of the intervention phase (60). The trend analysis indicated that the intervention helped to increase Gavin’s mindfulness level. For the post-intervention phase, there was a sharp drop with all of the data points falling below the baseline median. The variability analysis showed moderate variability in the baseline phase (SD = 2.5) and significant variability in the intervention phase (SD = 11.52). The PEM statistic for Gavin’s mindfulness (1.00) indicated a strong treatment effect for improving mindfulness. Thus, the MBAG-C was very effective in addressing Gavin’s on-task behavior (PEM = 1.00), attention problems (PEM = 1.00), and mindfulness (PEM = 1.00).

**Participant 6: Brittany (Comparison Group)**

Brittany is a ten year-old girl in fourth grade who is Black. Her attention problems score was within borderline range on the TRF. According to her teacher, she is a kind girl who wants to connect and has a positive attitude. However, at times she exhibits immature behavior, which causes her peers to disconnect from her. Table 4-6 provides the means and SDs for on-task behavior, attention problems, and mindfulness during the baseline, 6-week period, and post-intervention phases. Figure 4-6 provides a
graphical representation of on-task behavior, attention problems, and mindfulness for Brittany and illustrates the data level and trend across the phases of the study.

**On-task behavior.** The mean for Brittany’s on-task behavior during the baseline phase was 0.34 points higher than the mean during the 6-week noninvolvement period. The data for the last week of the baseline phase was 8.5, but dropped to 6 in the first week of the non-intervention phase. Trend analysis demonstrated an increase for both the baseline and non-intervention phase. However, there were three data points below the baseline median (6.5) and two data points were the same as the baseline median. For the post-intervention phase, all of the data points were above the baseline median. The PEM statistic for on-task behavior (0.17) indicated that noninvolvement in treatment was in the ineffective range for improving on-task behavior with only one data point above the baseline median.

**Attention problems.** The mean score for Brittany’s attention problems increased from 6.17 (baseline phase) to 8.17 (non-intervention phase), indicating that her attention problems got worse during the non-intervention phase. A trend analysis indicated fluctuation of data points with all of the data points during the non-intervention phase being above the baseline median. During the post-intervention phase, one data point was below the baseline median, one data point was above the baseline median, and one point was the same as the baseline median, indicating a fluctuation during the post-intervention phase. The PEM statistic for attention problems (0.00) indicated that noninvolvement in treatment was in the ineffective range.

**Mindfulness.** The mean score for Brittany’s mindfulness decreased from the baseline (43.67) to non-intervention phase (21.33). A trend analysis indicated that there
was a slight increase during the fourth week of the non-intervention phase, indicating that the mindfulness level decreased. All of the data points from the non-intervention phase were below the baseline median (51). For the post-intervention phase, there was a sharp increase during the last week of the phase. However, all of the data points were still below the baseline median (51). The PEM statistic for Brittany’s mindfulness (1.00) indicated non-involvement was in the very effective range. Thus, without engaging in the MBAG-C, Brittany’s on-task behavior and attention problems did not improved. However, without treatment, her mindfulness level improved based on the self-reported assessment (MAAS-C).

**Participant 7: Peter (Comparison Group)**

Peter is a ten year-old boy in fourth grade who is White. His attention problems score was within the borderline range on the TRF. His teacher reported that Peter is a kind, sweet boy who eager to learn; however, he struggles academically. He often does not complete his work or ask for help when needed and he avoids doing his work by talking with his peers. He also struggles with having socially appropriate interactions with his peers. Table 4-7 provides the means and SDs for on-task behavior, attention problems, and mindfulness during the baseline, non-intervention, and post-intervention phases. Figure 4-7 provides a graphical representation of on-task behavior, attention problems, and mindfulness for Peter and illustrates the data level and trend across phases of the study.

**On-task behavior.** The mean difference between the baseline phase and the non-intervention phase was 1.17. The mean of Peter’s on-task behavior during the non-intervention phase was lower than the mean during baseline phase, indicating that Peter’s on-task behavior got worse during the non-intervention phase. There was a 0.5
point difference between the last week of the baseline phase (6.5) and the first week of the non-intervention phase (6). A trend analysis indicated fluctuation of data points with one data point being the same as the baseline median and the rest of the data points falling below the baseline median. However, during the post-intervention, all of the data points were above the baseline median. The PEM statistic for Peter’s on-task behavior (0.00) indicated that without the intervention, Peter’s on-task behavior did not improve. There was no data points above the baseline median during the non-intervention phase.

**Attention problems.** The mean for Peter’s attention problems during the baseline phase was 5.17 and it increased to 6 during the non-intervention phase, indicating his attention problems got slightly worse during the six-week non-intervention phase. In terms of level, the mean for the last week of the baseline phase was the same as the mean in the first week of the six-week non-intervention phase (5.5). A trend analysis indicated fluctuation of data points with data points above the baseline median for the fourth, fifth, and sixth weeks. His scores for the post-intervention phase were all below the baseline median. The PEM statistic for Peter’s attention problems (0.33) indicated noninvolvement was in the ineffective range, with two data points falling below the baseline median and one data point being the same as the baseline median.

**Mindfulness.** There was a mean change from the baseline phase to the non-intervention phase (20 to 15; a lower score means a higher mindfulness level). However, it is important to note that starting from the third week of the baseline phase, Peter started to mark the lowest option (1-almost never) for all of the MAAS-C questions and this continued throughout the post-intervention phase. Therefore, although it seemed that his mindfulness level improved without participating in the intervention, this
data should be interpreted with caution. In summary, without participating in the MBAG-C, Peter’s on-task behavior (PEM = 0.00) and attention problems (PEM = 0.33) did not improve. His mindfulness data was not interpretable, as discussed above.

**Participant 8: Vivian (Comparison Group)**

Vivian is a ten year-old girl in fourth grade who is Black. She scored in the borderline range for attention problems on the TRF. Her teacher reported that Vivian responds well to her feedback and is eager to please. Vivian also likes to write. The teacher also stated that Vivian lacks empathy and tends to focus on others instead of herself. Table 4-8 provides the means and SDs for on-task behavior, attention problems, and mindfulness during the baseline, non-intervention, and post-intervention phases. Figure 4-8 provides a graphical representation of on-task behavior, attention problems, and mindfulness for Vivian and illustrates the data level and trend across the phases of the study.

**On-task behavior.** There was a slight difference (0.09) between the mean score for Vivian’s on-task behavior during the baseline phase and the non-intervention phase. The mean score for the six-week non-intervention phase was slightly higher than the mean during the baseline phase. In terms of level, there was no change from the last week of the baseline phase to the first week of the non-intervention phase, indicating that without involving the intervention, Vivian’s on-task behavior did not change.

Analysis of trend revealed that there was a drop during the third week of the non-intervention phase, showing that Vivian’s on-task behavior got worse after the third week of the six-week non-intervention phase. During the post-intervention phase, two data points were above the baseline median and one fell below the baseline median (a sharp drop during the last week). The PEM statistic for Vivian’s on-task behavior (0.33)
indicated that noninvolvement was in the ineffective range with only two data points above the baseline median during the six-week period.

**Attention problems.** Vivian’s mean score for attention problems increased from 6.83 to 7.83, indicating her attention problems were more severe during the six-week non-intervention phase than during the baseline phase. Level analysis showed that Vivian’s attention problems score increased from 6.5 in the last week of the baseline phase to 8 in the first week of the non-intervention phase. A trend analysis revealed that the data points were stable for the first three week of the non-intervention phase. However, only one data point during the six-week non-intervention phase was below the baseline median (7). For the post-intervention phase, one data point (7.5) was above the baseline median and the other two data points were the same as the baseline median (7). The PEM statistic for Vivian’s attention problems (0.17) indicated that non-involvement was in the ineffective range.

**Mindfulness.** Regarding Vivian’s mindfulness, there was an improvement from the baseline phase to the non-intervention phase (50.67 decreased to 34.67; lower score indicates higher mindfulness level). A trend analysis revealed that Vivian’s mindfulness level decreased during the non-intervention phase. However, it might be important to note that she rushed through the MAAS-C assessment starting from the second week of the non-intervention phase. The researcher tried to encourage her to slow down and read the questions carefully, however, she continued to answer the questions quickly, which continued during the post-intervention phase. The scores during the post-intervention phase showed a slight increase, but all of the data points remained below the baseline median. Although the PEM statistic for mindfulness (1.00)
indicated effectiveness, the readers should interpret this statistic with cautions. Thus, without participating in the MBAG-C, Vivian's on-task behavior (PEM = 0.33) and attention problems (PEM = 0.17) did not improved. Change in her mindfulness level should be interpreted with caution.

**RSR Comparison Between Groups**

**On-task behavior.** For the participants in the treatment group, the proportion of the data points above the baseline median in the intervention phase was 22/30 (0.67), compared to the comparison group 3/18 (0.17). The calculated RSR .67/.17 was 3.94, indicating that the students who participated in the MBAG-C were 3.94 times more likely to improve their on-task behavior across the six week period than the students in the comparison group. For the follow-up phase, the proportion of on-task behavior data points above the baseline median was 9/15 (0.6), compared to the comparison group being 8/9 (0.89). The calculated RSR (.60/.89) was 0.67, indicating that students that participated in the MBAG-C were 0.67 times more likely to maintain improved on-task behaviors during the 3 weeks following the intervention than students in the comparison group.

**Attention problems.** The proportion of the data points below the baseline median in the intervention phase for the treatment group was 19/30 (0.63), compared to the comparison group 3/18 (0.17). The RSR calculation was .63/.17 (3.71), indicating that the students who participated in the MBAG-C were 3.71 times more likely to improve their attention problems across the six week period than the students in the comparison group. For the follow-up phase, the proportion of data points for attention problems above the baseline median was 5/15 (0.33), compared to the comparison group 4/9 (0.44). The calculated RSR (.33/.44) was 0.75, indicating that students that
participated in the MBAG-C were 0.75 times more likely to maintain improvements regarding attention problems during the 3 weeks following the intervention compared to students in the comparison group.

**Mindfulness.** The proportion of the data points below the baseline median in the intervention phase for the treatment group was 26/30 (0.87), compared to the comparison group 18/18 (1.00). The RSR calculation was .87/1.00 (0.87), indicating that the students who participated in the MBAG-C were 0.87 times more likely to improve their mindfulness across the six week period than the students in the comparison group. In other words, the students in the treatment group were less likely to improve their mindfulness compared to the students in the comparison group.

For the follow-up phase, the proportion of mindfulness data points above the baseline median was 11/15 (0.73), compared to the comparison group 9/9 (1.00). The calculated RSR (.73/1.00) was 0.73, indicating that the students that participated in the MBAG-C were 0.73 times more likely to maintain improved mindfulness during the 3 weeks following the intervention. However, as mentioned previously in Peter and Vivian’s mindfulness sections, the reader should interpret the results for the mindfulness data in the intervention and post-intervention phases with caution because Peter marked the same option for the MAAS-C questions starting from the third week of the baseline phase and Vivian rushed through the MAAS-C assessment starting from the second week of the non-intervention phase.

**School Counselors Session Reflections**

After each MBAG-C session, school counselors completed a session reflection to record their experiences, including their own performances, students’ performances during the session, obstacles that they experienced, and how likely they will implement
this session with future students. In this reflection, school counselors were able to share their thoughts about the session, such as what went well during the session.

First Session-Introducing Mindfulness and Mindful Breathing

The first session focused on forming the group (creating group rules), introducing the concepts of mindfulness, and introducing an important, basic mindfulness skill (mindful breathing). With fourth graders, the school counselor mentioned that it was a positive experience and that students were able to share their personal stories in terms of focus and emotions. Fourth graders were engaged with the mindful breathing activities and the school counselor felt connected to the students and the discussion. She enjoyed practicing mindful breathing activities with the students. For the third graders, the school counselor mentioned that some of the students got distracted while doing mindful breathing activities. However, the majority of them were engaged during the process. Both of the school counselors felt satisfied (4; on a scale ranging from one to five, with one representing “very dissatisfied” and five representing “very satisfied”) about their performances in the session. They both reported that it is likely that they will facilitate this session with other students in the future (4; on the scale one to five, one representing “very unlikely” and five representing “very likely”). They both reported being neutral to satisfied (3-4) regarding students’ performance.

Second Session-Mindful Listening

The second session was focused on mindful listening with a purpose of helping students become aware of external and internal sounds. By paying attention to the sounds, students might be able to increase their awareness within themselves and for the external world around them. With the fourth graders, the school counselor mentioned that students were engaged in the activities, were able to pay attention to the
sounds, and also sat still for a long period of time to just listen. However, the school counselor hoped to have more time to discuss the purpose of mindful listening. For the third graders, the school counselor thought that students were more settled compared to the first session. However, there was a technology issue while doing the mindful listening activity and the sounds were not loud enough for students to hear. In terms of the scale question on the session reflection, one school counselor felt neutral and one felt satisfied about her performances in the session. One thought that she would be likely to facilitate this session with other students in the future, and one rated being neutral on this question. Both of them responded as neutral regarding students’ performance.

**Third Session-Mindful Sensory**

The third session focused on mindful sensory with a purpose of helping students become mindful and increase their awareness through paying attention to their body sensations, including tasting, touching, smelling, and seeing. For the fourth graders, the school counselor mentioned that the students were very engaged in the mindful eating activity and were able to slowly experience their sensations while tasting the gummy bear. Students seemed to enjoy and have fun when practicing mindful eating activity. However, she also mentioned that some of the students did not enjoy the mindful smelling activity when they smelled some materials that they did not like, such as a fruitful tea bag. For the third graders, the school counselor also mentioned that the students were very engaged in the mindful eating activity and enjoyed it. However, some students also experienced difficulty with the mindful smelling, especially when smelling something that they disliked, such as coffee beans. Both of the school counselors felt satisfied about their performances in the session and reported that it is
likely that they will facilitate this session with other students in the future. They reported being neutral to satisfied regarding students' performance.

**Fourth Session-Mindful Movement**

The fourth session (mindful movement) focused on engaging students in mindful practices with movements, which can help students apply mindful practices into their daily activities. For the fourth graders, the school counselor reported that it was hard for students to focus on the task, but they appeared to enjoy the activity. She also mentioned that students appeared to becoming more reflective with each session. For the third graders, the school counselor mentioned that students had difficulty making their mind and body connection. Both school counselors reported being neutral about their performance in the session and reported that it is likely that they will facilitate this session with other students in the future. Additionally, they reported being neutral to satisfied regarding students’ performance.

**Fifth Session-Mindful Thoughts and Feelings**

The fifth session (mindful thoughts and feelings) focused on helping students learn that everyone has different thoughts and feelings. One of the skills of mindfulness is to notice these thoughts and feelings without engaging them too much. Instead, people can learn to pay attention to the present moment. By being mindful of their thoughts and emotions, students may gradually learn to respond to situations instead of reacting to them. For this session, the fourth grade school counselor mentioned that it was good for students to connect their emotions and bodies through mindfulness, but it was difficult for her to execute the exercises. The students had difficulty connecting their body sensations to their emotions. The school counselor reported that she wanted to provide more visuals or tangible materials for students to express emotions and bodies.
For the third graders, the school counselor mentioned that this session went well. However, she recommended the inclusion of more movement and less word descriptions. One school counselor felt dissatisfied and one felt very satisfied about their performance in the session. One reported that she is likely to facilitate this session with other students in the future, and one reported being neutral on this question. Additionally, one reported feeling neutral and one expressed feeling satisfied regarding students’ performance.

**Sixth Session-Closing Activity**

The last session (closing activity) was intended to help students review all of the mindfulness strategies that they had learned throughout the small group intervention. The school counselor gave each student a mindfulness certificate to help them review all of the mindfulness activities. In order to complete the certificate, students had to practice each mindfulness technique again during this session (i.e., mindful breathing, mindful smelling, and mindful movement) with the school counselor’s assistance. The mindfulness certificate provided students with something tangible to record their thoughts and experiences after completing each mindfulness technique. For the fourth graders, the school counselor reported that the certificate was distracting for the students and she recommended closing the small group without the certificate. For the third graders, the school counselor recommended skipping the mindful smelling activity since some of the students did not respond well to the strong smell materials. Both of the school counselors reported feeling neutral about their performance in this session and reported that it is likely that they will facilitate this session with other students in the future. They reported feeling neutral to satisfied regarding students’ performance.
The Mindfulness Attention Awareness Scale for School Counselors

The school counselors completed the Mindful Attention Awareness Scale (MAAS) during the mindfulness training session as a pre-test, and they completed it again after they had completed facilitation of the MBAG-C. The higher score of MAAS indicates the higher mindfulness level, which is different from the children’s version. One of the school counselors received 52 points for pre-test and 57 points for post-test, indicating improvement in her mindfulness level. The other school counselor received 57 points on both the pre-test and post-test.

Chapter Summary

This chapter focused on examining each individual participant’s on-task behavior, attention problems, and mindfulness level across the baseline, intervention (non-intervention), and post-intervention phases. The researcher analyzed each participant’s data using a visual analysis to examine change, and PEM to examine treatment effect size. The researcher also reported data from the school counselors’ MBAG-C session reflections. Lastly, the researcher presented the school counselors’ MAAS results. Chapter 5 will focus on a discussion of the results, study limitations, and implications for research and practice.
Table 4-1. Means and standard deviations for Jason’s attention problem, on-task, and mindfulness score

<table>
<thead>
<tr>
<th>Scale</th>
<th>Baseline M</th>
<th>SD</th>
<th>Intervention M</th>
<th>SD</th>
<th>Post-intervention M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Task</td>
<td>6.33</td>
<td>2.84</td>
<td>7.42</td>
<td>1.28</td>
<td>7.83</td>
<td>0.58</td>
</tr>
<tr>
<td>Attention Problem</td>
<td>5.83</td>
<td>2.25</td>
<td>5.42</td>
<td>0.74</td>
<td>6.17</td>
<td>1.15</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>59.67</td>
<td>2.89</td>
<td>45.5</td>
<td>6.28</td>
<td>57.33</td>
<td>4.16</td>
</tr>
</tbody>
</table>

Note: Increase scores for on-Task indicate improvement; decrease scores for attention problem and mindfulness indicate improvement.

Table 4-2. Means and standard deviations for Eric’s attention problem, on-task, and mindfulness score

<table>
<thead>
<tr>
<th>Scale</th>
<th>Baseline M</th>
<th>SD</th>
<th>Intervention M</th>
<th>SD</th>
<th>Post-intervention M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Task</td>
<td>7.17</td>
<td>0.58</td>
<td>7.5</td>
<td>0.89</td>
<td>8</td>
<td>1.32</td>
</tr>
<tr>
<td>Attention Problem</td>
<td>6.5</td>
<td>1</td>
<td>5</td>
<td>0.45</td>
<td>6</td>
<td>1.32</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>73</td>
<td>5.57</td>
<td>60.17</td>
<td>6.43</td>
<td>53</td>
<td>2</td>
</tr>
</tbody>
</table>

Note: Increase scores for on-task indicate improvement; decrease scores for attention problem and mindfulness indicate improvement.

Table 4-3. Means and standard deviations for Sophia’s attention problem, on-task, and mindfulness score

<table>
<thead>
<tr>
<th>Scale</th>
<th>Baseline M</th>
<th>SD</th>
<th>Intervention M</th>
<th>SD</th>
<th>Post-intervention M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Task</td>
<td>8.67</td>
<td>0.76</td>
<td>9.08</td>
<td>0.66</td>
<td>8.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Attention Problem</td>
<td>4</td>
<td>2.18</td>
<td>3.67</td>
<td>0.75</td>
<td>4.83</td>
<td>1.04</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>43.67</td>
<td>4.73</td>
<td>41.33</td>
<td>3.93</td>
<td>44.33</td>
<td>2.52</td>
</tr>
</tbody>
</table>

Note: Increase scores for on-task indicate improvement; decrease scores for attention problem and mindfulness indicate improvement.
Table 4-4. Means and standard deviations for Daisy’s attention problem, on-task, and mindfulness score

<table>
<thead>
<tr>
<th>Scale</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Task</td>
<td>M SD</td>
<td>M SD</td>
<td>M SD</td>
</tr>
<tr>
<td>5.67 2.75</td>
<td>7.25 0.99</td>
<td>5.17 1.15</td>
<td></td>
</tr>
<tr>
<td>Attention Problem</td>
<td>5 3.12</td>
<td>3.67 0.61</td>
<td>6.67 1.04</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>35.33 7.51</td>
<td>21.6 1.2</td>
<td>18.67 0.58</td>
</tr>
</tbody>
</table>

Note: Increase scores for on-task indicate improvement; decrease scores for attention problem and mindfulness indicate improvement.

Table 4-5. Means and standard deviations for Gavin’s attention problem, on-task, and mindfulness score

<table>
<thead>
<tr>
<th>Scale</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Task</td>
<td>M SD</td>
<td>M SD</td>
<td>M SD</td>
</tr>
<tr>
<td>2.5 0.5</td>
<td>6.75 1.84</td>
<td>7 1.32</td>
<td></td>
</tr>
<tr>
<td>Attention Problem</td>
<td>10.5 1</td>
<td>6.42 1.66</td>
<td>5 1.73</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>66.5 2.5</td>
<td>44.67 11.52</td>
<td>32.67 18.18</td>
</tr>
</tbody>
</table>

Note: Increase scores for on-task indicate improvement; decrease scores for attention problem and mindfulness indicate improvement.

Table 4-6. Means and standard deviations for Brittany’s attention problem, on-task, and mindfulness score

<table>
<thead>
<tr>
<th>Scale</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Task</td>
<td>M SD</td>
<td>M SD</td>
<td>M SD</td>
</tr>
<tr>
<td>6.67 1.76</td>
<td>6.33 0.68</td>
<td>7.83 0.58</td>
<td></td>
</tr>
<tr>
<td>Attention Problem</td>
<td>6.17 1.04</td>
<td>8.17 0.93</td>
<td>6.67 1.26</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>43.67 24.83</td>
<td>21.33 6.31</td>
<td>29 15.1</td>
</tr>
</tbody>
</table>

Note: Increase scores for on-task indicate improvement; decrease scores for attention problem and mindfulness indicate improvement.
Table 4-7. Means and standard deviations for Peter’s attention problem, on-task, and mindfulness score

<table>
<thead>
<tr>
<th>Scale</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Task</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>6.17</td>
<td>0.58</td>
<td>5</td>
</tr>
<tr>
<td>Attention Problem</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>5.17</td>
<td>1.53</td>
<td>6</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>7</td>
<td>15</td>
</tr>
</tbody>
</table>

Note: Increase scores for on-task indicate improvement; decrease scores for attention problem and mindfulness indicate improvement.

Table 4-8. Means and standard deviations for Vivian’s attention problem, on-task, and mindfulness score

<table>
<thead>
<tr>
<th>Scale</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Task</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>6.33</td>
<td>1.76</td>
<td>6.42</td>
</tr>
<tr>
<td>Attention Problem</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>6.83</td>
<td>0.29</td>
<td>7.83</td>
</tr>
<tr>
<td>Mindfulness</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>50.67</td>
<td>8.33</td>
<td>34.67</td>
</tr>
</tbody>
</table>

Note: Increase scores for on-task indicate improvement; decrease scores for attention problem and mindfulness indicate improvement.
Figure 4-1. Graphical representations of on-task behavior, attention problems, and mindfulness for Jason. B = baseline; T = treatment (during intervention); P = post-intervention.
Figure 4-2. Graphical representations of on-task behavior, attention problems, and mindfulness for Eric. B = baseline; T = treatment (during intervention); P = post-intervention.
Figure 4-3. Graphical representations of on-task behavior, attention problems, and mindfulness for Sophia. B = baseline; T = treatment (during intervention); P = post-intervention.
Figure 4-4. Graphical representations of on-task behavior, attention problems, and mindfulness for Daisy. B = baseline; T = treatment (during intervention); P = post-intervention.
Figure 4-5. Graphical representations of on-task behavior, attention problems, and mindfulness for Gavin. B = baseline; T = treatment (during intervention); P = post-intervention.
Figure 4-6. Graphical representations of on-task behavior, attention problems, and mindfulness for Brittany. B = baseline; T = treatment (during intervention); P = post-intervention.
Figure 4-7. Graphical representations of on-task behavior, attention problems, and mindfulness for Peter. B = baseline; T = treatment (during intervention); P = post-intervention.
Figure 4-8. Graphical representations of on-task behavior, attention problems, and mindfulness for Vivian. B = baseline; T = treatment (during intervention); P = post-intervention.
CHAPTER 5
DISCUSSION

This chapter focuses on discussing the results from Chapter 4. This encompasses comparing and contrasting the results to the existing literature, which includes the connection between the results and the theoretical frameworks presented in Chapter 2. The researcher also discusses the implications for school counselors, study limitations, and recommendations for future research.

Summary of the Study

Attention has an important role in students’ success in academic, personal, and social development. Students who struggle with attention problems may encounter difficulties in their academic performance and social relationships. Ray, Schottelkorb, and Tsai (2007) found that behaviors associated with ADHD negatively affected teachers and peers, which might further interfere with a child’s relationships and overall well-being at school. At school, a problem with attention is an issue school counselor can potentially address. This is because school counselors are trained to address human relations, problems solving, career development, learning theories, and program evaluation (Borders & Shoffner, 2003). Several studies have shown that there are positive effects of mindfulness on attention (Flook et al., 2010; Jha, Krompinger & Baime, 2007; Napoli, Krech & Holley, 2005; Semple, Lee, Rosa & Miller, 2010). However, there is no evidence-based mindfulness intervention specifically designed for school counselors to administer to students with attention problems. Therefore, there is a need to design an intervention specifically with school counselors in mind to address attention problems. In this study, the researcher examined the effectiveness of an
adapted mindfulness intervention for school counselors to use in addressing students’ attention problems.

The current study utilized an A-B-A single-case research design (SCRD) to examine the effectiveness of a mindfulness intervention on improving third and fourth graders’ attention (attention problems and on-task behaviors) and mindfulness. The participants consisted of six fourth graders and two third graders. There were two school counselors involved in this study, who attended the mindfulness training and implemented the MBAG-C with students. The researcher applied visual analysis to examine each individual’s data that was collected through the DOF. Additionally, the researcher calculated the percentage of data exceeding the median (PEM; Ma, 2006) to estimate the treatment effect. Finally, the researcher calculated the Relative Success Rate (RSR; Parker & Hagan-Burke, 2007) between treatment and comparison groups to strengthen the internal validity. Each of the hypotheses are discussed below.

**Research Hypothesis One**

The first hypothesis was that students who participate in a mindfulness intervention will have decreased attention problems. Based on the results, the researcher found that the MBAG-C was very effective for two participants, debatably effective for two participants, and not effective for one participant. From the visual analysis perspective, although the intervention was debatably effective for two of the participants and was not effective for one of the participants, the mean score for attention problems improved from the baseline phase to the intervention phase for these three participants (Jason-from 5.83 decreasing to 5.42; Sophia-from 4 decreasing to 3.67; Daisy—from 5 decreasing to 3.67). Furthermore, in reviewing the graph, the level of attention problems became stable for all participants after receiving the intervention.
Compared to the comparison group, the RSR calculation (.63/.17 =3.71), indicated that the students who participated in the MBAG-C were 3.71 times more likely to improve their attention problems across the six week period than the students in the comparison group.

The results from this study are consistent with previous research demonstrating that mindfulness interventions have positive effects on children’s attention (Flook et al., 2010; Napoli et al., 2005; Semple et al., 2010). However, the current study is unique in that it focused on a brief mindfulness intervention (30-minute sessions once a week for six weeks) compared to interventions with longer sessions that extended over several weeks (i.e., 30 minutes session, twice a week for eight weeks [Flook et al., 2010], 45 minute session, bimonthly for 24 weeks [Napoli et al., 2005], 90 minutes session for 12 weeks [Semple et al., 2010]). Therefore, the current study contributes new knowledge to the existing body of literature through showing promise for using a brief mindfulness intervention to address attention problems. Additionally, the current study is unique in that school counselors facilitated the intervention in comparison to community mental health professionals or academicians facilitating the intervention in previous studies. Based on the results from the current study, with a proper mindfulness training, school counselors can be instrumental in introducing the concepts of mindfulness in schools, which can be beneficial for students, as well as school personnel. Furthermore, the current study examined attention problems using a different research design (SCRD with observations using the DOF) compared to previous research using an experimental design with pre- and post-test (i.e., Child Behavior Checklist, Test of Everyday Attention for Children (TEA-C), Star Counting Test).
Research Hypothesis Two

The second hypothesis was that students who participate in a mindfulness intervention will have increased on-task behavior. The results revealed that the MBAG-C was very effective for two participants, debatably effective for two participants, and not effective for one participant for improving on-task behavior. From the visual analysis perspective, although the intervention was debatably effective for two of the participants and was not effective for one of the participants, the mean scores for on-task behavior improved for each of these participants from the baseline phase to the intervention phase (Eric-from 7.17 slightly increasing to 7.5; Sophia-from 8.67 increasing to 9.08; Daisy-from 5.67 increasing to 7.25). Therefore, more research is needed examining the effectiveness of the intervention in addressing on-task behavior. Nevertheless, in comparing the intervention group to the comparison group, the calculated RSR $.67/.17$ was 3.94, indicating that the students who participated in the MBAG-C were 3.94 times more likely to improve their on-task behavior across the six week period compared to students in the comparison group.

The definition of mindfulness is a function of an individual’s conscious, intentional choice and ability to be present in the current moment (Hanh, 1976; Nyanaponika Thera, 1972), which is an important components of students’ on-task behavior (doing what is expected in a given situation). With mindfulness training, students can increase their learning performance by being more focused (Langer, 1993). Napoli et al. (2005) examined the effectiveness of a mindfulness intervention on addressing students’ selective attention (child’s ability to direct their attention). Selective attention is essential for students to focus on what they have to focus on in the present moment (on-task behavior). Although this researcher did not measure students’ selective attention
specifically in the current study, the results from this study related to on-task behavior may also relate to selective attention. Nonetheless, more research is needed to examine the effectiveness of the brief intervention in addressing on-task behavior and the connection between on-task behavior and selective attention.

**Research Hypothesis Three**

The third hypothesis was that students who participate in a mindfulness intervention will have increased mindfulness. For the treatment group, we found that the MBAG-C ranged from debatably effective \((n = 1)\), to moderately effective \((n = 1)\), to very effective \((n = 3)\) for improving students’ mindfulness level. However, in examining the results from the comparison group, the researcher found that all of the participants in the comparison group also demonstrated improved mindfulness. The RSR calculation for mindfulness among treatment and comparison group was \(0.87/1.00 (0.87)\), indicating that the students who participated in the MBAG-C were 0.87 times more likely to improve their mindfulness across the six week period than the students in the comparison group. In other words, the students in the treatment group were less likely to improve their mindfulness compared to the students in the comparison group. However, in considering these results it is important to note that in observing the students completing the MAAS-C, the students who participated in the MBAG-C were more likely to pay attention to the MAAS-C questions and process their thoughts carefully. In contrast, almost all of the students in the comparison group rushed through answering the questions on the MAAS-C assessment most of the time. One participant marked the lowest option (1-almost never) for all of the MAAS-C question starting the third week of the study (12-week in total).
Although the MAAS-C has strong reliability and validity for children, it may not be appropriate to use in an A-B-A SDRD study, where students need to complete the assessment multiple times throughout the baseline, intervention, and post-intervention phases. Additionally, the instrument was previously normed with children in fourth through seventh grade (Lawlor et al., 2014) and the current study involved third graders, as well as fourth graders. The researcher found no assessments measuring children’s mindfulness with children younger than fourth grade or used in a study requiring repeated use beyond a pre/post-test format. Furthermore, in previous studies focused on mindfulness with children (e.g., Flook et al., 2010; Napoli et al., 2005; Semple et al., 2010), researchers examined whether a mindfulness intervention effected various child variables (i.e., executive function, anxiety, selective attention, etc.) without measuring the mindfulness level of the children. Thus, future research is needed in this area.

**Limitations**

There are limitations to consider with the current study. There is limited research on school counselors using mindfulness to address students’ attention problems. Therefore, more research is needed. Also, although the current study included a comparison group to strengthen internal validity, the SCRD still poses threats to internal validity (i.e., maturation). Furthermore, the sample size was small because of the nature of a SCRD. Due to the small sample size, several variables may potentially influence the results, such as students’ learning style and teachers’ teaching style. Replication studies would help address concerns related to the small sample size and threats to internal validity. Additionally, although the school counselors were encouraged to practice mindfulness before and during the MBAG-C, the researcher did not control for the school counselors’ mindfulness practices. Therefore, the mindfulness practices of
the school counselors may have affected students’ mindfulness learning and practices. Also, mindfulness teachers recommend that beginners start mindfulness practice in a quiet environment with less distractions because mindfulness requires participants to pay attention to their internal sounds and their experiences in the moment. However, due to scheduling difficulties present within the school setting, the school counselors had to facilitate groups during lunch periods, at times. As a result, students needed to practice mindfulness while eating their lunch and the room was right next to the cafeteria, which was noisy. Thus, this was not an ideal setting for the mindfulness small group sessions.

Other limitations included the researcher being one of the observers and the timeframe for observations. Although the researcher focused on observing students using an objective perspective, her observation may have been affected by her subjectivity. Regarding the timeframe, the study occurred during the last few months of the school year and there were some variations in the school schedule, which may have affected the classroom observation. One teachers also reported that there were more behavioral issues during the last week of the observation period. Therefore, readers should consider this in reviewing the data for the post-intervention phase. Furthermore, the data from the three-week baseline phase showed fluctuations for some of the participants, which might be due to the shorter period of the baseline phase. Therefore, the researcher recommends a longer baseline period in future studies, if needed, in order to obtain a stable baseline.

**Recommendations for Research**

Future research may focus on addressing the limitations identified in this study. In addition to the areas noted above, the researcher experienced difficulty in getting the
parental consent letter returned. Although this is a concern noted in many studies, it may have been particularly difficult in this study because the participants struggled with attention problems. Therefore, they also struggled with organization skills, especially the students with ADHD diagnosis (Stormont-Spurgin, 1997). This may contribute to students losing the consent form, or forgetting to return it. As a result, the researcher revised the protocol to include verbal consent from the parents, with permission from the institutional review board. Although, the researcher was able to obtain enough participants for the study, the study was started late and ended at the end of the school year. Therefore, in future research, scholars may seek to obtain verbal consent, as used in this study, or use other recruitment strategies to obtain parent consent. Also, in the current study, the researcher focused on students who struggled with attention problems, which included students with an ADHD diagnosis. However, the researcher did not control for ADHD medication usage. Therefore, researchers may seek to control for medication usage in future studies.

In addressing methodological limitations, researchers may employ a different research design that encompasses a larger group of participants. Also, future research may involve replicating the current study in different regions of the country and with more diverse students. Researchers may also examine whether adding more group sessions changes the outcome of the intervention.

The current study focused on examining attention problems of students. Several researchers have found that there is a relationship between attention problems and children’s performances in school, including academic performance, social behavior, and relationships (Barriga et al., 2002; Bellanti & Bierman, 2000; Duncan & Magnuson,
Therefore, in addition to measuring students’ attention problems, future research may focus on measuring whether the MBAG-C contributes to improved academic performance and social relationships. Although the current study focused on students’ attention problems, researchers have also reported several other benefits of using mindfulness with children and adolescents, including decreasing stress, and improving self-confidence, relationships with others, optimism, and self-esteem (Fisher, 2006; Schonert-Reichl & Lawlor, 2010; Valentine & Sweet, 1999). Mindfulness is also helpful for cognitive change, self-management, relaxation, and acceptance (Beisser, 1970; FoDoR & Hooker, 2008; Kabat-Zinn & Hanh, 2009). Thus, future research may focus on examining the effectiveness of using the MBAG-C to address these variables.

**Implications for School Counselors**

Although mindfulness is not a new concept in the counseling field, there is limited research examining the effectiveness of mindfulness with children, when school counselors implement mindfulness interventions. The results from this study provide some support for using mindfulness to address students’ attention problems and on-task behavior. School counselors can teach mindfulness strategies without emphasizing any specific issues (i.e., peer relationship, concentration in the class) through small group sessions, classroom guidance lessons, and individual sessions. School counselors can also incorporate mindfulness within sessions or lessons focused on other topics. For example, school counselors can help students use the concepts of mindfulness (i.e., focusing on his/her breathing, body sensations, etc.) when they struggle with focusing during class. With continuous mindfulness practice, students can learn to direct their attention.
The MBAG-C includes a variety of activities, which can be useful and fun when facilitated with young children. In the current study, the school counselors offered feedback about the mindfulness activities after implementing each session of the MBAG-C. The school counselors expressed that they were likely to implement the mindfulness activities from four sessions with future students and that they were neutral about using the content from the other two sessions.

Another benefit of school counselors implementing mindfulness interventions with students is that mindfulness may also help students regulate their emotions. The results of this study showed that MBAG-C can be helpful for improving students’ attention problems, including students’ fidgeting and inability to sit still. This indicated that students may become aware of their body and their behaviors by practicing mindfulness. After becoming aware of their body sensations or behaviors, students may respond positively to emotion-arousal situations, instead of reacting negatively to them. Through mindfulness practice, students are able to calmly separate their thoughts and feelings from the facts, which also helps them avoid negative thinking (Bishop, 2002). However, the results from the session reflections revealed that some of the students in this study had difficulty linking their emotions to their body sensations. Therefore, more mindful guidance and practice for the students who struggle with attention problems might be helpful.

With mindfulness, students may also learn self-management skills, which is crucial for growth and development (Semple, Reid & Miller, 2005). With self-management techniques, children and adolescents have a better ability to manage their attention, increase their self-awareness, and reduce anxious symptoms (Semple, Reid
& Miller, 2005). Students can also potentially improve their impulsive behaviors and decreased their reactivity when encountering challenging events with their improved self-awareness (Thompson & Gauntlett-Gilbert, 2008). In order to help students apply what they have learned in the small group settings to their daily life, the school counselors can encourage students to practice mindfulness outside of the sessions. This may include training teachers on how to use mindfulness techniques within the classroom. School counselors can also offer professional development opportunities for other school personnel as well. Furthermore, school counselors may send home information for parents on how to help their child use the mindfulness strategies at home and may also consider providing mindfulness workshops for parents and family members.

In addition to helping students improve their attention problems, mindfulness may also help foster awareness for school counselors and other school personnel. Through practicing mindfulness, individuals are able to develop a decentered viewpoint on one’s experiences with a non-judgmental, objective perspective. Individuals also witness their thoughts, sensations, and emotions as mindfulness phenomena (Burke, 2010). School counselors are also encouraged to practice mindfulness themselves before implementing it with students. This allows school counselors to role model mindfulness practice for students.

The present study involved a 6-session intervention to promote feasibility within the school setting. Although the researcher found some promising results, school counselors may want to extend the intervention beyond six sessions to further emphasize and practice the strategies presented in this intervention, when possible.
Additional sessions could further emphasize practicing mindful breathing, listening, sensations (i.e., tasting, smelling, touching, seeing), and movement. School counselors may also encourage and remind students to practice mindfulness when they see the students in the cafeteria, hallways, and during classroom guidance lessons. Ongoing reminders may help students gradually integrate mindfulness into their daily lives and increase their mindful awareness. The results of this study showed that some students improved their attention and on-task behaviors with continuously practices. Therefore, reminders might be helpful for reinforcing mindfulness practice. The study also supports school counselors obtaining data to examine the effectiveness of their interventions, as SCRD provides a feasible approach for school counselors to evaluate their interventions with students.

**Conclusion**

Attention has an important role in students’ success in academic, personal, and social development. Students who struggle with attention problems may encounter difficulties in their academic performance and social relationships. Although school counselors can help with addressing students’ attention problems, there is no evidence-based mindfulness intervention specifically designed for school counselors to administer to students with attention problems. Therefore, the current study was an attempt to close this knowledge gap.

Although students did not exhibit an increased level of mindfulness following the intervention, the results show promise for school counselors using the MBAG-C to address students’ attention problems and on-task behavior. However, more research is needed on the use of this new intervention. Nevertheless, school counselors may seek
to integrate mindfulness strategies within the school environment to strive for improving the school culture and the entire school community.
APPENDIX A
INFORM CONSENT

Dear Parent/Guardian,

I am a graduate student in the School of Human Development and Organizational Studies in Education, Counselor Education Program at the University of Florida, conducting research on the effectiveness of a mindfulness small group intervention on attention problems at school. The results of the study may help school counselors better understand different ways to help students pay attention in the class and even daily life activities, specifically by using mindfulness.

Teacher evaluations have suggested that your child might benefit from participating this mindfulness small group intervention. By participating, your child will learn strategies to direct their attention when needed. Your child will either attend a small group session with his/her school counselor for 30 minutes per week for 6 weeks, or receive a list of strategies to help with attention following the study. Your child will complete a demographic form at the beginning of the study (one-time) and a short mindful survey every week that takes about 5 minutes to complete. With your permission, I would like to ask your child to participate in this project. The school counselor of your child will decide when will be the best time to have this small group sessions implemented. This small group will try not interfere with any school work and essential school activities. Although there is no direct benefit to your child for participating, your child will learn some skills to pay attention.

With your permission, I would also like to videotape some of the small group sessions. The purpose of the video tapes is to make sure that the school counselors are following the intervention manual. Therefore, the focus for videotaping will be the school counselors instead of your child and the taping will include only the school counselor whenever possible. The video will be accessible only to the research team for verification purposes. At the end of the study, the video tapes will be erased. Each child will be assigned a code number to allow me to match the weekly questionnaires to the same person. The list of code numbers identifying the children will be kept secure in a locked location that only the researcher will access. Your child’s and your identity will be kept confidential to the extent provided by law. Participation or non-participation in this study will not affect your child’s grade or school activities.

You and your child have the right to withdraw consent for your child’s participation at any time without consequence. There are no known risks. No compensation is offered for participation. The results of this study will be available in May 2017 upon request. If you have any questions about this research protocol, please contact me at or my faculty supervisor, Dr. Jacqueline Swank, at jswanke@coe.ufl.edu. Questions or concerns about your child’s rights as research participant may be directed to the IRB02 office, University of Florida, Box 112250, Gainesville, FL 32611, (352) 392-0433.

Thank you,
Yi Wen Su

I have read the procedure described above. I voluntarily give my consent for my child,________________________________________, to participate in this project. I have received a copy of this description.

_________________________  ____________________________
Parent/Guardian                  Date
APPENDIX B
SCHOOL COUNSELOR CONSENT

Study ID:IRB201703007  Date Approved: 11/28/2017  Expiration Date: 11/28/2018

SCHOOL COUNSELOR CONSENT FORM

Protocol Title: Mindfulness-Based Intervention with Children with Attention Problems: An Intervention by School Counselors

Please read this consent document carefully before you decide to participate in this study.

Purpose of the research study:
The purpose of this study is to examine the effectiveness of a mindfulness small group intervention that is implemented by school counselors to examine whether this intervention can decrease students’ attention problems.

What you will be asked to do in this study:
You will be asked to participate in three hours of training addressing the role of mindfulness in students’ attention. During the training, a mindfulness small group intervention curriculum will be introduced and discussed. In the training, you will be asked to fill out a mindfulness survey and a demographic form. Following the training, you will be implementing the curriculum for six weeks (30 minutes per week) in a small group setting with elementary students (grade 3-4) presenting attention problems. The identified students will be screened by using the Teacher’s Report Form (TRF). Following each session, you will complete a session reflection journal briefly discussing your thoughts and any obstacles during the session. It will take approximately five minutes. Additionally, weekly on-site supervision/consultation will be available and at least one session will be observed or recorded for the purpose of treatment fidelity. Lastly, you will be asked to fill out a mindfulness survey again. It will take about 5 minutes.

Time required:
The mindfulness trainings will last three hours. You will conduct six, 30 minute sessions weekly with the elementary students. The reflection journal will take approximately 5 minutes each to complete. The on-site supervision/consultation sessions will depend upon your need.

Risks and benefits:
There is no anticipated risk in you participating in this study. The benefits of the study will be its contribution to school counseling techniques, richer implementation of mindfulness in the school settings, and insights into the potential effectiveness of mindfulness-based interventions.

Compensation:
You will receive the materials needed to implement the mindfulness small group intervention that you will also be able to use in the future. These materials will be listed in the mindfulness small group manual. No other compensation will be offered for participation.

Confidentiality:
APPENDIX C
TEACHER CONSENT

Study ID: IRB2017C0067 Date Approved: 11/28/2017 Expiration Date: 1/28/2018

TEACHER CONSENT FORM

Protocol Title: Mindfulness-Based Intervention with Children with Attention Problems: An Intervention by School Counselors

Please read this consent document carefully before you decide to participate in this study.

Purpose of the research study:
The purpose of this study is to examine the effectiveness of a mindfulness small group intervention that is implemented by school counselors to examine whether this intervention can decrease students’ attention problems.

What you will be asked to do in this study:
You will be asked to fill out the Teacher’s Report Form (TRF) for the students who might be struggling with attention problems.

Time required:
In order to complete Teacher’s Report Form (TRF), you might need 10 minutes to fill out a form for each child. Total 30-40 minutes might needed.

Risks and benefits:
There is no anticipated risk in you participating in this study. This study contributes to the body of knowledge about using this intervention to help with students’ attention problems, academic achievement, and social relationships.

Compensation:
No other compensation will be offered for participation.

Confidentiality:
None of your personal information will be collected. No student’s name will be used in any report. I will store all data in a secure location.

Voluntary participation:
Your participation in this study is completely voluntary. There is no penalty for not participating. You have the right to withdraw from the study at any time without consequence.

What will be done with the results of the study:
The results of the study will be analyzed as part of the researcher’s doctoral dissertation and will be submitted for publication. Participants may request a copy of the results after August 2017.

Who to contact if you have questions about the study:
Yi-Wen Su, M.A., Doctoral Candidate, Counselor Education, College of Education, University of Florida, syw7yue@ufl.edu, 319-594-0310
Jacqueline Swank, PhD, Associate Professor, Counselor Education, College of Education, University of Florida, swank@coe.ufl.edu.

Agreement:
I have read the procedure described above. I voluntarily agree to participate in the procedure and I have received a copy of this description.

Participant: ___________________________ Date: ___________
Principle Investigator: ___________________________ Date: ___________
MINOR ASSENT SCRIPT

My name is Yi-Wen Su and I’m a doctoral student at the University of Florida. I am trying to find ways that can help you pay attention in class and cope with your feelings when you are upset or mad. We will be working with children that go to school here. If you decide to participate, then you will be asked to answer some questions about yourself and some questions each week for six weeks that will take you about five minutes to answer about your ability to pay attention. You do not have to answer every question if you do not want to do so. You might also be asked to participate in a group with your school counselor about learning ways that might help you pay attention. During the small group, some sessions might be videotaped. But this videotaping is used to see how your school counselor does. So the focus is not on you but your school counselor. So you don’t have to worry about how you looks in the video. Your [parent / guardian] said it would be OK for you to participate. Would you be willing to participate in this study?
APPENDIX E
DEMOGRAPHIC QUESTIONNAIRE-STUDENTS

Please complete this form for your child participating in the study.

Student Initials ______________________________________________

Elementary School: ____________________________________________

Race/Ethnicity: _______________________ Age: ________________

Gender: _______________ Grade: __________________

❖ This information will be used only to describe the study participants. All information will be kept private in a secure location.
APPENDIX F
DEMOGRAPHIC QUESTIONNAIRE-SCHOOL COUNSELOR

Name: ________________________________________________________________

Elementary School: ______________________________________________________

Elementary School Address: ______________________________________________

City: _________________________ Zip Code: _______________

Phone: ____________________ E-mail: _____________________________

Race/Ethnicity: _______________________ Age: ____________________

Years of Elementary School Counseling Experience: __________________________

❖ This information will be used only for contact and demographic purposes. All information will be kept confidential in a secure location.
APPENDIX G
MINDFULNESS-BASED ATTENTION GROUP FOR CHILDREN (MBAG-C) MANUAL

Mindfulness-Based Attention Group for Children (MBAG-C)
Purpose: This mindfulness-based attention group for children (MBAG-C) aims at helping children have better ability to pay attention in a gentle and non-judgmental way. Through this intervention, the students will learn different ways to pay attention to their daily life, including their academic activities.
Format: activities, short demonstrations, guided discussion
Length: last for six week sessions
Duration: approximately 25-30 minutes for each session
Group Size: three to five children
Age: third and fourth graders
Target Population: students who struggle with attention problems

SESSION OUTLINE

<table>
<thead>
<tr>
<th>Session</th>
<th>Theme</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session one</td>
<td>What is Mindfulness?</td>
<td>Introducing mindfulness by introducing breathing techniques. Explain the group rules.</td>
</tr>
<tr>
<td>Session two</td>
<td>Mindful Sensory: How Do You Live with Your Body?</td>
<td>Mindful breathing Mindful sensory: Mindful listening</td>
</tr>
<tr>
<td>Session three</td>
<td>Mindful Sensory (part two): How Do you Feel the World?</td>
<td>Mindful sensory: Mindful touching, seeing, smelling, eating</td>
</tr>
<tr>
<td>Session four</td>
<td>Move Mindfully</td>
<td>Mindful movement</td>
</tr>
<tr>
<td>Session five</td>
<td>Mindful Emotions and Thoughts</td>
<td>Mindful emotion and thoughts</td>
</tr>
<tr>
<td>Session six</td>
<td>Closing Activity</td>
<td>Review what students have learned throughout this small group by using mindful bear as a theme.</td>
</tr>
</tbody>
</table>

After the first session, every session will contain the following activities in sequence:
1. Check-in: Asking students what did they do to practice mindfulness for the past week.
2. Breathing activity
3. Sensory activity (practice different sensory activities each session, such as mindful listening, mindful walking, etc.) or movement activity or mindful emotion & thoughts activity
4. Discussion: discuss what they felt while doing/practicing this activity.
5. Closing the session: Asking students to do mindfulness challenge/task for the following week.

Disclaimer: This manual is used in conjunction with the curriculum’s training. Training is provided to anyone interested in conducting this curriculum. This appendix presents
the outline of the MBAG-C. For more information and detailed manual, contact Yi-Wen Su at sv7yasu@ufl.edu or sv7yasu@gmail.com.

 Materials Needed: (Materials will be provided by the researcher)
  o Glitter bottle
  o Raisins
  o Tissues
  o Tea bags/coffee beans (These material will be provided before the last session.)

Introduction

Mindfulness is a function of an individual's conscious, intentional choice and ability to be present in the current moment (Hanh, 2016; Nyanaponika Thera, 1972). When individuals are mindful, they are fully aware through sensation, including visual, auditory, gustatory, tactile, cognitive, consciousness, and emotional human sensory features (Napoli et al., 2005). Intentional attention can be understood as the self-regulation of attention (Bishop et al., 2004). Through mindful process, individuals are able to develop a de-centered viewpoint on one's experiences with a non-judgmental, objective perspective. Individuals would also witness their thoughts, sensations, and emotions as mindfulness phenomena (Burke, 2010).

Mindfulness have been found to be helpful for improving children’s attention. Mindfulness exercises can be helpful for increasing receptive attention to the here and now moment. One of the common exercises emphasized directing attention to a current experience or sensation. Through different types of mindfulness exercises, the children learned to initiate, monitor, and shift their attention (Flook et al., 2010). The goals of the training were to help children learn to (a) improve their attention to the current experience, (b) address each experience without judgement, and (c) view every experience with a “beginner’s eye”, (d) increase felt-sense awareness of inner and outer experiences.

Components of Mindfulness-Based Attention Group for Children (MBAG-C):

There are several activities that consist of this intervention, including breathing activity, sensory awareness activity, non-judgement, and mindful response. Using a variety of mindfulness practices is important and may include mindful eating, mindful listening, and mindful walking (Thompson & Gauntlett-Gilbert, 2008). Varying practices not only keeps children and adolescents engaged in the practices, but also encourages them to apply mindfulness to their daily lives. Therefore, each session will consist of different activities to keep students engaged and help them practice different formats of mindfulness.

The following are the sample activities from the MBAG-C.

• Breathing Activity:
  Mindful breathing is an important and a basic technique to practice mindfulness. Students can learn to breathe and make breathing as an anchor for practicing mindfulness. Furthermore, breathing is a portable technique that students can do it anywhere and whenever.
When practicing mindful breathing, students might feel physically or emotionally uncomfortable since they start to pay attention to their bodies which they did not experience before. As a facilitator, you can gently say: “See if you can notice what happens in your mind and body without thinking about it too much. Don’t worry about why or why not. It is okay if you find yourself distracted. You can gently bring your attention back to your breathing. You know what? If you find yourself distracted, that is actually the first step of being mindfulness!”

- **Three Part Breath** (Napoli et al., 2005)
  - Get comfortable, sit with your back straight and chest lifted.
  - Slowly take the breath in through your nose.
  - Notice how the breath moves from the lungs from your tummy, ribs, chest and shoulders. Notice your belly filling up like a balloon.
  - When you exhale, let the breath ooze out of your lungs slowly, like a balloon losing its air, until they are empty.

- **Sensory Activity (Listening, Smelling, Touching, Eating, Seeing):**
  Sensory awareness is a second area of focus within the mindfulness intervention. It is “the direct focus on some specific sensory aspect of the body or outer or inner environment — is a frequently occurring yet rarely recognized phenomenon of inner experience” (Hurlburt & Heavey, 2009, p.231). Sensory activities help students gain awareness through five senses, including listening, seeing, tasting, smelling, and touching.

  ➢ **Mindful Smelling, Feeling, Touching, and Tasting:**
  - **Tasting Raisin** (Mindfully tasting a raisin is originally from Jon Kabat-Zinn’s Mindfulness Based Stress Reduction Program; Stahl & Goldstein, 2010)
    - For this activity, you will need to prepare some raisin for students to have three to four of raisins. The purpose of this activity is to ask students to fully pay attention to the foods they put into their mouths and other senses while looking at, smelling, and touching the raisin. (By practicing this activity, students will learn to pay attention to the present moment instead of past or future.)
    1. First, ask students whether or not they have eaten raisin before. How does it taste? How does it make you feel when touching it? How does it smell?
    2. Then, ask students to pretend they did not eat raisin before. In order to fully taste the raisin, ask students to follow your instruction:
      - First, I want you all close your eyes and I am going to place a raisin in your hand. After you get the raisin, hold it and touch it gently with your fingers. Ask students how do they feel?
      - Then, put the raisin in front of their nose. Ask them what do they smell?
      - Now take a lick. How does that feel like on your tongue?
Then, put the raisin in your mouth but NOT to chew yet! How does that taste?
Now, take a small bite. How does that make you feel? What are the textures (soft, hard, crispy, hot, cold, wet, or dry, etc.)? What are the flavors (sour, bitter, sweet, spicy, etc.)?
3. Now, you can chew the raisin. But chew it slowly and fully. Chew it longer than you used to.
4. Lastly, slowly swallow it and feel how does that make you feel while raisin going through your throat.

- **Mindfulness of Movement:**
  - **Mindful Moving:**
    ❖ The objective is to remain focused on the physical sensation of every aspect of movement, including walking and some movement while sitting on the chair. By practicing mindful movement, students will be able to practice mindfulness every moment. This activity also does not require students to sit for long period of time. So this can be beneficial for the students who struggles with attention problems.

    **[Mindful Moving]**
    1. First, ask students whether they know how to walk, stand up, raise hand, or move legs.
    2. Then, ask them do they ever notice how do they feel while doing all of these actions.
    3. Start this activity by say that there are other ways you can help your mind become clear, remember the glitter jar, not just through breathing, seeing, eating mindfully. We can help our mind become clear with our action/movement as well, including walking, standing, catching a ball, etc. But in order to be mindful while doing all of these actions, you will need to start to slow down these actions in order to fully feel it or sense it.
    4. Then, invite students to try some mindful movement.
    5. First of all, demonstrate slowly standing up. *(Slowly stand up while instructing that students should pay attention to their legs, hips, feet, other bodies part)*
    6. After your demonstration, ask students to slowly stand up.
    7. After all of the students stand up, ask their feelings while slowly stand up.
    8. Practice it again.

- **Mindfulness of Thoughts:**
  - **Mindful Student’s Past, Present, Future** *(Burdick, 2014, p.189)*
    ❖ The purpose of this activity is to help student become aware of their past, present, and future thoughts and encourage them to focus on their present thoughts. One of the mindfulness goals is to develop an ability to stay in the present moment.
1. First, as a group leader, you will need to share a little your own personal experiences. You might share that in your everyday experiences you sometimes have several thoughts in your mind. As a human, we sometimes think about things that happened in the past. For example, this passing Christmas. How was that day? Some of thoughts are happening right now in the present. For example, how they (the students) is reacting in the present moment. Other thoughts are about somethings that has not happened yet. For example, what I am going to eat for dinner?

2. Then, tell students that you are going to present them several scenarios to see whether they are able to identify what thoughts are related to the past, present, or future.

3. Please see the statements in Appendix I. Help students to identify what thoughts are in the present moments. What thoughts were related to the past? What thoughts are related to the future?

4. Then, ask students their own thoughts in the present moments. Ask them do they have some thoughts that are about the future or the past?

5. Explore with students about the different feelings when thinking about future and past. How those might be different from the thoughts in the present moment. (Use previous statements as examples if they have difficulties to answer the questions.)
   ✓ When Sally thought about the past (what Joe did to her), she got angry. Instead, she could focus on whatever she is doing in the present moment.
   ✓ When Jim thought about his past experience, he became worried. Instead, he could probably enjoy the happy moment with his brother.
   ✓ Focusing on the present moment, Susan is able to enjoy the present moment instead of thinking about how rude Jane was.

6. Closing this activity by encouraging students to pay attention to the present moment instead of thinking about the past and future.
Session One Outline:

Overview of the Session:
This session aims at introducing “mindfulness” concept to the students by using concrete object (glitter bottle). Mindful breathing and mindful bodies will also be introduced in this session, which are basic techniques to practice mindfulness.

Objectives:
- a. Understand the concepts of mindfulness
- b. Know how to do mindful breathing and what their bodies should do when doing mindful breathing

Key Points:
- Define mindfulness
- Introduce mindful breathing and mindful bodies

Needed Materials:
- Glitter bottle (use to introduce “mindfulness” this abstract concept)
- White board or black board to show the group rules (Optional).

The definition of mindfulness:
“Being aware of what’s happening as it’s happening” (Kaiser-Greenland, 2006).
“Pay attention to your life, here and now, with kindness and curiosity” (Saltzman, A, 2011).
“Paying attention to what’s going on right here, right now inside of us or outside of us” (Debra Burdick, 2013).

*Choose one of them that is easiest for you to explain mindfulness to the students.

The Structure of the Session:
- Introduction (Purpose, Group Rules)-----8 minutes
- What is Mindfulness (How does mind affect them?)-----7 minutes
- Breathing Activity: How to correctly breath & Mindful Breathing------9 minutes
- Discussion------3 minutes
- Closing------3 minutes
Session Two Outline

Overview of the Session:
This session aims at teaching students how to practice mindfulness by using their ear, hearing.

Objectives:
a. Students will learn different ways of paying attention using their ear.
b. Students will be able to mindfully listen for a period of time.

Key Points:
- Practice mindfulness using their hearing.

Needed Materials:
- Computer and speaker
- Internet

The Structure of the Session:
- Check-in———5 minutes
- Breathing activity———5 minutes
- Introducing mindful listening———14 minutes
- Discussion———3 minutes
- Closing———3 minutes
Session Three Outline

Overview of the Session:
This session aims at practicing “mindfulness” by using their four senses: seeing, touching, smelling, tasting. The raisins will be used to help students learn how to mindfully small, touch, see, and taste. This mindful eating can be practiced all the time when students are eating something.

Objectives:
a. Learn to use different senses to practice mindfulness

Key Points:
• Practice mindfulness while using their four sense: seeing, touching, smelling, tasting.

Needed Materials:
• Flowers or somethings smell good (for mindful breathing activity; i.e. tea bag)
• Raisins
• One other food that is allowed for your school and the students are not allergic to.

The Structure of the Session:
- Check-in-----5 minutes
- Mindful listening-----2 minutes
- Breathing activity-----5 minutes
- Introducing mindful eating-----12 minutes
- Discussion-----3 minutes
- Closing-----3 minutes
Session Four Outline

Overview of the Session:
This session aims at helping students learning pay attention to their body sensations while doing the movement.

Objectives:
- a. Students will increase their body awareness.
- b. Students will increase concentration.
- c. Provide students an alternative method to practice mindfulness

Key Points:
- Practice mindfulness while doing any movement

Needed Materials:
- Computer or music player (any device that can play music)
- Prepare two songs to play (one is slow rhythm, another is quick rhythm. You can choose the songs are more popular among the students.)
  - Suggested fast rhythm song: https://www.youtube.com/watch?v=OQ6nctEH8jY&list=PLV45rSzpV7y36V5CTeoYckmFv2XojE9wu (I Like to Move It - Official Madagascar King Julian Version)

The Structure of the Session:
- Check-in----5 minutes
- Breathing activity----3 minutes
- Mindful listening & introducing mindful movement----16 minutes
- Discussion----3 minutes
- Closing----3 minutes
Session Five Outline

Overview of the Session:
This session aims at helping students learn that we all have different thoughts and feelings. One of the skills of mindfulness is to notice these thoughts and feelings without engaging them too much. Instead, we can learn to pay attention to the present moment.

Objectives:
a. Learn to be aware of the thoughts and feelings.
b. Be able to distinguish present, past, future thoughts
c. Learn to identify emotions and how those emotions make their bodies feel

Key Points:
- Become aware of thoughts and feelings

Needed Materials:
- Attachment # 2 (Handout)

The Structure of the Session:
- Check-in-----5 minutes
- Breathing activity & mindful movement-----5 minutes
- Introducing Mindfulness of thoughts and emotions-----15 minutes
- Discussion-----2 minutes
- Closing-----3 minutes
Session Six Outline

Overview of the Session:
This session aims at celebrating with the students about what they have learned throughout these sessions. The facilitator will help students to review what they have learned about mindfulness and ways to practice mindfulness.

Objectives:
a. Students will be able to demonstrate different ways to practice mindfulness.
b. Students will be able to share what they will do to practice mindfulness after this small group.

Key Points:
- Review different methods of practicing mindfulness
- Terminate the small group by using closure activity

Needed Materials:
- Mindfulness Certificates for each students
- A kind of food or any material with scent (i.e. tea bag, coffee beans, cinnamon)
- A stamp or stickers (when students are able to complete a task, give a sticker [or use stamp] to them to stick to that specific task column on the certificate.)

The Structure of the Session:
- Check-in-----5 minutes
- Mindful breathing activity & mindful listening-----5 minutes
- Mindful sensing activity----- 6 minutes
- Mindful movement-----6 minutes
- Mindfulness of thoughts and emotions----- 5 minutes
- Closing-----3 minutes
Mindfulness Certificate

Congratulations on learning all of the mindfulness tricks in this small group. After completing the following challenges, you will graduate from this small group and become a mindful student!

- What is Mindfulness?
- Mindful Breathing
- Mindful Listening
- Mindful Eating, Smelling, Touching
- Mindful Thoughts and Feelings
Attachment # 2
Handout
Past, Present, Future Game

Are these statements about the past, the present, or the future?

- Jen is worried about her math exams that she must take next week. Example: A present moment thought might be “Jen is studying her math today so she will do well on her exams next week.
- Sally is angry because Joe bumped into her yesterday and knocked her books on the floor.
- Sophie is thinking about how beautiful the flowers are on the table in front of her.
- Jada loves her math teacher.
- Jim worries that his brother will get sick like he did last year.
- Jordan is enjoying the story that his mother is reading to him.
- Susan can’t stop thinking about how rude Jane was to her.
- Bill is sure that the kids he will meet at camp won’t like him.
- Jose is noticing how happy he feels today.
- Preston is paying attention to doing his homework.
- Steve is trying to study but keeps thinking about her good friend.
- Jordan is worrying about going to a new school.

*Slight revision was made to make sure the information is appropriate for this mindfulness small group intervention.
References
MINDFULNESS-BASED ATTENTION GROUP FOR CHILDREN (MBAG-C) SESSIONS REFLECTION JOURNAL

Counselor:

Student Initials:

Session #:

Date:

Please describe your general thoughts after implementing this week’s materials (i.e. what happened, what went well, etc.):

Please describe your difficulties while implementing this week’s materials (if there were any obstacles in the session, how did you address them):

Would you change anything in this session (i.e., activities, the ways interacting with the students, the way you lead the activities or the group, etc.)?

Using the 1-5 scale below to answer the following questions:

<table>
<thead>
<tr>
<th>Questions</th>
<th>1-5 Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>How likely you will implement the activities in this week’s session again with other students/groups?</td>
<td>Very Unlikely 1</td>
</tr>
<tr>
<td>How satisfied you feel about your performance in this session?</td>
<td>Very Dissatisfied 1</td>
</tr>
<tr>
<td>How satisfied you feel about students’ performance during this session?</td>
<td>Very Dissatisfied 1</td>
</tr>
</tbody>
</table>
## APPENDIX I
### CHECKLIST FOR TREATMENT FIDELITY

<table>
<thead>
<tr>
<th>Analysis of the Session</th>
<th>Check/Uncheck</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Counselor well prepared for the session (get materials ready, get students on time).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Counselor implemented session for 30 minutes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. The intervention was initiated at appropriate time.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Counselor reached the goal of today’s session.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Counselor used the proper materials for the activities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Counselor checked in with students about their mindfulness practices.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Counselor leaded mindful breathing activity.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Counselor introduced the core concept of this session following the manual (timeframe, activity structure).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Counselor challenged students to practice mindfulness technique for this week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Counselor interacted with students mindfully.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Re: Mindfulness Program for children

maria.napoli <maria.napoli.asu@gmail.com>

Tue 11/28/2017 9:16 PM

to: Su, Yi-Wen <sv7yasu@ufl.edu>;

Hi Su,

Your program looks interesting and I believe the children will enjoy the activities. I am fine with you using any of the activities from my program. I am looking forward to hearing the results. Good luck and have fun!

Maria Napoli

On Mon, Nov 20, 2017 at 10:07 AM, Su, Yi-Wen <sv7yasu@ufl.edu> wrote:

Hi Dr. Napoli,

I hope this email finds you well. I am Yi-Wen Su and am working on developing a mindfulness intervention for school counselors as my dissertation. I am wondering can I have your permission to use two of your activities in your Attention Academy Program?

The attached is the curriculum that I created. I am wondering is it appropriate for me to submit a publication after I complete my dissertation? Since my work is inspired by your Attention Academy Program, I want to make sure my program looks fine for you and is appropriate for me to publish. In my current program, I have included two of your activities. But if it is not appropriate, please let me know. I will change it. Thank you in advance for your help. Again, I really appreciate your knowledge regarding mindfulness.

I hope you have a wonderful Thanksgiving.

Best regards,

Yi-Wen Su
RE: Permission for using activities in "Mindfulness skills for kids and Teens"

deb@thebrainlady.com

Thu 10/26/2017 3:32 PM

To: Yi-Wen <sv7yasu@ufl.edu>

Hi Yi-Wen,
Thanks for contacting me.
Yes, you have my permission to include up to 6 skills from my Mindfulness Skills for Kids and Teens workbook as long as you include the copyright information on each page you use from the worksheets and an appropriate citation in the References section.

Warmly,
Deb

Debra E Burdick, LCSWR, BCN
The Brain Lady
Enfield, CT and Estero, FL

Like my business page at: www.Facebook.com/TheBrainLady
Subscribe to my blog and find excellent resources at: www.TheBrainLady.com
Follow me on Twitter: @brain_lady

Home of:
ADHD: Non-Medication Treatments and Skills for Children and Teens  Benjamin Franklin GOLD award winner in Psychology
A Holistic Approach to Success with ADHD
Mindfulness Training CD
Mindfulness Skills Workbook for Clinicians and Clients - #1 BEST SELLER on Amazon
Mindfulness Skills for Kids and Teens - #2 BEST SELLER on Amazon
Medication free alternatives for ADHD, depression, anxiety, and sleep

--------- Original Message ---------
Subject: Permission for using activities in "Mindfulness skills for kids and Teens"
From: "Si,Wen" <sv7yasu@ufl.edu>
Date: 10/26/17 11:42 am
To: "deb@thebrainlady.com" <deb@thebrainlady.com>

Dear Debra,

I am Yi-Wen Su, a doctoral candidate at the University of Florida in Counselor Education. I am currently working on my dissertation. I am developing a mindfulness small group intervention for school counselors for my dissertation. Specifically, this intervention aims at addressing students' attention problems. I have your several books and found that there are some activities in your "Mindfulness skills for kids and Teens:

https://outlook-scll.office.com/iowa/?realm=ufl.edu

1/2
LIST OF REFERENCES


BIOGRAPHICAL SKETCH

Yi-Wen Su is the daughter of Chung-Jen Su and Hua-Hsing Hsu, the middle child of three. She was born and raised in Taiwan. Yi-Wen completed her undergraduate degree at the National Chengchi University in Taiwan in 2010, earning a Bachelor of Arts degree in elementary education. In 2011, Yi-Wen came to the United State to pursue her master’s degree in school counseling at the University of Iowa. She worked at elementary, middle and high schools as a school counseling intern and enjoyed helping students. She was eager to help more students with evidence-based interventions. As a result, she enrolled in the Counselor Education program at the University of Florida in 2014, and earned her Doctor of Philosophy in Counseling and Counselor Education in 2018. Her future goals include conducting research focused on examining counseling interventions, and training prospective counselors, with a focus on school counseling.