Supporting Pre-service Teachers with Skills from Dialectical Behavior Therapy

Almut K. Zieher

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Supporting Pre-service Teachers with
Skills from Dialectical Behavior Therapy

by

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DISSERTATION
Submitted in Partial Fulfillment of the Requirements for the Degree of
Doctor of Philosophy

Educational Psychology
The University of New Mexico
Albuquerque, New Mexico

May, 2019
Dedication

I dedicate this dissertation to my family.

To those who could not accompany me on this journey:

my mother Waltraut, my sister Ute, my brother Dirk, and my niece, Alexandra Sevi.

To those who stood by me with support and patience:

my children Maia, Sepharino, Ragnar, and Alexi,

my husband, Max, and my father, Klaus.
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Abstract

Mindfulness trainings, which tend to include daily home meditation practice, have been found to improve in- and pre-service teachers well-being, but findings indicate that participants struggle to complete the recommended home meditation practice. A mindfulness training based on Dialectical Behavior Therapy (DBT) skills may be a more feasible training format for teachers because the home practice is informal and easily integrated into daily life. DBT skills are also discrete and easy-to-understand and directly relate to the intrapersonal and interpersonal challenges teachers face. Although DBT skills-based trainings have been used with non-clinical populations, to date no study has been identified exploring the use of DBT skills training with teachers generally or pre-service teachers specifically. This dissertation reports the findings of a study of a DBT skills-based training with pre-service teachers to improve their mindfulness and well-being. This study spanned 81 days and used a multiple-baseline single-case experimental design with longitudinal daily diary data from 11 participants. Qualitative homework data, facilitator reflections, and post-training interviews with four participants provided supplementary qualitative data. Quantitative findings indicate that the DBT skills training resulted in higher levels of mindfulness and positive affect the evening after participants
attended trainings and continued elevated positive affect the following evening. The
study did not find phase effects of training. Qualitative evidence shows that participants
used DBT skills in a variety of personal and professional settings to address negative
emotions or deal with difficult situations. According to interviews and homework data,
the skills presented were easy to understand and apply. The discussion includes
limitations of the study and implications for future research.
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CHAPTER 1: INTRODUCTION

Researchers and practitioners internationally have largely come to a consensus that teaching is stressful and requires a high degree of flexibility and skill to respond to the wide variety of demands that are inherent in contemporary education (Ancona & Mendelson, 2014; Brown & Nagel, 2004; Dicke, Stebner, Linninger, Kunter, & Leutner, 2017; Eilam & Poyas, 2006; Emerson et al., 2017; Ergas, Hadar, Albelda, & Levit-Binnun, 2018; Kyriacou, 1987; Lomas, Medina, Ivtzan, Rupprecht, & Eiroa-Orsa, 2017; Sneyers, Jacobs, & Struyf, 2016). Although modification of teaching environments and accountability demands could address some of these stressors, others are inherent to teaching and must be coped with effectively if teachers are to remain in the profession (Brown & Nagel, 2004; Dicke et al., 2017; Kyriacou, 1987). Researchers have explored a variety of ways to better prepare teachers to cope with the stresses of teaching. Promising among these areas is mindfulness (Ancona & Mendelson, 2014; Anderson, Levinson, Barker & Kiewra, 1999; Benn, Akiva, Arel, & Roeser, 2012; Brown & Nagel, 2004; Ewing & Smith, 2003; Flook, Goldberg, Pinger, Bonus, & Davidson, 2013; Franco, Mañas, Cangas, Moreno, & Gallego, 2010; Frank, Reibel, Broderick, Cantrell & Metz, 2015; Gold, Smith, Hopper, Herne, Tansey, & Hulland, 2010; Harris, Jennings, Katz, Abenavoli, & Greenberg, 2016; Jennings et al., 2017; Jennings, Frank, Snowberg, Coccia, & Greenberg, 2013; Jennings, Snowberg, Coccia, & Greenberg, 2011; Kemeny et al., 2011; Roeser et al., 2013; Taylor et al., 2016).

Most researchers have based teacher mindfulness trainings on Mindfulness Based Stress Reduction (MBSR), which relies on daily formal home meditation practice. Reports indicate that teachers have difficulty implementing such a practice, especially
when there is heightened time pressure and stress (Hue & Lau, 2015; Poulin, 2009).

Another promising mindfulness approach, Dialectical Behavior Therapy (DBT), relies upon discrete, informal practices that teachers could use in any setting or as part of any activity. Mindfulness trainings with teachers need to be both effective and feasible. DBT skills-based trainings for teachers may be an accessible alternative to meditation-based trainings.

**Mindfulness**

Contemporary conceptions of mindfulness are based on eastern traditions which generally include two parts: (1) a mindful attitude that is characterized by a nonjudgmental, open, accepting and curious perspective that is maintained while (2) consciously attending to the present moment experience (Bishop et al., 2004; Kabat-Zinn, 2003; Shapiro, Carlson, Astin & Freedman, 2006; Young, 2016). Some researchers also emphasize the purpose or intent of mindfulness (Shapiro et al., 2006; Hwang, Bartlett, Greben, & Hand, 2017; Hyland, 2015a; Hyland, 2015b). Historically the purposes of mindfulness practices have been ethical in nature: to be and do good in the world and reach enlightenment (Hwang et al., 2017; Hyland, 2015a; Hyland, 2015b; Lindahl, Fisher, Cooper, Rosen, & Britton, 2017). However, the purposes of mindfulness reported in contemporary western literature arise from a more clinical perspective, addressing specific issues such as pain, stress, or substance use (Chiesa & Serretti, 2014; Creswell, 2017; Hwang et al., 2017; Veehof, Trompetter, Bohlmeijer, & Schreurs, 2016; Linehan, 2015). Because of the clinical success of mindfulness interventions such as MBSR, mindfulness interventions have been modified and developed for use in educational applications and their purpose has broadened to include teachers’ well-being and how

Shapiro and colleagues (2006) theorized that when cultivating a mindful attitude and attending mindfully, practitioners have an altered moment-by-moment experience that translates into an altered perception, or reperceiving (Hwang et al., 2017; Mikulas, 2010). Consciously attending to the present moment has a calming effect because the parasympathetic nervous system is activated, explaining the reduction in people’s perceived stress identified in many studies (Harris et al., 2016; Hwang et al., 2017). This calmer state, coupled with greater conscious awareness of what is happening within and outside the body, provides the practitioner with more information from which to act with wisdom and intention (Hwang et al., 2017). As a result, individuals more effectively regulate their emotions and connect with others, and they tend to be less reactive, better able to cope and have a more positive experience (Harris et al., 2016; Hwang et al., 2017; Roeser et al., 2013). This reperceiving translates into mindful behavior that is more aligned with the current moment and thus more effective.

Research on mindfulness in teachers includes studies examining the relationship between mindfulness and other variables such as improvements in perceived stress, quality of sleep, perceived well-being, coping, personal efficacy, and burnout symptoms (Ancona & Mendelson, 2014; Anderson et al., 1999; Benn et al., 2012; Brown & Nagel, 2004; Ewing & Smith, 2003; Flook et al., 2013; Franco et al., 2010; Frank et al., 2015; Gold et al., 2010; Harris et al., 2016; Jennings et al., 2011; Jennings et al., 2017; Jennings et al., 2013; Kemeny et al., 2011; Roeser et al., 2013; Taylor et al., 2016). Teachers who
participate in mindfulness trainings have shown these benefits as well as increased emotional support toward students and improved student behavior (Jennings & Greenberg, 2009; Singh et al., 2013). Teacher mindfulness trainings tend to rely primarily on meditation, a formal and time intensive type of mindfulness practice, and less on informal practices that can be integrated throughout the day, even though the significant time commitment of meditation can be an obstacle for implementing mindfulness trainings, and it is unclear whether increased practice time improves outcomes (Harris et al., 2016; Hue & Lau, 2015; Kemeny et al., 2011; Winzelberg & Luskin, 1999). Mindfulness trainings that use informal practices may be more efficacious because they do not require such a significant time commitment.

Like other clinical mindfulness interventions, DBT, which consists of distinct therapeutic and skills components, has been found effective in treating several clinical conditions including Borderline Personality Disorder (BPD), eating disorders, depression, substance abuse and addiction, suicidality and self-injury, and difficulties with emotion regulation generally (Linehan, 2015). Skills-only applications, which are solely pedagogic in nature, have also been used with family members of people with BPD, people who work with individuals who can be challenging to cope with (e.g., clients with Alzheimer’s), to develop resilience in middle and high school students, and in other work settings (Drossel, Fisher, & Mercer, 2011; Jenaabadi, 2017; Linehan, 2015; Rizvi, Steffel, & Carson-Wong, 2013). Unlike MBSR, DBT skills do not rely on formal and extended practices. Instead, DBT relies on informal skills designed for use throughout the day (Linehan, 2015). Such a training will likely be more feasible to implement with busy teacher populations.
Mindfulness researchers in education have called for the implementation of mindfulness curriculum in teacher preparation programs as a way to prevent burnout and to improve teacher well-being and retention (Meiklejohn et al., 2012; Roeser, Skinner, Beers, & Jennings, 2012). These recommendations are consistent with research on pre-service teacher stress and subsequent teacher burnout (Brown & Nagel, 2004; Dicke et al., 2014; Dicke, Elling, Schmeck, & Leutner, 2015; Ewing & Smith, 2003; Fives, Hamman, & Olivarez, 2007; Gokalp, 2008; Intrator, 2006; Klassen & Durksen, 2014; Sneyers et al., 2016; Zimmerman et al., 2012). Despite the preventative and proactive potential for mindfulness trainings only three mindfulness articles and two dissertation studies were located involving pre-service teachers (Hue & Lau, 2015; Kerr et al., 2017; Poulin, 2009; Poulin, Mackenzie, Soloway, & Karayolas, 2008; Winzelberg & Luskin, 1999). This study involved a mindfulness training with pre-service teachers using DBT skills determining if such training was feasible and if its increased teachers’ mindfulness and well-being.

**Overview of Measurement and Method**

Correlational studies have measured mindfulness in terms of meditation experience, as a pre-existing participant practice or with self-report survey measures of mindfulness. Self-report measures of mindfulness tend to be correlated with experience meditating and increased dispositional mindfulness, supporting their reliability (Baer, Samuel, & Lykins, 2011; Lau et al., 2006; Walach, Buchheld, Buttenmüller, Kleinknecht & Schmidt, 2006; Quaglia, Braun, Freeman, McDaniel, & Brown, 2016). In teacher mindfulness trainings, mindfulness is often an outcome measured using self-report (Ancona & Mendelson, 2014; Anderson et al., 1999; Benn et al., 2012; Frank et al., 2015;
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Hwang et al., 2017; Jennings et al., 2017; Jennings et al., 2013; Jennings et al., 2011; Lau et al., 2006; Roeser et al., 2013; Walach et al., 2006). Though not seen in the teacher education literature, researchers have also used ecological momentary assessment (EMA) to measure mindfulness and well-being because such measures are less dependent on memory and context, which can cause biased ratings (Brown & Ryan, 2003; Moore, Depp, Wetherell, & Lenze, 2016; Shiffman, Stone, & Hufford, 2008).

Most of the experimental mindfulness studies reviewed used a randomly assigned control and intervention group to examine between-group differences, a method that requires larger samples sizes (Anderson et al., 1999; Benn et al., 2012; Crain, Schonert-Reichl, & Roeser, 2017; Flook et al., 2013; Franco et al., 2010; Frank et al., 2015; Harris et al., 2016; Hue & Lau, 2015; Hwang et al., 2017; Kemeny et al., 2011; Loew, Götz, Hornung, & Tritt, 2009; Roeser et al., 2013; Taylor et al., 2016; Winzelberg & Luskin, 1999). In contrast, one experimental mindfulness study with teachers used a multiple baseline single-case design with three teachers and found beneficial effects on student behaviors as a result of a meditation training (Singh et al., 2013).

Single-case designs require repeated measures that allow the researcher to examine within-person trends, which can better inform intervention development (Kratochwill & Levin, 2014; Smith, 2012). Traditionally, single-case experimental studies have used daily behavioral data, but EMA techniques such as using daily diary data have recently been advocated for and used in single-case designs (Bentley, Nock, Sauer-Zavala, Gorman, & Barlow, 2017; Shiffman, Stone, & Hufford, 2008; Shingleton et al., 2016; Smith, 2012). Both EMA and single-case design techniques allow the researcher to examine within-subject changes.
Some of these primarily quantitative studies, as well as some stand-alone studies, have used qualitative methods to gain insight into participants’ experience of mindfulness trainings (Burrows, 2015; Miller & Nozwana, 2002; Napoli, 2004; Poulin, 2009; Reiser & McCarthy, 2018; Schnaider-Levi, Mitnik, Zafrani, Goldman, & Lev-Ari, 2017; Schussler, Jennings, Sharp, & Frank, 2016; Sharp & Jennings, 2016; Singh et al., 2013; Solloway, 1999; Soloway, 2017). Longitudinal EMA data and qualitative approaches provide a more nuanced understanding, that can better inform the development of trainings. EMA single-case and qualitative designs require a smaller sample size, making it a preferred combination for training development (Shiffman et al., 2008; Smith, 2012).

**Statement of the Problem**

Mindfulness trainings have the potential to alleviate teacher stress and subsequent burnout and could be used proactively in teacher preparation programs. However, mindfulness research has primarily focused on mindfulness trainings with in-service teachers. Teacher mindfulness trainings tend to use formal and time intensive practices rather than informal practices that teachers might more easily integrate into their daily lives. Most teacher mindfulness training studies used experimental designs, which require large samples and primarily examine between-group differences. Such studies tend to be cost-prohibitive, and do not allow the researcher to consider the within-person effects, which could inform training development.

**Purpose of the Study**

This study used a multiple-baseline single case design with daily diary data, supplemented by qualitative data, to examine the effects of a mindfulness training with pre-service teachers in order to (1) consider the possible effectiveness and plausibility of
a mindfulness training based on DBT skills, (2) better understand pre-service teachers’ changes in mindfulness and well-being in response to the training, and (3) inform future mindfulness training development for pre-service teachers.

**Significance of the Study**

This study extended the mindfulness intervention literature, which holds promise for addressing issues of teacher burnout and turnover. This study added to the mindfulness training research by intervening with pre-service teachers, a group that is understudied. Unlike other mindfulness trainings, this study applied informal DBT skills designed for use in daily life. Lastly, in this study I combined daily diary data collection and multiple-baseline single-case experimental design elements as an alternative for use in intervention research.

**Research Questions**

1. Did a mindfulness training using select DBT skills result in increased mindfulness and well-being in pre-service teachers?
2. How did pre-service teachers develop, interact with and use DBT skills during training delivery?

**Researcher Positionality**

This researcher positionally statement begins with a brief biographical portrait followed by a chronological description of influential professional and personal experiences which led me to research the role of cognitive, emotional and social processes in teaching, learning, and well-being. I then present the epistemological perspectives I hold and how these perspectives have informed my approach to research.

My childhood experiences, witnessing the schooling and mental health challenges
of foster- and blood-siblings as well as my own experience as a child emigrant and second language learner, roused in me a high level of empathy and commitment to acting with integrity. This combination made me pursue a bachelor’s degree in Elementary Education as a mother of three preschool-age children. I creatively negotiated child-care, income challenges, and higher education while founding a charter school. I come from a well-educated white, middle-class background yet spent half of my adult life reliant on food-stamps and all of it living close to or below the poverty line. These experiences instilled in me an even greater compassion for the challenges many others must overcome to support their children or succeed as students.

As a young mother, and later as an elementary school teacher, I struggled to interact with my children and my students in line with my values. My greatest struggle as a teacher revolved around my ability to treat students with care, respect, and patience. Although I knew how to show care, respect and patience, and I believed wholeheartedly in doing so, there were times when I was not able to enact behaviors that aligned with my knowledge and values. At that time, I did not know that others had identified a disconnect between teachers’ knowledge and behaviors (Cornelius-White & Harbaugh, 2010; Fairbanks et al., 2010; Tomlinson, 1999a; Tomlinson, 1999b), though I believed that there was some way of aligning knowledge, values, and behaviors through psychological avenues.

The misalignment was especially prevalent for me during times of high stress. I found myself overwhelmed with the concurrent demands of classroom teaching: attempting to meet students’ academic, emotional, and social needs. To me teaching felt akin to driving in traffic. Some days, and with some cohorts, teaching was like cross-
country driving, with longer stretches of relaxed and easy-to-navigate country traffic and intermittent, short-lived stretches of intense city traffic. In contrast, there were some days and cohorts when teaching was like non-stop, intense city traffic with fender-benders and crashes that bring driving to a halt. On days and with cohorts dominated by the latter, I was extremely challenged to consistently engage in a caring and calm manner with my students, defaulting to automatic and ineffective behaviors. To alleviate the secondary stress caused by guilt and shame, I would remind myself to accept my human fallibility while continuing to strive for caring and constructive behavior.

This experience, which reflects the emotional labor of teaching (Frenzel, 2014), negatively affected my well-being, sense of self-efficacy, and effectiveness as a teacher. I knew students needed calm and care, especially when working through challenges, and I had come to realize that teachers require something akin to this support in order to embody relational and responsive teaching. To learn more about the processes underlying this knowledge-behavior discrepancy and related coping, I enrolled in the Educational Psychology Ph.D. program at the University of New Mexico.

In the first years of my Ph.D. program I started connecting the discrepancy between knowledge and behavior with implicit and explicit cognition. I more closely examined the role of emotions and emotion regulation and their relationship with cognition, which would later lead to my research focus on mindfulness. However, it was several unexpected emotional challenges in my personal life that provided me a first-hand, nuanced understanding of the role of cognition and emotion as it relates to behaviors.

Living and dying are part of life. Like many who have lost a loved one, I
experienced grief when my older sister and niece were in a fatal automobile accident seven years before starting my Ph.D., and like many, I had moved forward with life. However, the fall I started my Ph.D. program my mother died from an unexpected and aggressive recurrence of cancer, and the last week of the same semester my older brother was unexpectedly killed in a hit-and-run. Unlike my previous grief, these losses shattered how I saw myself and my life. My experience of life became dark and dominated by painful emotions.

My coursework was a light in this darkness. I used it as an opportunity to understand the impact of grief on cognition and emotions better. I realized these painful emotions were entirely appropriate given the circumstances, and I did my best to embrace them, even when others were uncomfortable with the degree of pain I felt. I will not present my journey through grief in detail. Suffice it to say that I carried on, but my life had taken on an emotionally grey hue. My emotions had become even more unpredictable and volatile. The stress of grief exacerbated the disconnect between my values and behavior and largely eliminated any sense of well-being.

As I was finishing my coursework and at the cusp of my dissertation, my father was diagnosed with dementia. As the only living relative, I had the task of managing my fathers’ affairs, a task that took almost three years to complete. Overwhelmed by this task and the typical stressors of developing a dissertation proposal, I started to wonder if I could make it through these challenges. I concluded that just as there is a weight that could crush the strongest weightlifter, with enough emotional load even the most resilient person would collapse. I thought I had reached the maximum emotional load I could handle. This dissertation is evidence that I persevered and succeeded. To my amazement,
I also regained joy in life and optimism about the future.

At Dr. Lemberger-Truelove’s suggestion, I participated in an intensive, four-week DBT program. Much of what I learned was familiar. I recognized the acceptance skills of DBT, which were equivalent to my mantra as a teacher (‘be gentle with yourself’), but many of the change skills were new to me. I especially appreciated the distress tolerance skills designed to help make it through the most emotionally painful times. Their very inclusion acknowledged the fact that life involves pain and validated my experiences with grief. The DBT skills were simple, and I was able to apply them easily in life. The emotion regulation skills went beyond the emotional self-awareness of the social-emotional learning programs I had used as a teacher; they provided a way of understanding how emotions work, and more importantly, how to influence them.

After the intensive, I attended weekly DBT skills training groups. In these sessions I often remembered classroom situations in which I could have used DBT skills to help me cope with classroom challenges and support my students. I wondered what teaching would have been like if I had the DBT skills then; whether it would have helped me behave in ways aligned with my values and helped me cope better with the emotional demands and stressors of teaching. For these reasons, I set out to apply the pedagogical skills of DBT in educational settings.

My perspective as a researcher, especially my pragmatic and critical leanings, are strongly influenced by my experiences as a teacher and human. I am a realist, as my research involves understanding social and psychological phenomena that exist independently of the researchers’ or participants’ perspectives (Willig, 2015). My view is more aligned with subtle realism, which acknowledges that “we do not have direct access
to” these phenomena (Madill, 2012). This is counterweighted with a pragmatic perspective that reality arises out of “actions, situation, and consequences rather than antecedent conditions” (Creswell, 2009, p. 10) and a focus on what works in that context (McCaslin, 2012).

I approach these perspectives critically by identifying the social and power structures from which behavior and knowledge arise (Carspecken, 2012). For example, the capacity to emotionally regulate is based on a number of personal and social presuppositions. A person must have the capacity to emotionally regulate in terms of genetic predispositions, skills, and momentary or contextual vulnerabilities. Additionally, a person must have the self-awareness and social knowledge to recognize and express emotions in ways that others expect. Social structures of oppression result in greater contextual demands and personal vulnerabilities, which exacerbate power inequalities. Disparate rules of emotional expression can result in the assumption of emotion regulation issues when there are none and when the level of emotion and the expression are appropriate from the expresser’s perspective. From my critical perspective, pedagogical activities should correct and equalize such disparities by accounting for cultural and personal backgrounds.

As this illustrates, my perspective is also aligned with critical realism. I believe that “our beliefs and expectations influence the way we perceive and theorize” about phenomena (Madill, 2012, p. 6). I see my scholarly work as a form of activism, addressing issues of power and oppression by acknowledging the “struggle between conflicting discourses and competing definitions of the situation” (Vannini, 2012, p. 3).

Just like an examination of the chemical and neurological processes of the brain
does not tell us what is occurring in a person’s mind, what someone perceives of the workings of their mind may not reflect what has actually occurred. Still, reports of participant perceptions can inform our understanding of how the mind functions. In my view the phenomenon of mindfulness exist apart from the intrapersonal and interpersonal contexts it arises in, and the perspectives the researcher and participants bring to a study, including the perspectives produced by the research questions and methods employed, influence how the phenomenon is understood. As a researcher I consider what perspectives, knowing they are all limited in scope, might best contribute to understanding mindfulness in a way that can inform practical application and address social justice issues.

Based on this view of reality, it is not surprising that this dissertation included quantitative and qualitative methods, each serving different purposes. I used the quantitative approach primarily to examine whether the DBT skills training was effective in changing participants’ mindfulness and well-being. A secondary focus of the study was on how the training translated into participant mindfulness and well-being, which I primarily considered using qualitative means. A final focus was on how participants used the DBT skills. Using mixed methods allowed me to examine change as a result of the DBT training from three different vantage points: the big-picture effectiveness of the training, the day-to-day effects of training, and the participants’ use and perceptions of DBT skills.

**Summary**

This study involved the first identified mindfulness training using DBT skills with pre-service teachers. The study used a multiple baseline single-case experimental design
with daily diary data. Chapter Two of this dissertation is a review of the related literature including a brief examination of stress and burnout in pre- and in-service teachers, followed by a review of the development and use of teacher mindfulness trainings to address teacher stress and well-being, including an overview of the typical training components, theories of change, and outcomes. Chapter Two includes an overview of the skills components of DBT, including research evidence similar to that of other teacher mindfulness trainings. Chapter Two will end with a consideration of alternatives in measuring mindfulness and studying mindfulness trainings. Chapter Three will provide a detailed description of the study and Chapters Four and Five will present the results from the analyses. The final chapter includes a discussion of how the results relate to the purposes of the study, the limitations of this study, implications, and directions for future research pertaining to DBT skills training.
CHAPTER 2: REVIEW OF THE LITERATURE

The following review of literature consists of two parts. The first part is a review of the literature related to mindfulness and the second part is a review of the methods and measurement approaches used in mindfulness research that informed this study. For the literature on mindfulness, I begin with an overview of what mindfulness is and an examination of how mindfulness fits into the field of educational psychology. A summary of the outcomes associated with mindfulness generally and with teachers specifically follows. The third, longer section provides a review of mindfulness trainings that have been used to address well-being and stress generally, and how researchers have modified mindfulness applications for use with teachers. The mindfulness section will close with a review of other mindfulness trainings with teachers and how this relates to pre-service teacher stress and teacher burnout. The second part of this chapter contains a brief examination of how mindfulness studies have typically been conducted and the types of measures that have been used, with a more thorough examination of single-case experimental design (SCED) for intervention development and the use of ecological momentary assessment (EMA).

PsycINFO was used to identify articles beyond those accumulated by the author before beginning the study. The search terms included meta-analysis, review, mindfulness, yoga, mindfulness-based stress reduction (MBSR), contemplation, dialectical behavior therapy (DBT with caregiver, adult, adolescent, child), teacher, education, professional development, stress, burnout, pre-service, teacher training, professional development, ecological momentary assessment, and single case. A systematic search was conducted for mindfulness-based trainings with teachers and DBT
interventions before and after the study was conducted. In preparing this dissertation, I conducted an additional search of mindfulness, teacher and well-being, teacher and self-regulation, and teacher and stress in the top four educational psychology journals (Educational Psychologist, Journal of Educational Psychology, Contemporary Educational Psychology, Educational Psychology Review). Lastly, I reviewed the references of the accumulated literature to identify additional relevant literature in.

**Mindfulness**

The type of mindfulness discussed in this dissertation originates from traditional Eastern practices that were designed to alleviate suffering (Germer, 2013). It is thus not surprising that researchers have used mindfulness interventions to address conditions associated with suffering such as stress, anxiety, and depression (Germer, 2013). In the 1980s and ’90s, Kabat-Zinn and Linehan both developed mindfulness interventions for therapeutic application (Carmody et al., 2009). Kabat-Zinn developed Mindfulness Based Stress Reduction (MBSR), and Linehan developed Dialectical Behavior Therapy (DBT), which were soon followed by other mindfulness informed clinical applications (Carmody, Baer, Lykins, & Olendzki, 2009). MBSR showed significant promise in clinical settings and was later adapted for applications with teachers, since teaching was identified as a highly stressful occupation (Brown & Nagel, 2004; Dicke et al., 2017; Eilam & Poyas, 2006; Kyriacou, 1987; Sneyers et al., 2016). As was the case in therapeutic applications, other mindfulness-informed teacher trainings were also developed (Ancona & Mendelson, 2014; Anderson et al., 1999; Burrows, 2015; Franco et al., 2010; Harris et al., 2016; Loew et al., 2009; Napoli, 2004; Schnaider-Levi et al., 2017; Singh et al., 2013; Solloway, 1999).
This review begins with an overview of what mindfulness is and how it relates to educational psychology. The review continues with an overview of MBSR and the related clinical benefits, a review of adaptations of MBSR for teachers, and an examination of other mindfulness trainings with teachers. The review ends with an overview of DBT, its therapeutic benefits, and the benefits of skills-only adaptations with non-clinical populations. Since this is the first identified study of DBT with teacher populations, the review does not include adaptations for teachers. The review ends with a consideration of pre-service teachers’ needs and its relationship to stress, risk of burnout, and mindfulness.

**Overview of Mindfulness**

Western conceptions of mindfulness are based primarily on eastern mystical approaches geared toward reaching enlightenment and rising above suffering (Capra, 1983; Lindahl et al., 2017). Often Buddhist principles and the meditation practices associated with them have been incompletely adopted in an attempt to alleviate suffering and promote health (Lindahl et al., 2017; Meiklejohn et al., 2012; Roeser et al., 2012). Among these Buddhist principles are the four Noble Truths. The four Noble Truths state that (1) everything is impermanent and ever-changing, (2) the source of suffering is our attachment to a false reality, (3) we can end suffering, and (4) a way to stop this suffering is to follow Buddha’s Eightfold Path to enlightenment (Capra, 1983).

The Eightfold Path provides guidelines that progress from being able to perceive reality accurately (right seeing, right knowing), to acting accordingly (right action, the Middle Way), and finally with how meditation can be used to attain enlightenment (Capra, 1983). Western applications have incorporated these and ideas from other
mystical eastern wisdom (e.g., yogic applications born from Hinduism), in various secular and religious ways. In broad terms, these adaptations, as well as other approaches that have similar contemplative traits, fall within the umbrella of mindfulness. This review will focus on secular applications born from the Buddhist principles just mentioned.

The reviewed mindfulness studies relate to ideas from the Nobel Truths and the Eightfold Path. Most mindfulness approaches were adopted to alleviate suffering from physical or emotional pain (Lindahl et al., 2017). Others also used these principles to help individuals develop a mindful mode of functioning to address maladaptive behaviors and clinical conditions (Gotink et al., 2015; Hwang et al., 2017; Linehan, 2015; Teleki, 2008).

Mindfulness was defined by Kabat-Zinn (2003) as “the awareness that emerges through paying attention on purpose, in the present moment… to the unfolding of experience moment by moment … nonjudgmentally” (p.144). Bishop and colleagues offer a definition of mindfulness that is more reflective of how mindfulness is conceptualized in the psychological literature, stating “mindfulness in contemporary psychology has been adopted as an approach for increasing awareness and responding skillfully to mental processes that contribute to emotional distress and maladaptive behavior” (Bishop et al., 2004, p. 230). Implicit in this definition is that mindfulness practices result in being more mindful, which in turn reduces the experience of suffering.

Mindfulness practices involve intentionally eliciting moments of being mindful and can be put into two categories: formal and informal (Germer, 2013). Formal practice is distinct from daily living and is most often in the form of meditation but can also include other contemplative activities such as journaling and yoga (Ergas, 2015; Harris et
al., 2016; Jennings et al., 2017; Jennings et al., 2013; Jennings et al., 2011; MLERN, 2012; Singh et al., 2013). Informal practices involve the “application of mindfulness skills in everyday life” (Germer, 2013, p. 15). Mindfulness practices are thought to increase the tendency to attain or maintain mindfulness (Germer, 2013; Young, 2016).

Shapiro and colleagues (2006) theorize that by cultivating a mindful attitude and attending mindfully, practitioners have an altered experience of their moment-by-moment experience that translates into an altered perception, or reperceiving (Carmody et al., 2009; Mikulas, 2010). Reperceiving can be likened to the right seeing and knowing principles of the Eightfold Path. Being mindful coupled with reperceiving is thought to result in increased well-being by affecting the practitioner’s (1) self-regulation of emotions and attention, improving the immediate experience, (2) flexibility in thinking, emotionality, and behaviors related to more effective living, (3) clarity about what is important to them so they can be proactive in how they live their life, and (4) capacity to tolerate exposure to a range of pleasant and unpleasant experiences with decreased reactivity while improving their immediate experience (Carmody et al., 2009; Germer, 2013; Harris, et al., 2016; Roeser et al., 2013; Shapiro et al., 2006).

Meditation is one way of developing right seeing, right knowing, and a path toward right action, linking mindfulness practices to the ideas subsumed in the Eightfold Path. However, an intensive and extended meditation practice, as implemented in religious settings, was primarily intended to achieve enlightenment (Capra, 1983; Lindahl et al., 2017). The process of attaining enlightenment usually involves discomfort and, sometimes, distress (Lindahl et al., 2017). Traditional and religious mindfulness applications that use meditation acknowledge this discomfort and protect for associated
risks, but the more secular and scientific approaches tend to focus mainly on the benefits of formal meditation practices (Lindahl et al., 2017; Van Dam et al., 2018).

A higher risk of negative experiences with meditation appears to be related to practitioner, practice, relational, and personal factors. Practitioner characteristics, such as how the practitioner conceptualizes the experience (e.g., as problematic), a mismatch between their expectations and their actual meditative experience, and other biological vulnerabilities are thought to be related to negative experiences (Lindahl et al., 2017). Practice factors, including greater intensity and type of practice, have also been associated with adverse experiences. Identified as especially risky were retreat experiences and concentration or insight practices (Lindahl et al., 2017; Shapiro, 1992). Poor relationships with the meditation teacher, the practice community and its members, others in everyday life, and others in early life, as well as isolation, which is often inherent in silent retreats, have been associated with negative experiences with meditation (Lindahl et al., 2017). Lack of self-care behaviors related to sleep, diet, exercise, and use of recreational drugs also represented an increased personal risk of negative experiences (Lindahl et al., 2017).

In turn, several factors appear to reduce the risk of adverse reactions. Practitioners who have conceptualizations that normalize the experience and who align expectations with goals are at lower risk (Lindahl et al., 2017). Lowering the intensity of the practice and ensuring a regular practice also appears to reduce risk, as does developing social support generally and with meditation teachers and a meditation community specifically (Lindahl et al., 2017). Addressing vulnerabilities through effective health behaviors including sufficient sleep, exercise, and a healthy diet, or “engaging in other activities
described as grounding, calming, and embodying” are also suggested (Lindahl et al., 2017, p. 24). Though not specifically studied, teacher mindfulness trainings that rely primarily on extensive, formal meditation practice, such as MBSR, may pose increased risk. In contrast, mindfulness trainings that rely on short and informal mindfulness practices, such as DBT skills training, may reduce such risks. Additionally, there are DBT skills that address personal vulnerability factors, that are calming and body-centered, and that support tolerating unpleasant experiences (Linehan, 2015), consistent with the suggestions Lindahl and colleagues (2017) identified.

**What is Mindfulness?**

Contemporary conceptualizations of mindfulness in the literature include varied and overlapping components (Bishop et al., 2004; Ergas, 2015; Hyland, 2015a; Hyland, 2015b; Shapiro et al., 2006; Young, 2016). In recent years, researchers have provided several distinct yet similar theories of mindfulness in the literature. Bishop and colleagues (2004) provide a concise conception of mindfulness, using other literatures to define each construct. In this conception, mindfulness includes two components. The first component, *self-regulated attention* is associated with skills in sustaining attention, switching or moving attention from one stimulus to another, and refraining from or “inhibit[ing] secondary elaborative processing of thoughts, feelings, and sensations that arise in the stream of consciousness” (Bishop et al., 2004, p. 233). These descriptions of self-regulated attention reflect conceptions of educational psychology concepts related to executive functioning and metacognition. Self-regulated attention involves working memory by maintaining attention on aspects of the present moment and inhibition of thoughts unrelated to the present moment (Bishop et al., 2004). Metacognition, or
awareness of one’s thoughts and how one’s thinking works, is reflected by mindfulness’ focus on developing awareness of one’s thoughts, feelings and how they relate to experience (Garland & Gaylord, 2009).

The second component, orientation to experience, consists of approaching the present-moment experience with curiosity and acceptance. Bishop and colleagues (2004) describe a curious and accepting orientation to experience in terms of the expected result it has on the practitioner, including “reductions in the use of cognitive and behavioral strategies to avoid aspects of experience,” referring to literature on coping, dispositional openness, and anxiety (p. 233). Further, Bishop and colleagues (2004) explain that when doing mindfulness practice:

the client is instructed to make an effort to notice each object in the stream of consciousness (e.g., a feeling), to discriminate between different elements of experience (e.g., an emotional “feeling” sensation from a physical “touch” sensation) and observe how one experience gives rise to another (e.g., a feeling evoking a judgmental thought and then the judgmental thought heightening the unpleasantness of the feeling (p. 234).

In this way, mindful awareness not only relates to self-regulation of attention but also self-regulation of emotions. Awareness of how thoughts and feelings interact, coupled with replacing judgmental thoughts with accepting thoughts, change emotional responses (Chiesa, Serretti, & Jakobsen, 2013; Garland, Gaylord, & Fredrickson, 2011; Linehan, 2015). Jacobs and Gross (2014) describe this type of emotion regulation as an appraisal.

Shapiro and colleagues (2006) consider mindfulness as an interwoven triad of three axioms that represent internal behaviors based on what occurs during meditation
practice. Two of these axioms, *attention* and *attitude*, are similar to Bishop et al.’s (2004) self-regulated attention and orientation to experience respectively (Shapiro et al., 2006). The third axiom is *intention*. The intention is the purpose for engaging in mindfulness practice, “which for Buddhism was enlightenment and compassion for all beings” and in contemporary applications has focused more on stress reduction, pain management, and other pathology (Shapiro et al., 2006, p. 375). Intention reflects the ethical underpinnings and reasons for engaging in mindfulness practices and mindful living (Shapiro et al., 2006; Hyland, 2015a; Hyland, 2015b).

Brown and Ryan (2003) provide a slightly different perspective on these constructs, adding the notion of consciousness and awareness to explicate attention. They state:

*Consciousness* encompasses both awareness and attention. *Awareness* is the background “radar” of consciousness, continually monitoring the inner and outer environment. One may be aware of stimuli without them being at the center of attention. *Attention* is a process of focusing conscious awareness, providing heightened sensitivity to a limited range of experience (Westen, 1999). In actuality, awareness and attention are intertwined, such that attention continually pulls “figures” out of the “ground” of awareness, holding them focally for varying lengths of time (p. 822).

In this way, awareness encompasses both the explicit (conscious) and implicit (unconscious) processes related to cognitive constructs (Brown & Ryan, 2003; Hassin, 2013). Information processing theory indicates that someone who practices consciously, with enough repetition, will automatize and implicitly execute the practiced task (Shell et
Research on cognition indicates that the human brain processes information through integration of implicit and explicit means, although there is some evidence that implicitly learned information might be accessed implicitly without conscious awareness (Finn, Lee, Kraus, & Hudson Kam, 2014; Hassin, 2013; Salidis, 2001). Based on these perspectives, mindfulness could be seen as making explicit, through conscious awareness, aspects of the present moment experience that are usually processes implicitly or automatically. Since learning appears to be most robust when it occurs with conscious attention, mindfulness offers a way to bring conscious awareness to implicit behavior, both internal and external. This provides an opportunity to alter implicit behavior, for example by changing thoughts so they elicit a different emotional response (Gregg, Seibt, & Banaji, 2006; Shell et al., 2010).

Mindfulness in Educational Psychology

Mindfulness relates to educational psychology constructs of cognition and emotion, specifically executive function, metacognition, and self-regulation as well as information processing theories (Garland & Gaylord, 2009; Shell et al., 2010). Despite this, mindfulness is not prominent in the educational psychology literature, with articles only appearing in the top educational psychology journals in the last five years. A search of the top four peer reviewed educational psychology journals (Educational Psychologist, Journal of Educational Psychology, Contemporary Educational Psychology, Educational Psychology Review) resulted in identifying six articles in two journals related to mindfulness in the last 10 years (January 2008 - September 2018) with all articles published since 2013. Two articles in the Journal of Educational Psychology reported on mindfulness trainings with teachers (Jennings et al., 2017; Roeser et al., 2013). The
Educational Psychology Review contained another four articles. One edition included an essay about the use of mindfulness with children in school settings and a research review of meditation trainings in schools (Shapiro et al., 2015; Waters, Barsky, Ridd, & Allen, 2015). Another reviewed positive psychology programs with students, including mindfulness interventions, and the last article reported on a meta-analysis of interventions to address teacher burnout, which included eight mindfulness approaches (Iancu, Rusu, Măroiu, Păcurar, & Maricuțoiu, 2017; Shankland & Rosset, 2017). The following review provides information from the teacher-related articles from this search, as well as articles published in other peer-reviewed journals from associated fields, to provide an understanding of how researchers have used mindfulness with teachers and how DBT skills may be beneficial for pre-service teachers specifically.

**Mindfulness Outcomes**

Meditation and mindfulness have been associated with increased well-being, though in the literature some adverse reactions have been noted (Lindahl et al., 2017; Shapiro, 1992). Meditation has been associated with improved interpersonal interactions, anxiety, negative emotions, neuroticism, mindfulness, perceptions, attention, cognition, stress, behaviors, self-realization, positive emotions, self-concept, empathy, well-being, intelligence, learning and memory, negative personality, emotion regulation, visual dexterity and attention (listed in order of decreasing respective effect sizes from just under 0.45 to just over 0.15; Sedlmeier et al., 2012).

Additionally, higher dispositional mindfulness has been associated with greater well-being including sleep, self-compassion, personal efficacy, positive affect, non-reactivity and effective emotional and attentional self-regulation (Bränström, Duncan, &

**Mindfulness Interventions**

Gold and colleagues (2010) stated that “mindfulness-based approaches are being recognized as effective ways to establish and maintain health and well-being (Baer 2003; Brown & Ryan 2003; Williams et al. 2001)” (p.184). Meta-analyses reflect benefits of mindfulness-based interventions including reductions in sleep disturbance, pain, the pressures of cancer and other medical treatments, stress, psychological disorders, substance use, depression, anxiety, and improved well-being (Chiesa & Serretti, 2011; Chiesa & Serretti, 2014; Hilton et al., 2016; Khoury, Sharma, Rush, & Fournier, 2015; Veehof et al., 2016; Virgili, 2015). The most common approach used, including in teacher applications, are variations of mindfulness-based stress reduction (MBSR), though other applications with teachers have been developed as well (Meiklejohn et al., 2012). What follows is a review of findings from MBSR, with a focus on applications with teachers, and other mindfulness-based teacher trainings, including conclusions from qualitative analyses. An in-depth examination of DBT and a consideration of how mindfulness-based interventions generally, and DBT skills training specifically, relate to pre-service teachers, teacher stress, burnout, and self-regulation will close this section.
Mindfulness Based Stress Reduction

MBSR has been considered “a widely disseminated and frequently cited exemplar of mindfulness training,” and is associated with a variety of well-being and health benefits (Gold et al., 2010, p. 184). MBSR typically involves 26 hours of formal meditation training delivered as eight 2.5-hour weekly training sessions, a one-day silent retreat, and a recommended 45 minutes of meditation home practice six days a week, supported with CD recordings (Carmody & Baer, 2009; Flook et al., 2013; Frank et al., 2015; Gold et al., 2010). MBSR sessions include body scans, sitting and walking meditations, loving-kindness meditations, choiceless awareness, and yoga as well as how to maintain a mindful attitude, including beginner’s mind, nonjudgment, nonstriving, patience, acceptance, letting go, and trust (Flook et al., 2013). Additionally, the sessions include presentation and discussion of coping with challenges and stress, including the role of awareness and perspective as well as reflections, discussions, and opportunities to have questions answered (Flook et al., 2013). Informal practices are supported by calendars to track pleasant and unpleasant experiences (Frank et al., 2015).

In a review, Carmody and Baer (2009) report the number and duration of MBSR program sessions varied from 4 to 10 and were 2.5 hours long. Some trainings did not include the all-day session, whereas others included a half-day or a whole-day session (Carmody & Baer, 2009). Thus, MBSR trainings ranged from 6 to 28 hours in length with a mode of 16 hours (Carmody & Baer, 2009). Carmody and Baer (2009) did not find that the duration of MBSR programs correlated with effect sizes of outcome measures, suggesting that shorter interventions are worth pursuing, but indicating there is a need to examine the relationship between practice time and outcomes more closely.
Consistent with these mixed findings, Gotink and colleagues (2015) noted that just four of 23 meta-analyses found increased minutes of home meditation practice and increased session attendance associated with greater improvements in stress and mood. Another review and meta-analysis of MBSR and Mindfulness Based Cognitive Therapy (MBCT) interventions presented these issues and found that participants on average did 64% of the recommended 45 minutes of home practice, or about 30 minutes of home practice each day, six days a week (Parsons, Crane, Parsons, Fjorback, & Kuyken, 2017). Of the 43 studies examined, 65% reported a small but significant relationship \( r = .26 \) between the amount of home practice and the outcomes measured (Parsons et al., 2017). Parsons and colleagues (2017) identified ten studies that had less than the standard 45 minutes, six times a week recommended home practice. For studies with shorter home practice recommendations the reported home practice minutes were also less (Parsons et al., 2017).

**MBSR Therapeutic Outcomes.** Several reviews and meta-analyses have been conducted to examine the effects of MBSR in various populations (Chiesa & Serretti, 2009; Gotink et al., 2015; Khoury et al., 2015; Teleki, 2008). Teleki (2008) identified that MBSR had medium effect sizes on outcome measures \( d = 0.54 \) in waitlist experiments, with a large effect size for stress \( d = 0.80 \) and medium effect sizes for anxiety \( d = 0.44 \), depression \( d = 0.51 \), and distress \( d = 0.55 \) outcomes. Teleki (2008) identified larger effects for studies with healthy samples \( d = 0.66 \) in comparison to participants receiving treatment for medical reasons \( d = 0.34 \). Reflecting this pattern, a review and analysis of 23 meta-analyses of randomized control trials using MBSR and MBCT interventions in healthcare settings found significant, but lower effect sizes representing improvements in
participants’ depression \((d=0.37)\), anxiety \((d=0.49)\), stress \((d=0.51)\), quality of life \((d=0.39)\), and physical functioning \((d=0.27; \text{Gotink et al., 2015})\). Also reflecting this pattern, Khoury and colleagues (2015) reported large effect sizes for depression (within group \(g=.68\); between group \(g=.80\)), stress (within group \(g=.83\), between group \(g=.74\)), anxiety (within group \(g=.55\); between group \(g=.64\)), distress (within group \(g=.57\); between group \(g=.62\)), and small to medium effect sizes for quality of life (within group \(g=.44\); between group \(g=.53\)) and burnout (within group \(g=.39\); between group \(g=.26\)) from a meta-analysis of MBSR with healthy individuals.

Interventions related to medical treatment were designed to improve well-being, particularly anxiety, depression, and stress in populations dealing with cancer, chronic pain, cardiovascular disease, depression, and anxiety as well as other populations including incarcerated individuals, adult students, and children (Gotink et al., 2015; Khoury et al., 2013). In healthy populations, trainings were geared toward addressing stress, depression, anxiety, and distress (Chisea & Serretti, 2009; Khoury et al., 2015). Samples included university students, university faculty and staff, healthcare and medical professionals, teachers, pregnant women, and other community members (Khoury et al., 2015). These benefits in clinical as well as healthy populations have led to adaptations of MBSR for use in education and more specifically with teachers.

**MBSR Trainings with Teachers.** Teachers have also benefitted from MBSR. Of the 34 educator mindfulness training publications reviewed, fifteen were based on MBSR (Benn et al., 2012; Beshai, McAlpine, Weare, & Kuyken, 2016; Crain et al., 2017; Flook et al., 2013; Frank et al., 2015; Gold et al., 2010; Gouda, Luong, Schmidt, & Bauer, 2016; Hue & Lau, 2015; Kerr et al., 2017; Poulin, 2009; Poulin et al., 2008; Reiser &
McCarthy, 2018; Roeser et al., 2013; Taylor et al., 2016). This included one qualitative (Soloway, 2017) and one mixed methods study (Poulin, 2009). All quantitative studies included outcome measures related to mindfulness and stress or well-being. Four of the MBSR based studies involved pre-service teachers (Hue & Lau, 2015; Kerr et al., 2017; Poulin, 2009; Poulin et al., 2008), another included both teachers and parents (Benn et al., 2012), and a third included high school teachers and students (Gouda et al., 2016). Two of the in-service trainings were geared toward high school teachers (Beshai et al., 2016; Frank et al., 2015) and the rest were elementary and/or middle school educators (Crain et al., 2017; Flook et al., 2013; Gold et al., 2010; Roeser et al., 2013; Taylor et al., 2016) or special educators (Benn et al., 2012). Of the reviewed articles, four of them specifically referred to the Stress Management and Relaxation Techniques (SMART) program, developed from the standard MBSR program (Benn et al., 2012; Crain et al., 2017; Roeser et al., 2013; Taylor et al., 2016).

Two studies used the standard MBSR protocol. One training was delivered to eleven elementary school educators and examined using a pre-post design (Gold et al., 2010). The training adhered to the intervention developed by Kabat-Zinn, with examples and discussion connected to elementary educator experiences (Gold et al., 2010). Gouda and colleagues (2016) piloted a standard MBSR program using a longitudinal (3 time points) with a wait-list controlled trial to German high school students (n=29) and teachers (n=29). Many studies modified or extended MBSR in various ways. Poulin (2009) and colleagues (2008), as well as Soloway (2017), reported on studies focused on improving the well-being of pre-service teachers using the *Mindfulness-Based Wellness Education*
(MBWE) program. They based the MBWE on MBSR, with shortened sessions and practice times as well as additional content focused on how to promote health and wellness (Poulin et al., 2008). The participants used a wellness workbook and a CD to support home practice, including a recommended 15 to 20 minutes of daily meditation practice (Poulin, 2009). The eight-week training was part of an elective course offered to pre-service teachers \( n=28 \) with another 16 students in other courses serving as a control group (Poulin et al., 2008). For the two quasi-experimental replication studies (cohort 1 \( n=65 \), cohort 2 \( n=55 \)), the program was delivered during the first 2.5 hours of a weekly four-hour practicum course (Poulin, 2009). The pre-service teachers had their four-week practicum between the fifth and sixth sessions (Poulin, 2009).

Both Poulin (2009) and Soloway (2017) qualitatively examined the influence of the MBWE program with pre-service teachers using grounded theory type analysis. As part of a mixed methods study, Poulin (2009) interviewed nine participants who had completed the MBWE training and identified five inter-related themes: learning mindfulness through the program, struggling with mindfulness practice, embodying the foundational attitudes of mindfulness, sharing knowledge with students, and realizing benefits from the program. Soloway (2017) provided the MBWE “Stress and Burnout” course over three semesters to pre-service teachers. After each semester, Soloway (2017) interviewed seven participants. Soloway (2017) identified five themes from the interviews: reflective practice, teacher identity, social and emotional competence and well-being on practicum, to fail, learning to teach, and engagement in teacher education.

Frank and colleagues (2015) reported on a pilot study of a slightly modified MBSR training. They shortened the MBSR curriculum to eight two-hour sessions, with
no day-long retreat, and participants were asked to do 25 to 30 minutes of meditation practice at home six days a week (Frank et al., 2015). They also modified the last three sessions to include instruction and discussion about incorporating mindfulness practices into their classroom, using calendars similar to the MBSR’s pleasant and unpleasant calendars (Frank et al., 2015).

Flook and colleagues (2013) modified the standard MBSR approach more extensively by adding formal and informal practices that directly focused on skills teachers could apply professionally (Flook et al., 2013). The training sessions included the use of poetry and classroom-based mindfulness and emotion regulation activities, and teachers were directed to do informal practices three times a day (Flook et al., 2013). These informal practices included two types of caring practices involving affirmations and a dropping-in practice involving noticing the body, the feet on the floor, and relaxing the jaw for three breaths (Flook et al., 2013). They designed other informal practices for use throughout the school day, including variations of awareness (i.e., noticing places of ease or tension and breathing into them; noticing thoughts, emotions and pain; awareness of student signals to use informal practices) and distancing, where what is noticed is viewed from a distance as an observer (Flook et al., 2013). This addition of informal practices is unique among the studies based on MBSR. Their modified MBSR also included shorter recorded practice exercises, ranging from 12 to 45 minutes instead of the standard 45 minutes format (Flook et al., 2013).

Hue and Lau (2015) modified MBSR for an experimental training study with 70 pre-service teachers in Hong Kong to address the effects of teacher stress and burnout. Unlike the standard MBSR program, this training spanned six weeks instead of eight
(Hue & Lau, 2015). Beshai and colleagues (2016) used the _b Foundations Course_ developed by the _Mindfulness in Schools Project_ in England, which is based on MBSR and MBCT with modifications based on “Mindfulness: Finding Peace in a Frantic World” (Williams and Penman 2011) adapted for a non-clinical population and designed to offer relevant and accessible mindfulness training to adults in an educational context” and use of the CD that accompanies the book (Beshai et al., 2016). More recently, Kerr and colleagues (2017) used the “Learning to BREATHE: Gaining the Inner Edge” (L2B; Broderick, 2013; Broderick & Frank, 2014), a six-week mindfulness curriculum modeled on the Kabat-Zinn” MBSR approach in a controlled experiment with 23 pre-service teachers (p. 350).

Reiser and McCarthy (2018) created Stress Prevention and Mindfulness (SPAM) groups to provide mindfulness instruction, psychoeducation, and support for 45 teachers in four groups. The groups met for an hour each week for six to eight weeks with “psychoeducation about stress, cognition, and emotion (e.g., current research on stress among teachers; the stress cycle; physical, cognitive, and emotional warning signals; common thinking errors) and instruction and practice with mindfulness skills (e.g., body scan; sitting meditation; 3-minute breathing space)” (Reiser & McCarthy, 2018, p. 11). Select MBSR components were used for the mindfulness instruction (Reiser & McCarthy, 2018). Unlike the other MBSR based trainings, participants were not asked to do formal practice. Instead, they were instructed to practice the skills they had learned between sessions using homework materials.

Lastly, four articles presented results from three studies related to the SMART in Education program (Benn et al., 2012; Crain et al., 2017; Roeser et al., 2013; Taylor et
Authors from these studies reported that between 50% and 70% of the SMART program consisted of MBSR. Taylor and colleagues (2016) described the SMART training as 50% of MBSR, 30% percent mindfulness-emotion skills, and 20% mindfulness-based compassion and forgiveness, providing a table of components (Taylor et al., 2016). In the reported studies, the 36-hour SMART-in-Education training was delivered as nine sessions lasting two to 2.5 hours, and two one-day seven-hour retreats (Benn et al., 2012; Crain et al., 2017; Roeser et al., 2013). The addition of emotion and compassion components appeared to address teacher needs better. The first one-day retreat focused on perceptions of emotions by intention setting, discussions regarding stress and emotions, conducting a body scan, eating silently, stretching mindfully, and being aware of the breath (Benn et al., 2012; Crain et al., 2017).

The first weekly session provided an introduction and the rest consisted of review of previously taught mindfulness activities including responding versus reacting, pleasant, unpleasant, and neutral affect, forgiveness, working with conflict, compassion and kindness, working with anger, working with fear, and beginnings and endings (Benn et al., 2012; Crain et al., 2017). The second one-day retreat, which occurred before the end of the program, was silent and covered much of the content of the first retreat with the addition of moving to music, mindful walking and kindness meditation (Benn et al., 2012; Crain et al., 2017). Workbooks, mindfulness activity instructions and CDs, and included mindfulness and journaling activities designed to support the development of mindfulness and application of content in their teaching work served to support weekly homework (Roeser et al., 2013). Early on researchers tried training that more closely adhered to the therapeutic MBSR protocol. All of them included a formal home-
meditation practice, though often more recent applications had reduced practice times, and some researchers added psychoeducational and informal practice elements.

**MBSR Outcomes with Teachers.** Quantitative findings from MBSR based trainings with teachers consistently included mindfulness, with most providing results related to stress, burnout, and well-being outcomes. Some included other measures on health, self-efficacy and emotion regulation as summarized below. A few studies also reported on teacher attendance and participation.

**Mindfulness.** All studies found increased in mindfulness (Benn et al., 2012; Beshai et al., 2016; Crain et al., 2017; Flook et al., 2013; Frank et al., 2015; Gold et al., 2010; Gouda et al., 2016; Hue & Lau, 2015; Poulin, 2009; Poulin et al., 2008; Reiser & McCarthy, 2018; Roeser et al., 2013) or subcomponents of mindfulness. These included increased self-kindness (Frank et al., 2015), self-compassion (Benn et al., 2012; Beshai et al., 2016; Frank et al., 2015; Kerr et al., 2017; Roeser et al., 2013) and acceptance (Kerr et al., 2017), as well as decreased self-judgment, over-identification (Frank et al., 2015) and rumination (Crain et al., 2017).

**Stress and Burnout.** Researchers reported mixed results relating to stress and burnout. Most studies found decreased stress (Benn et al., 2012; Beshai et al., 2016; Flook et al., 2013; Gold et al., 2010; Roeser et al., 2013). Flook and colleagues (2013) and Reoser and colleagues (2013) also found that the control group had decreased morning cortisol, a biological marker for lower levels of stress, providing more objective evidence of the impact of training on stress. Two studies found nonsignificant changes in perceived stress (Gouda et al., 2016; Hue & Lau, 2015), and another found no changes in vulnerability to stress (Reiser & McCarthy, 2018). Researchers reported mixed findings
for burnout. Two studies (Flook et al., 2013; Roeser et al., 2013) reported decreased burnout symptoms. Frank and colleagues (2015) reported no significant changes in burnout. The evidence appears to point toward benefits of MBSR trainings with teachers to address stress and to prevent burnout.

*Well-being.* Some researchers measured well-being, while others measured related constructs such as depression and mood. Two studies reported significant increased self-reported well-being (Beshai et al., 2016; Hue & Lau, 2015), three studies found significant improved life satisfaction (Poulin, 2009; Poulin et al., 2008), and one study found significant increased mood (Crain et al., 2017). Another study did not find statistically significant improvements in job satisfaction (Reiser & McCarthy, 2018). Studies showed mixed findings for psychological symptoms. Flook and colleagues (2013) reported decreased psychological symptoms. Frank and colleagues (2015) reported no significant changes in psychological symptoms. Three studies found decreased perceived depression (Benn et al., 2012; Gold et al., 2010; Flook et al., 2013) and two studies found no significant changes in depression (Gouda et al., 2016; Hue & Lau, 2015). Two studies reported decreased perceived anxiety at the completion of the training with some improvements at the two- or three-month follow-up (Benn et al., 2012; Roeser et al., 2013) and one study found non-significant changed anxiety (Gouda et al., 2016). Poulin (2009) reported a significant decline in pre-service teachers’ psychological distress in two samples. Similarly, Benn and colleagues (2012) reported significant decreased negative affect after completion of the session and continued improvements at a two-month follow-up (Benn et al., 2012). As with stress and burnout, the evidence points to possible improvements in well-being and related constructs.
Other outcomes. Other measured outcomes were related to perceived health, quality of sleep, self-efficacy, and emotion regulation. Participating pre-service teachers in all three studies found significant improved self-rated health in over the control group (Poulin, 2009; Poulin et al., 2008). Frank and colleagues (2015) reported large effect sizes and significant increased quality of sleep, duration of sleep, and decreased disturbance during sleep, time it took to go to sleep, and daytime sleepiness. Findings indicated that SMART participants were more satisfied with work and home life, and had better sleep in terms of quality, quantity, insomnia, and daytime sleepiness (Crain et al., 2017). All three of the studies reported by Poulin (2009) and colleagues (2008) found significant improvements in self-efficacy, whereas Gouda and colleagues (2016) did not identify significant changes in self-efficacy. Kerr and colleagues (2017) found participants use better emotion regulation strategies and Frank and colleagues (2015) reported significant increased participants’ self-reported emotion regulation, whereas Gouda and colleagues (2016) found nonsignificant changes in emotion regulation. Teachers who participated in the training had decreased inter-personal conflict (Gouda et al., 2016). Other findings included improved classroom organization, lowered affective attentional bias (Flook et al., 2013), and personal growth (Benn et al., 2012). Findings related to cognition include improved clarity (Kerr et al., 2017), attention, and working memory (Roeser et al., 2013).

Additionally, two studies examined interaction effects. Taylor and colleagues (2016) found that teachers with higher dispositional forgiveness and greater efficacy for forgiving students after the training had lower levels of perceived stress at the follow-up, indicating mediation stress. Another mediational analysis indicated that participants with
higher levels mindfulness and lower levels of rumination immediately after the training had a greater decrease in negative mood at the three-month follow-up (Crain et al., 2017). These findings indicate that those who achieved greater mindfulness, dispositional forgiveness, self-efficacy beliefs, and lower levels of rumination had larger long-term benefits from the training for stress and sleep (Crain et al., 2017; Taylor et al., 2016).

**Attendance and Practice.** Some authors reported on participant attendance and practice. Roeser and colleagues (2013) considered attendance and attrition data to examine the feasibility of the SMART-in-Education program. Of the 60 teachers who started the program, six dropped out of the program, and another two attended only 36% of the program. They reported that the 87% of the teachers who completed the program attended eight or more of the 11 sessions, with an average of 10 sessions (Roeser et al., 2013). Hue and Lau (2015) reported high drop-out rates in their MBSR study with pre-service teachers, which they attributed to scheduling issues. Nine of 78 pre-service students available for the study dropped out of the program during the first week. Another 27 attended less than 12.5 of the 15 session hours offered, and seven did not participate in the one-day retreat (Hue & Lau, 2015). The authors argue that this pattern reflected issues with students’ available time, with pre-service teachers prioritizing other tasks over the 2.5-hour weekly MBSR session and the one-day retreat (Hue & Lau, 2015).

Gold et al. (2010) and Hue and Lau (2015) did not report the average amount of home practice assigned or conducted, which would have provided additional information regarding time-to-practice issues, but Frank et al. (2015), Flook et al. (2013), and Roeser et al. (2013) did provide this information. Frank and colleagues (2015) recommended 25
to 30 minutes of meditation a day using provided guided meditation CDs. Based on weekly meditation logs the participants meditated an average of four days a week for about 22.6 minutes (Frank et al., 2015). The United States SMART-in-education participants reported an average of 15 minutes of meditation practice per day for the 60% of teachers who returned their mindfulness journals (Roeser et al., 2013).

Teachers who participated in the modified MBSR program reported an average of 21.7 minutes of daily formal practice and on average practiced between 5 and 6 days a week (Flook et al., 2013). They also reported practicing informally for another 7.5 minutes a day about six days a week, which was slightly more often than formal practice (Flook at al., 2013). Flook and colleagues’ (2013) approach of including informal practice resulted in a notable increase in reported practice time. Poulin (2009) indicated that the pre-service teachers had difficulty completing the 15 to 20 minutes of home practice, especially when they were overwhelmed by practicum, and few continued a formal daily practice after completion of the training. Findings from MBSR trainings with teachers point toward positive affective and well-being outcomes for teachers, though attendance and practice issues were identified.

**Cultivating Awareness and Resilience in Education**

Another mindfulness training for teachers is the Cultivating Awareness and Resilience in Education (CARE) program (Jennings et al., 2017; Jennings et al., 2013; Jennings et al., 2011; Schussler et al., 2016; Sharp & Jennings, 2016). The CARE program extends previous work with social-emotional learning in teachers based on the prosocial classroom model, which “emphasizes the significance of teachers’ social and emotional competence (SEC) and well-being in the development and maintenance of
supportive teacher-student relationships, effective classroom management, and social and emotional (SE) learning program effectiveness (Jennings & Greenberg, 2009)” (Jennings et al., 2013, p. 374).

The CARE program consists of equal parts mindfulness practice and emotion skills instruction and 20% compassion practices (Jennings et al., 2013; Jennings et al., 2011). The 30-hour CARE program is delivered for four full days, generally across four to six weeks, and includes a follow-up session about two months later (Jennings et al., 2013). The mindfulness practices focus on body and breath awareness, mindfully being with thoughts, emotions, in movement, while presenting to a group, and during classroom challenges that elicit strong feelings (Jennings et al., 2013). The emotions skills were delivered by lecture and experiential activities, including role-plays, positive emotion induction, and emotion regulation practices (Jennings et al., 2013). Instruction on emotions included their purpose, expressions thereof, related brain research, their role in teaching and learning, understanding responses to negative and positive emotions, and body awareness of emotions including triggers and how to manage them using mindfulness (Jennings et al., 2013). The compassion practices included reflections on caring and mindful listening techniques (Jennings et al., 2013). In addition to the professional development sessions, participants received phone mentoring or support activities between sessions, were provided a workbook with content, exercises and homework, and a CD of guided activities for home practice (Jennings et al., 2013). The amount of expected home practice was unclear.

Jennings and colleagues reported on the feasibility and efficacy of the CARE for teachers’ professional development program in five articles (Jennings et al., 2017;
Jennings et al., 2013; Jennings et al., 2011; Schussler et al., 2016; Sharp & Jennings, 2006). The results of four experimental studies of the CARE program found increases in aspects of self-reported mindfulness and teacher well-being including adaptive emotion regulation and decreased psychological distress and time urgency (Jennings et al., 2017; Jennings et al., 2013; Jennings et al., 2011). One study reported increased teachers’ efficacy and personal accomplishment that has been associated with decreased burnout (Jennings et al., 2013; Montgomery & Rupp, 2005).

Another study used observational measures of teacher classroom behaviors and found increased teacher emotional support toward students (Jennings et al., 2017). A qualitative examination of the CARE program found that teachers engaged in more self-compassion and self-care, though they also reported tension between colleagues because they were taking time for themselves and, unlike these peers, did not spend extensive personal time in school preparation (Schussler et al., 2016). Researchers also found that teachers became more aware of their emotionality and in turn became less reactive (and more responsive), likely because they were able to pause and see the situation from a new perspective, something echoing Shapiro and colleagues’ reperceiving as previously described (Shapiro et al., 2006; Sharp & Jennings, 2006; Schussler et al., 2016).

Other Trainings with Teachers

Fourteen additional articles were identified describing other types of mindfulness applications with teachers. Nine were designed to enhance well-being and address stress and burnout, and one to improve teacher efficacy (Ancona & Mendelson, 2014; Anderson et al., 1999; Burrows, 2015; Franco et al., 2010; Harris et al., 2016; Loew et al. 2009; Napoli, 2004; Schnaider-Levi et al., 2017; Singh et al., 2013; Solloway, 1999). Ten
involved solely or principally meditation instruction and practice as the training 
(Anderson et al., 1999; Franco et al., 2010; Loew et al., 2009; Miller & Nozawa, 2002; 
Napoli, 2004; Schnaider-Levi et al., 2017; Singh et al., 2013; Solloway, 1999; 
Winzelberg & Luskin, 1999), two were yoga-based (Ancona & Mendelson, 2014; Harris 
et al., 2016), one modified another therapeutic mindfulness approach called acceptance 
and commitment therapy (ACT; Emery & Vandenberg, 2010), one used an informal, 
secular mindfulness activity called “innersensing” (Burrows, 2015), and another 
attempted to introduce mindfulness within a brain theory training (Ergas et al., 2018). 
Four were qualitative reports (Burrows, 2015; Miller & Nozawa, 2002; Napoli, 2004; 
Solloway, 1999) and one included mixed-methods (Singh et al., 2013). The following 
paragraphs are an overview of the trainings, followed by a section summarizing the 
qualitative findings.

Among the primarily meditation-based trainings, two studies included informal 
practice or instruction with the teacher and students in the classroom (Napoli, 2004; 
Solloway, 1999). These trainings included weekly individual or group training sessions 
lasting between 20 minutes and 3.5 hours, and two of these included additional 
individualized instruction (Anderson et al., 1999; Franco et al., 2010; Loew et al., 2009; 
Napoli, 2004; Schnaider-Levi et al., 2017; Singh et al., 2013; Solloway, 1999). Those 
 studies that reported it recommended a home meditation practice ranging from 20 to 40 
minutes five days a week (Anderson et al., 1999; Franco et al., 2010; Singh et al., 2013; 
Solloway, 1999). Consistent with the previously reported findings, the meditation-based 
trainings were associated with decreased symptoms of distress, including the burnout 
symptoms of emotional exhaustion and depersonalization and burnout predicting
symptoms related to professional engagement, resilience, and emotions (Anderson et al., 1999; Franco et al., 2010; Loew et al., 2009; Montgomery & Rupp, 2005; Singh et al., 2013).

Singh and colleagues (2013) were the only ones to examine the effects of teacher mindfulness instruction on students and reported that preschoolers’ maladaptive behaviors and negative interactions decreased, and compliance behaviors and neutral interactions increased as a result of meditation training. Two studies found continued benefits between two and four months after completion of the training (Anderson et al., 1999; Franco et al., 2010). Quantitative data from one study indicated that teachers were challenged in finding the time to complete the recommended daily meditation practice even though they reported benefits from the practice (Anderson et al., 1999).

The two yoga-based trainings were designed to be less time intensive in order to increase teacher participation and used both yogic breathing and movement activities (Ancona & Mendelson, 2014; Harris et al., 2016). One training consisted of two weekly 45-minute sessions offered for three weeks (Ancona & Mendelson, 2014). The other training, the Community Approach to Learning Mindfully (CALM), recommended participants attend at least two of four offered 20-minute sessions per week for 16 weeks (Harris et al., 2016). Ancona and colleagues (2014) reported that 76% of teachers completed 4 of 6 or 67% of sessions and Harris and colleagues (2016) reported that 56% of teachers attended once per week and 32% attended 2 times per week (Ancona & Mendelson, 2014; Harris et al., 2016). Reported benefits included improvements in mindfulness, perceived stress, some burnout symptoms, classroom management and improved physical health including improvements in somatic distress, blood pressure and
cortisol (Ancona & Mendelson, 2014; Harris et al., 2016). Additionally, the CALM training included an informal practice component to encourage informal practice (Harris et al., 2016). Harris and colleagues (2016) provided participants cards that described the week’s strategies and how they might use them during the school day.

Burrows (2015) used a novel approach to conduct a mindfulness course with teachers. The course involved using innersensing activities to resolve a “disorienting dilemma at work involving a student, parent or colleague” (Burrows, 2015, p. 4). Burrows (2015) described innersensing as an informal practice that had the teacher notice the bodily sensations while being conscious of what was happening in the present moment and thereby “drawing back … attention from its unconscious enmeshment with thoughts, storylines, emotions, and situations” (p. 4). This approach was used in part because it is not as time intensive as meditation (Burrows, 2015). Additionally, the six-week course involved weekly teacher journaling and subsequent instructor feedback, brief readings on the dialectical and unitary nature of mindfulness, and instruction on how to do innersensing activities (Burrows, 2015).

More recently, Ergas and colleagues (2018) reported on a mixed methods study of a five-week course in Israel with 30 middle school teachers that was “designed to invite teachers into initial experiences with mindfulness without formally engaging in mindfulness practice but rather based on studying education-relevant brain theory through a contemplative pedagogical approach” (Ergas et al., 2018, p. 1). Additionally, they did not examine teacher stress or well-being. Among other results, they found evidence that teachers moved from a fixed toward a growth mindset, from an external to an internal locus of control, and showed increased perspective taking over time (Ergas et
As previously mentioned, this review includes four publications about mindfulness trainings with pre-service teachers reporting on six mindfulness training studies (Hue & Lau, 2015; Kerr et al., 2017; Poulin et al., 2008; Poulin, 2009; Winzelberg & Luskin, 1999). This review has already covered the findings for four of these reports in the MBSR section (Hue & Lau, 2015; Kerr et al., 2017; Poulin, 2009; Poulin et al., 2008). To address pre-service teachers’ stress, anxiety and self-efficacy, Winzelberg and Luskin’s (1999) training consisted of four weekly 45-minute training sessions that included instruction on the stress and relaxation response, how to do RISE meditation, which involves focusing on sound, and three informal practices that reflect portions of the RISE meditation technique, specifically mantra, slowing down, and one-pointed attention (Winzelberg & Luskin, 1999). Participants reported they practiced meditation three times a week during the delivery of the training. At the four-week follow-up, half of the participants were not practicing the meditation techniques but were still using the informal practices (Winzelberg & Luskin, 1999).

The authors of some teacher mindfulness trainings also raised issues of practice time. Singh and colleagues (2013) acknowledged that one problem with mindfulness practices is that it may be hard for participants to find the time to do formal practice. Roeser and colleagues (2013) reported receiving formal practice logs for ¾ of participants and that these participants engaged in formal practice an average of 15 minutes a day. Kemeny and colleagues (2012) found that more days and minutes of formal practice did not predict beneficial outcomes, indicating aspects beyond time spent meditating were associated with beneficial outcomes. Harris and colleagues (2016) found
that despite minimal formal practice — half of the participants attended only one 20-
minute yoga and meditation each week — participants still reported benefits (Harris et al., 2016). What was notable about this training was that it included informal practice in
the form of cards that provided ways to incorporate strategies into the school day (Harris et al., 2016).

Similarly, in the study described by Flook and colleagues (2013), informal
practices were done more reliably (89% of days) by participants than formal practices
(85%). This might indicate that informal practice is slightly easier for teachers to
implement in their busy lives than a formal home practice (Flook et al., 2013). These
findings indicate that informal practice may be a feasible and less demanding way of
developing mindfulness in teachers since doing so does not add the burden of finding the
time and self-discipline of a formal practice.

**Thematic Review of Qualitative Literature**

The twelve studies that included qualitative analysis of mindfulness trainings with
teachers reported on themes of varied form. Most of the studies used data from
participant interviews. One study analyzed training transcripts (Ergas et al., 2018) and
another analyzed journal entries and e-mail exchanges throughout the training (Burrows,
2015). Themes included descriptions of aspects of mindfulness, though with different
theme headings, and impacts of the training, especially for the interview studies. To get a
better overview of these findings, I did a thematic review of the articles. First, I made
notes of the themes identified by the authors, including additional information based on
their description of each theme. Then I coded common ideas I identified among and
within the authors’ themes. This resulted in the nine inter-related sub-themes, which I
grouped into three themes. Ergas and colleagues’ (2018) analysis of training discourse resulted in distinct findings, which I will present first to contrast these findings with those from the interview studies.

The study reported on by Ergas and colleagues (2018) was distinct in two ways. First, the purpose of the 5-week training was not to develop mindfulness skills, but rather to provide an initial experience of mindfulness to encourage further exploration by linking mindfulness to brain theory (Ergas et al., 2018). Secondly, the mixed-methods approach analyzed collaborative concept maps and training session transcripts to see if the training might “serve as a gateway to mindfulness experiences,” how well this approach was accepted, and how participants’ conceptions of the brain and how they talked during sessions changed as a result of participation (Ergas et al., 2018, p. 2). Ergas and colleagues’ (2018) qualitative findings from discourse analysis identified changes in participants’ awareness of their body and how their attention functions. This notion echoes the concept of reperceiving described by Shapiro and colleagues (2006). The methods used allowed the researchers to examine how participant awareness and mindfulness emerged within the training and how their way of thinking, or perceiving thinking, changed (Ergas et al., 2018). The methods of the other studies reviewed did not allow for such an examination.

The thematic review of the articles resulted in three overarching themes. The first theme related to aspects of mindfulness and three inter-related sub-themes, the second theme related to secondary impacts, and the third theme included aspects of mindfulness practice. First, I will examine the sub-themes of aspects of mindfulness: slowing down, objective seeing, and responding. Every study reported some version of slowing down
and responding, which was contrasted with reacting (Burrows, 2015; Miller & Nozwana, 2002; Napoli, 2004; Poulin, 2009; Reiser & McCarthy, 2018; Schnaider-Levi et al., 2017; Schussler et al., 2016; Singh et al., 2013; Solloway, 1999; Soloway, 2017). Descriptions included mention of using mindfulness in various ways to slow down the experience of the moment including attending to the breath (Napoli, 2004; Reiser & McCarthy, 2018), feeling sensations and emotions (Burrows, 2015; Sharp & Jennings, 2006), pausing (Reiser & McCarthy, 2018; Sharp & Jennings, 2016), and being intentional (Napoli, 2004; Solloway, 1999) so as to respond instead of react.

Most studies mentioned objective seeing (Burrows, 2015; Miller & Nozwana, 2002; Poulin, 2009; Reiser & McCarthy, 2018; Schnaider-Levi et al., 2017; Schussler et al., 2016; Solloway, 1999; Soloway, 2017). The authors characterized it as seeing the whole of a situation and experiencing the moment as it really is, with a detached, distanced perspective (Burrows, 2015; Poulin, 2009; Reiser & McCarthy, 2018; Sharp & Jennings, 2006; Solloway, 1999). The teachers reported a sense of space and time sufficient to effectively respond to students rather than automatically reacting in a habitual way (Schneider-Levi et al., 2017; Singh et al., 2013; Solloway, 1999). Relatedly, they reported feeling more centered and focused (Schneider-Levi et al., 2017; Singh et al., 2013; Solloway, 1999). The authors also associated objective seeing with noticing the experience, both by enjoying the enjoyable aspects and gaining awareness of the less pleasant aspects of it (Burrows, 2015; Ergas et al., 2018; Napoli, 2004; Poulin, 2009; Reiser & McCarthy, 2018; Schnaider-Levi et al., 2017; Schussler et al., 2016; Sharp & Jennings, 2006; Solloway, 1999; Soloway, 2017).

Teachers reported increased clarity about the facts and dynamics of the present
situation (Schneider-Levi et al., 2017; Singh et al., 2013; Solloway, 1999). Responding took varied forms described by a focus on acting intentionally, thoughtfully, effectively or wisely by identifying and avoiding problematic behaviors, innovating and adapting, and acting in line with one’s values (Burrows, 2015; Napoli, 2004; Poulin, 2009; Reiser & McCarthy, 2018; Schussler et al, 2016; Singh et al., 2013; Solloway, 1999, Soloway, 2017). Attending to the present moment occurred for participants as a slowing down, which allowed time to consider aspects of the situation more objectively, which in turn allowed the actor to respond instead of reacting.

Secondary impacts of mindfulness that were salient in the articles’ presented themes were connection, tolerating difficult experiences, and improved relationships. Connection was seen as an aspect of mindfulness connection, described the experience of being connected to a greater whole (Burrows, 2015; Solloway, 1999), seeing things holistically (Schnaider-Levi et al., 2017), and as being connected to others (Reiser & McCarthy, 2018; Schussler et al., 2016; Solloway, 1999). Teachers also reported that they felt more connected and were better able to accept the reality of the situation, thus they were less likely to avoid children as a result of uncomfortable emotions and could accept and be present with any child’s behavior (Schneider-Levi et al., 2017; Singh et al., 2013; Solloway, 1999). This reflects the theme of tolerating difficult experiences, which included dealing with stress and anxiety, accepting negative emotions, and tolerating difficult interactions with others (Poulin, 2009; Reiser & McCarthy, 2018; Schnaider-Levi et al., 2017; Schussler et al., 2016; Sharp & Jennings 2016; Singh et al., 2013; Solloway, 1999). Participants reported having improved relationships as a result of being more responsive and less reactive and acting in more effective and innovative ways
(Miller & Nozwana, 2002; Poulin, 2009; Reiser & McCarthy, 2018; Schnaider-Levi et al., 2017; Schussler et al., 2016; Sharp & Jennings, 2016; Singh et al., 2013; Solloway, 1999; Soloway, 2017).

Lastly, like some of the quantitative studies, seven of these studies included participants’ challenges with practice. Most common was the finding that participants had difficulty finding time and self-discipline to meditate or do home practice (Miller & Nozwana, 2002; Poulin, 2009; Reiser & McCarthy, 2018; Schussler et al., 2016; Singh et al., 2013; Solloway, 1999). Some mentioned that participants found the nature of practice difficult as well (Singh et al., 2013; Solloway, 1999; Soloway, 2017). In light of the promising findings from mindfulness trainings summarized in this review, the challenges teachers had with practice and how to best address them must be considered in future research. One way to do this is to explore if the use of informal mindfulness practices results in the types of benefits associated with mindfulness trainings with a formal training emphasis.

**Dialectical Behavior Therapy**

DBT represents another mindfulness-based intervention that has been associated with beneficial outcomes related to stress, anxiety, and depression (Gold et al., 2010). It was initially designed to treat individuals with Borderline Personality Disorder (BPD; Linehan, 2015). DBT has also been used to address a variety of other mental health issues including suicidal behaviors, mood disorders, and addiction (Linehan, 2015). The initial focus of DBT on more severe psychological conditions may be why DBT applications with healthy individuals have been less prominent than for MBSR. To my knowledge, this study is the first investigation of a DBT-based training with teachers.
DBT includes three therapeutic components and one skills component. Each component was designed to serve a different purpose. For this review, most of the focus will be on the skills component, since it is most applicable to this study. The therapeutic components, however, are helpful in considering nontherapeutic applications of DBT. The therapeutic components are 1) individual therapy, 2) phone-based skills coaching between DBT skills training sessions, and 3) therapist consultation to support the therapist in DBT delivery (Linehan, 2015).

In contrast to the therapeutic portions of DBT, the DBT skills component is strictly pedagogical. The DBT skills were designed to balance accepting others and oneself and changing our experience and ourselves. The skills are divided into modules and include two acceptance modules, mindfulness and distress tolerance, and two change modules, interpersonal effectiveness and emotion regulation (Linehan, 2015).

Skills training sessions are structured as a class, with sessions focused on learning the skills rather than on processing, as therapeutic support groups tend to be (Linehan, 2015). Reflecting this, the role of the therapist and the skills trainer are distinct. The skills trainer does not require therapeutic expertise to deliver the skills component of DBT (Linehan, 2015). The DBT training manual contains a variety of materials for trainers to use. In addition to a detailed overview of each module, the manual includes:

- participant handouts summarizing each skill,
- skills worksheets for participant homework practice,
- a weekly diary card for tracking participant emotions and skills use,
- detailed teaching notes for the skills trainer.

The manual provides guidance for teaching the skills and an explanation of how the core
principles of DBT apply to each module (Linehan, 2015; see DBT Theory of Change below). Each module includes discrete skills that can be selected based on the needs of the individual or group receiving training so that the trainer, with guidance from the DBT manual, can be flexible in choosing which modules and skills to present (Linehan, 2015).

When using the full DBT approach, the therapist conducts a pre-treatment session before commencing skills training. This session helps the therapist develop a relationship with the client while assessing and deciding which DBT skills are most appropriate for a given client or group. The pre-treatment session also provides the therapist an opportunity to orient the client to the format and expectations of skills training and to establish a commitment to DBT therapy (Linehan, 2015).

Typically, the DBT skills training is an ongoing series of weekly skills sessions (Linehan, 2015). Each session starts with an opening ritual, followed by a review of the previous week’s homework and skills use. The trainer covers new skills and concludes the session with a closing ritual (Linehan, 2015). The last session of each module may be a review of that module’s skills instead of presentation of new skills. When individuals exit the group, a ritual to bring closure and allow for goodbyes is added (Linehan, 2015).

Skills sessions for those with more extreme needs tend to require more time. A group with eight members would require about 2.5 hours, whereas skills sessions for those participating in non-clinical DBT skills-only programs tend to take 1.5 to 2 hours (Linehan, 2015). Trainers can also provide individual skills sessions that tend to run between 45 and 60 minutes for complete coverage of the material (Linehan, 2015). The standard therapeutic DBT application consists of 24 sessions that rotate through all four modules, with two weeks of orientation and skills from mindfulness and between 5
to 7 weeks each of the skills from the distress tolerance, emotion regulation, and interpersonal effectiveness modules (Linehan, 2015). Others have also developed shorter and longer schedules for various purposes (Linehan, 2015).

**DBT Theory of Change.** DBT is based on a dialectical worldview and uses Biosocial Theory as its theoretical basis (Linehan, 2015). Biosocial Theory includes a distinct conception of emotions, emotion regulation, and emotion dysregulation that takes into account individual biological vulnerabilities and environmental influences including many of those associated with the decreased risk of adverse responses to meditation previously described (Linehan, 2015; Lindahl et al., 2017). Biosocial Theory focuses on the interplay of individual strengths and vulnerabilities with invalidating and validating environments as it relates to individuals’ emotion regulation tendencies (Linehan, 2015). The DBT skills are designed to address the consequences of intrapersonal, interpersonal, emotional and behavioral dysregulation that results from this interplay (Linehan, 215).

The dialectical perspective that DBT is based on assumes the “fundamental interrelatedness or wholeness of reality” (Linehan, 2015, p. 4). This wholeness is composed of unifying yet opposing forces, and the idea that this results in a reality that is continuously changing. This concept is associated with various paradigms of mindfulness, reflecting the Noble Truth of the impermanence and changeability of reality, and underlies all of DBT (Capra, 1983; Linehan, 2015).

In DBT, mindfulness skills are essential and provide a foundation for all other DBT skills. Mindfulness skills are designed to develop the individual’s “ability to consciously experience and observe” him or herself as well as “surrounding events with curiosity and without judgment” (Linehan, 2015, p. 11). The individual learns to be part
of the present moment experience and thus is able to clearly and factually describe that experience.

The mindfulness skills cover the attentional and attitudinal portions of mindfulness previously described. The attentional aspects of mindfulness focus on skills to address distortion of perceptions of reality relating to a situation, oneself, or others (Linehan, 2015). This compares to the portions of the Eightfold path revolving around right seeing and right knowing (Capra, 1983). The attitudinal aspects of mindfulness focus on skills to uncouple attachment and develop acceptance through non-judgment that are represented by the right action of the Eightfold path (Capra, 1983; Linehan, 2015). Mindfulness also addresses intrapersonal and interpersonal dysregulation generally, which can include a sense of disconnection with the self (dissociation) or others (depersonalization), and feelings of worthlessness and inability (self-efficacy/personal accomplishment), which have been associated with burnout and emotional exhaustion (Linehan, 2015; Tuxford & Bradley, 2015; Montgomery & Rupp, 2005). Unlike most of the previously described trainings, DBT skills do not rely on extended meditation practices, but instead use short mindfulness practices that blur the line between formal and informal mindfulness practices. In this way, DBT appears to focus on the first three Noble Truths, leaving the fourth Nobel Truth related to enlightenment in the hands of more traditional practitioners and decreasing some of the potential risks of meditation (Lindahl et al., 2017).

The DBT interpersonal effectiveness skills provide a framework to address interpersonal dysregulation and to promote validation of self and others (Linehan, 2015). Interpersonal effectiveness, like the emotion regulation and distress tolerance skills,
develop the individual’s ability to recognize, describe, label, tolerate, and respond effectively to the range of emotions that are part of the human experience addressing issues of emotional and behavioral dysregulation (Linehan, 2015). They primarily focus on right action (Capra, 1983). Emotion regulation skills include not only recognizing emotions, but also developing an understanding of the illuminating information emotions provide about the experience and considering emotions’ action potentials to make wise decisions (Linehan, 2015).

DBT acknowledges that as part of the human experience individuals will be in situations where they experience intense and sometimes overwhelming emotions (Linehan, 2015). This establishes a context that may reduce the risk of surprise when a participant experiences uncomfortable sensations (Lindahl et al., 2017). The distress tolerance skills also provide both bottom-up (physiological) and top-down (cognitive) strategies for tolerating uncomfortable experiences that may promote grounding and decrease adverse experiences (Linehan, 2015; Lindahl et al., 2017). Notable is that emotion dysregulation is not only associated with increased emotionality but also with excessive emotional demands and suppression of emotions. Researchers have linked both emotional demands and suppression of emotions with emotional exhaustion and burnout (Linehan, 2015; Tuxford & Bradley, 2015; Montgomery & Rupp, 2005). Perepletchikova and Goodman (2014) summarize the principles of DBT eloquently: “DBT provides a synthesis of three paradigms: behaviorism to foster change, mindfulness to foster awareness and acceptance, and dialectics to balance acceptance and change” (p. 298).

**DBT Outcomes.** DBT interventions were originally designed for and effective in treating individuals with BPD (Rizvi et al., 2013; Linehan, 2015). However, DBT
interventions have been used for other disorders and in non-clinical settings using both therapeutic, and skills only approaches (Rizvi et al., 2013; Linehan, 2015). People who have benefited from DBT interventions can be categorized into clinically diagnosed individuals and at-risk individuals (Rizvi et al., 2013; Linehan, 2015). This literature reflects the progression from applications of DBT with extreme conditions such as BPD and treatment-resistant depression, to treating individuals displaying risky behavior, such as incarcerated individuals, perpetrators and victims of domestic violence, and adolescents engaging in anti-social behavior (Rizvi et al., 2013; Linehan, 2015). In conjunction with these applications, the potential of DBT skills to help family members and caretakers cope with the demands of interacting with these and other difficult-to-care-for individuals has been identified and realized (Drossel et al., 2011; Jenaabadi, 2017; Linehan, 2015; Rizvi et al., 2013;). A brief review of this literature follows.

Clinical Applications. Both therapeutic and skills only DBT interventions have been found to benefit individuals with BPD, eating disorders, treatment-resistant depression, ADHD, irritable bowel syndrome, and addiction (Haghayegh, Neshatdoost, Adibi, & Shafii, 2017; Rizvi et al., 2013; Linehan, 2015). DBT was one of the first effective treatments for BPD as well as suicidal and self-injurious behaviors based on randomized controlled trials (Rizvi et al., 2013; Linehan, 2015). Participants had decreased hospitalizations, depression, hopelessness, suicide ideation, and substance use (Rizvi et al., 2013; Linehan, 2015). One meta-analysis reported effect sizes for risk of suicidality and suicidal behavior ($g = -.62$) and depression ($g = -.90$), however the pooled effect size for depression was not statistically significant because it was based on three studies with the results of one study influencing the size of the effect (Panos, Jackson,
Hasan, & Panos, 2013). Individuals diagnosed with attention deficit hyperactivity disorder (ADHD), depression, and PTSD who participated in DBT interventions were found to have decreased symptoms and individuals with eating disorders had improved eating behavior, fewer eating concerns, and better body image (Rizvi et al., 2013; Linehan, 2015). More recently a DBT skills intervention was piloted with individuals with bipolar disorder finding statistically significant improvements in mindfulness, emotion regulation, emotional reactivity, distress tolerance, and psychological well-being (Eisner et al., 2017).

Applications with Adolescents. The success of DBT with adult populations led to the use of DBT with at risk adolescents with suicidal, self-injurious, impulsive, and mood issues (Rizvi et al., 2013). Articles about DBT interventions with adolescents have reported decreased aggression, anxiety, behavioral problems, depression, hyperactivity, risky behavior, self-injury, social isolation and somatic distress, though there was a lack of controlled trials to confirm these findings (Ricard, Lerma, & Heard, 2013; Rizvi et al., 2013; Katz, Fotti, & Postl, 2009; Zapolski & Smith, 2017). Preliminary studies of novel DBT has also been used with other populations, including to address school refusal in adolescents and with pre-adolescents to address disruptive mood dysregulation disorder and trauma (Chu, Rizvi, Zendegui, & Bonavitacola, 2015; Lang, Edwards, Mittler, & Bonavitacola, 2018). DBT trainings with adolescents and children tend to be shorter than the standard six-month to one-year adult training, with reported programs ranging from 4 to 16 weeks with one or two sessions a week as short as 45 minutes (Rathus & Miller, 2000; Ricard et al., 2013; Katz et al., 2009; Zapolski & Smith, 2017).

When adapting DBT, Miller and colleagues identified three dialectic dilemmas
that adolescents and their caretakers face: excessive leniency versus authoritarian control, normalizing pathological behaviors versus pathologizing normative behaviors, and forcing autonomy versus fostering dependence (Katz et al., 2009; Rathus, Campbell, Miller & Smith, 2015; Rathus & Miller, 2000; Rathus & Miller, 2015). In response, Rathus and colleagues (2015) developed an additional module called Walking the Middle Path to address these dilemmas more effectively (Katz et al., 2009; Rathus & Miller, 2015). The standard DBT skills for adolescents (DBT-A) runs 16 weeks with parent skills training, includes parents in therapy as needed, covers less of the original skills, and uses more age-appropriate language on handouts and worksheets (Katz et al., 2009; Rathus et al., 2015; Rathus & Miller, 2015).

The DBT skills training for emotional problem solving for adolescents (STEPS-A) was developed by Mazza, Dexter-Mazza, Miller, Rathus, and Murphey (2016) as a whole school approach to mental health. Teachers deliver the DBT STEPS-A curriculum to typical secondary students. DBT STEPS-A includes a thirty-lesson curriculum with each lesson designed for a regular 50-minute secondary school class (Mazza et al., 2016). The curriculum begins with an orientation lesson followed by a lesson on dialectics (Mazza et al., 2016). Three lessons cover the core mindfulness skills and seven lessons cover distress tolerance. There are two more lessons of mindfulness followed by eight lessons covering emotion regulation (Mazza et al., 2016). Two more mindfulness lessons precede the six interpersonal effectiveness lessons (Mazza et al., 2016). The curriculum includes lesson plans, handouts, and homework sheets much like the DBT curriculum, with the addition of tests for the distress tolerance, emotion regulation and interpersonal effectiveness modules (Mazza et al., 2016). Most recently, a pilot study with 15- to 16-
year-olds at two schools in Ireland found that students experienced less depression, anxiety, social stress and internalizing problems than their control group peers, with large effect sizes (Flynn, Joyce, Weihrauch, & Corcoran, 2018). Showing promise for such applications with typical school populations.

*Applications with Children.* Four publications referred to the implementation of DBT with children. Two of these report on studies that implemented a DBT program adapted for children (DBT-C) to see if DBT could be modified for use with younger students (Perepletchikova et al., 2011; Perepletchikova et al., 2017). Another publication contrasted DBT-C to mentalization-based child therapy, and another suggested the use of one of the DBT skills in the classroom to help students better regulate their emotions (Koch, 2010; Perepletchikova & Goodman, 2014).

Perepletchikova and colleagues (2011) reported on a pilot study was to see if healthy and typically developing children would be able to learn and use the DBT-C content and if there were any benefits for these children in participating in the training. Perepletchikova and colleagues (2011) delivered the DBT-C content in 12 sessions across six weeks. They included homework, added role plays, and used review and presentation of skills much like other DBT applications (Perepletchikova et al., 2011). Eleven second through sixth graders participated in a group administration. Findings indicated that the DBT was applicable with children in the form of DBT-C and that children might have similar benefits to other populations who have participated in DBT trainings, specifically increased adaptive coping and decreased depression, suicide ideation and harmful internalizing behaviors (Perepletchikova et al., 2011).

Perepletchikova and colleagues (2017) conducted a second, randomized clinical
trial of DBT-C. The sample consisted of 43 children, ages 7 to 12, who were diagnosed with disruptive mood dysregulation disorder (Perepletchikova et al., 2017). The DBT-C training spanned 32 weeks (Perepletchikova et al., 2017). Weekly family sessions lasted 90 minutes and included child therapy, parent training, and skills training with the parents and child (Perepletchikova et al., 2017). The researchers did not provide additional details of how this DBT-C training was different from the pilot study. In comparison to children who received treatment as usual, the researchers found greater participation, satisfaction, and a decrease of symptoms with effects three months after treatment (Perepletchikova et al., 2017).

In a description of a suggested strategy for children who tend to have distracting or destructive emotional outbursts, Koch (2010) identified that negative or invalidating responses to students’ behavior and perceptions often perpetuates problem behaviors, while acknowledging the challenges such behaviors pose for teachers. Koch (2010) suggested teachers use DBT distress tolerance skills as tools for themselves and their students to address or prevent problematic behaviors. After briefly describing how teachers may inadvertently create an invalidating environment when trying to support children with self-regulation, Koch (2010) presented the ACCEPTS tool-kit adapted from the distract with wise mind ACCEPTS skill included in the distress tolerance module of DBT (Linehan, 2015). The distract with wise mind ACCEPTS skills are designed to create distance between the emotion producing source to down-regulate intense emotion (Linehan, 2015). It includes seven strategies for distracting represented by each of the letters: “Activities (discordant with negative emotion), Contributing, Comparison, Emotions (opposite to the current negative emotion), Pushing away from the situation,
Thoughts, and Sensations” (Koch, 2010; Linehan, 2015, p.417). Koch (2010) suggested the teacher and student first work together to develop an individualized toolkit that encompasses each strategy, with the teacher then coaching the student in using the toolkit and finally evaluating its effectiveness (Koch, 2010).

Applications with Adults. Adults not from clinical populations but may be at risk because of their association with individuals who tend to have emotion regulation difficulties have also participated in DBT skills only trainings with promising results. Family members used DBT trainings themselves to either help their relative, to “help themselves cope with the stress associated with” the problematic family member, or both (Miller & Skerven, 2017, p. 81). DBT skills training can help family members “improve their own well-being by learning how to set limits, validate their own experiences, and prioritize their own health (Penny, 2008; Penny & Woodward, 2005)” while also validating the difficult family member (Miller & Skerven, 2017, p. 81). In general terms family members of individuals with BPD or suicidal behaviors benefited, experiencing decreased grief, sense of burden, and anxiety and increased general well-being (Linehan, 2015).

Similarly, the Family Skills DBT training (DBT-FST) was designed to help family members understand the behavior of their loved one and respond in a nonjudgmental way, develop a more validating environment, and address the gaps in the family members’ emotion regulation and interpersonal skills (Hoffman, Fruzzetti, & Swenson, 1999; Miller & Skerven, 2017). Although the program can be presented to individual families, multi-family groups lead by two trainers are more efficient since they can accommodate 30 family members and can be conducted in 90-minute sessions.
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(Hoffman et al., 1999). Miller and Skerven (2017) presented five of the DBT modules (mindfulness, interpersonal effectiveness, emotion regulation, distress tolerance, validation) for six months. The structure of the training sessions was slightly different from the standard DBT approach. The first half of each session was lecture one week and homework review skill building the other week, and the second half of each session consisted of consultation and skills application (Hoffman et al., 1999). Two orientation sessions at the beginning of the program were also included (Hoffman et al., 1999).

Family Connections (FC) is another training that infuses DBT skills to support family members of suicide attempters (Hoffman et al., 2005; Rajalin, Wickholm-Pethrus, Hursi, & Jokinen, 2009). The manualized FC program is delivered for 12 weeks and includes six modules covering psychoeducation, mindfulness, acceptance, emotion, validation, and problem management (Hoffman et al., 2005; Rajalin et al., 2009). DBT informed skills included “emotion self-management, mindfulness, letting go of judgments, decreasing vulnerability to negative emotions,” acceptance, validation, and problem-solving (Hoffman et al., 2005, p. 219). Two one-sample studies indicated that FC might decrease family members’ sense of burden (Hoffman et al., 2005; Rajalin et al., 2009). Rajalin and colleagues (2009) found significant reductions in anxiety, emotional discomfort, perceived criticism, critical comments, and emotional over-involvement in participants. Hoffman and colleagues (2005) found decreased depression whereas Rajalin and colleagues (2009) did not.

Another program to support family members using DBT is the Family Skills (FS) program (Miller & Skerven, 2017). Like DBT FC, DBT FS is a multifamily group program (Miller & Skerven, 2017). The program consists of an 8-hour workshop and
eight biweekly 2-hour sessions (Miller & Skerven, 2017). The initial 8-hour workshop consisted mainly of psychoeducation, much like the FC program, including general information about the biosocial theory of DBT, the components of DBT, and the core mindfulness module skills (Miller & Skerven, 2017). Two sessions each are devoted to validation, interpersonal effectiveness, emotion regulation and the distress tolerance skill of radical acceptance (Miller & Skerven, 2017; Linehan, 2015). Like other DBT skills approaches, the first half of each session is used to review homework and the second to teach new skills (Miller & Skerven, 2017). A pre-post analysis of 70 participants of the FS program pointed to decreased participants’ depression, hopelessness, interpersonal sensitivity, but no reduced sense of burden (Miller & Skerven, 2017).

Most recently Wilks and colleagues (2017) delivered the standard 24-week, 6-month long DBT skills training to 20 family members of individuals with behavioral difficulties including anxiety, depression, BPD, and PTSD. Participants were self-referred and their family member did not participate in a simultaneous DBT treatment as with most of the previously described family DBT trainings (Wilks et al., 2017). The one-sample study found indications of reduced emotion dysregulation, caregiver strain, interpersonal problems, and improved attitude toward family members with no changes in reported depression or anxiety (Wilks et al., 2017).

Lastly, DBT skills have been used to support caretakers of individuals challenging to care for, such as individuals with dementia and children with mental disorders (Drossel et al., 2011; Jenaabadi, 2017). For caregivers of individuals with dementia, the typical DBT training was modified to include examples related to everyday caregiver experiences, to address the unique communication needs of individuals with dementia,
with individualized diary cards, and with a condensed delivery so the four modules could be covered in 8 weeks (Drossel et al., 2011). Drossel and colleagues (2011) also provided therapeutic services to caregivers. The pilot study of 16 caregivers pointed toward improved coping, depression, and therapeutic and support service utilization (Drossel et al., 2011).

A quasi-experimental intervention study with 27 mothers of children with depression or anxiety compared the effectiveness of an emotion regulation training based on Gross’ process model of emotion regulation and DBT to a control group (Jacobs & Gross, 2014; Jenaabadi, 2017). Each training consisted of 8 two-hour sessions. The findings indicated that both the emotion regulation and DBT skills trainings were more effective than the control group, with mothers reporting large significant decreased self-reported depression, anxiety, and stress (Jenaabadi, 2017). These studies indicate that other healthy individuals tasked with the care of difficult-to-deal-with individuals may also benefit from DBT skills trainings. A search of the top educational psychology journals produced no articles relating to the use of DBT.

**Pre-Service Teachers, Stress, and Burnout**

Preparing pre-service teachers to cope effectively with the stresses of teaching appears to be a sensible way to address subsequent teacher burnout (Kerr et al., 2017; McMullin, 2014; Poulin, 2009; Poulin et al., 2008). Teacher stress is associated with negative emotions such as anger, frustration, anxiety and depression about the work of teaching (Kyriacou, 1987). Teacher burnout results from “prolonged stress, primarily characterized by physical, emotional and attitudinal exhaustion” (Kyriacou, 1987, p. 146). There is some indication that the “burnout process may begin as early as the
student-teaching experience” (Fives et al., 2007, p. 916; Kerr et al., 2017). Various approaches to prepare pre-service teachers to cope with the stresses of teaching, have been considered. Among them is adding components to teacher preparation programs that help pre-service teachers develop realistic expectations and appropriate skills for the teaching profession. Brown and Nagel (2004) suggested that, if pre-service teachers are cognizant of sources of stress in teaching, including relational difficulties with students, colleagues and parents, as well as lack of planning time and other resources, they may be better prepared. Similarly, Soloway (2017), Poulin (2009) and colleagues (2008) suggest that developing pre-service teachers’ awareness of their health and well-being allows them to better cope with the challenges of teaching. Since teacher anxiety and effective coping affects teachers’ and students’ behaviors, pre-service teachers need the skills to provide self-care and effectively cope with these and other unexpected stressors (Brown & Nagel, 2004; Gokalp, 2008).

Pre-service teachers’ increases in teaching self-efficacy are associated with decreases in burnout symptoms. Dicke and colleagues (2014) noted that increasing the self-efficacy in classroom management of those who have low self-efficacy reduced experiences of stress and decreased subsequent symptoms of emotional exhaustion, one sign of burnout. Providing instruction in coping with stress and classroom management and offering opportunities to develop mastery in these skills during the student-teaching experience may be an ideal and feasible solution, because this would both prepare students to be able to effectively cope with stress and develop the sense of mastery that could prevent later burnout (Brown & Nagel, 2004; Fives et al., 2007).

Since training teachers “in mindfulness skills can increase teachers’ sense of well-
being and teaching efficacy, as well as their ability to manage classroom behavior”

mindfulness trainings could be an effective intervention for pre-service teachers (Kerr et al., 2017; Meiklejohn et al., 2012, p.291; Roeser et al., 2012). DBT skills training does not require pre-service teachers to find time for daily meditation and thus may be more feasible than a meditation-based mindfulness training (Hue & Lau, 2015).

A DBT skills training with pre-service teachers may help them better cope with the stresses of teaching. Simultaneously, pre-service teachers can use these skills to support students in using mindfulness to make wise decisions, to emotionally self-regulate, and to use distress tolerance skills to deal with uncomfortable situations that inevitably arise as part of the school experience. Additionally, pre-service teachers would likely create more validating environments for students when applying DBT principles generally, and the DBT interpersonal effectiveness skills and Walking the Middle Path skills specifically. A validating environment likely would result in more cooperation on the part of students, much like what Singh and colleagues (2013) found in their teacher meditation study. As the first mindfulness training study using DBT skills, the focus of this study was on the feasibility of the training and its effects on pre-service teachers’ mindfulness and well-being, leaving examinations of effective coping, sense of self-efficacy, and student outcomes for future consideration.

**Method and Measurement**

Most of the mindfulness training studies described in this review involved single sample pre-post pilot studies, randomized controlled trials, and a few qualitative analyses. These studies measured several self-report outcome categories with common measures: mindfulness with the Five Facet Mindfulness Questionnaire (FFMQ), stress with the
Teacher Stress Inventory (TSI), burnout with the Maslach Burnout Inventory-Educators Survey (MBI-ES), anxiety with the State-Trait Anxiety Inventory for adults (STAI), depression with the Center for Epidemiological Studies Depression (CES-D) scale, and well-being with the Positive and Negative Affect Schedule (PANAS; Ancona & Mendelson, 2014; Anderson et al., 1999; Benn et al., 2012; Frank et al., 2015; Jennings et al., 2013; Jennings et al., 2011; Roeser et al., 2013).

Only two studies used third-party observational measures. Flook and colleagues (2013) used the Classroom Assessment Scoring System (CLASS) to observe teacher behaviors, and Singh and colleagues (2013) used behavioral student outcome measures observed by a teaching assistant. Singh and colleagues (2013) employed a multiple-baseline single-case experimental design, which allowed the researcher to make a causal argument about the training without investing excessive resources, as described below (Kratochwill & Levin, 2014).

**Single Case Experimental Design**

Single-case experimental design (SCED) has been used since the 1900s for varied purposes including to “establish the effectiveness of psychological interventions” (Smith, 2012, p. 510). SCED is a “rigorous, methodologically sound alternate method” of experimental research (Smith, 2012, p. 510). The differences between SCEDs and experimental trials (ET) makes SCED a preferred technique for development and piloting of interventions in education, while still maintaining the need to make causal inferences about the intervention (Kratochwill & Levin, 2014).

Kratochwill and Levin (2014) presented a model of intervention development that suggested using SCEDs as part of intervention development. There are two primary
differences between SCED and ET that make SCED preferred for the development and piloting of interventions. Firstly, SCEDs are considered small N designs because they do not require large samples to establish causality, as ETs do (Kratochwill & Levin, 2014). Secondly, SCED utilizes longitudinal, intensive data collection with a focus on within-person changes in the outcome variable rather than between group differences as ETs do (Smith, 2012). When developing an intervention, it is helpful to see how portions of the intervention differentially affect the outcome. This is only possible with ETs that involve the collection of longitudinal data and with SCED. A limitation of SCEDs is the generalization of results to the broader population because of the small sample (Smith, 2012). However, the benefit of saved resources and within-subject information outweigh issues of external validity at the piloting stage of an intervention (Smith, 2012). Additionally, issues of external validity can be addressed by repeating the study with additional cases while continuing to develop the intervention and then compiling information much as with a meta-analysis (Kratochwill & Levin, 2014; Smith, 2012).

With SCEDs longitudinal data is divided into phases where a series of baseline outcome data points serve as control and a series of intervention outcome data points serve as the intervention for the case, which can be one individual or a group of individuals (Smith, 2012). During analysis, these phases are compared to determine if the intervention had an effect (Kratochwill & Levin, 2014; Smith, 2012). Since the purpose of this study was to examine a DBT skills training with a teacher population for the first time and to subsequently develop it, not to generalize to a larger population, SCED was a sensible design for this study.

As with all experimental designs, researchers using SCEDs must make an
argument for causality by addressing threats to internal validity. SCEDs address threats to internal validity through replication and randomization (Kratochwill & Levin, 2014; Smith, 2012). Replication is used to determine if the dependent variable has been affected by the intervention and not by confounding variables (Kratochwill & Levin, 2014). Replication addresses threats to internal validity by eliminating person-level or group-level effects by replicating the effect within or between individuals (Smith, 2012). Much like random assignment is used to address threats to internal validity in ET studies, randomization is also used in SCEDs to eliminate confounding variables that could provide an alternative explanation for the change in the dependent variable (Kratochwill & Levin, 2014).

There are several different SCEDs used in different applications. Multiple-baseline (MB) SCEDs are used when the intervention is expected to have a permanent or lasting effect on the dependent variable and replication occurs across participants (Kratochwill & Levin, 2014; Singh et al., 2013; Smith, 2012). If the dependent variable changes for several participants upon delivery of the intervention, there is greater reason to believe that the intervention caused the change in the dependent variable (Kratochwill & Levin, 2014; Smith, 2012). As an example, Singh and colleagues (2013) used a MB SCED to examine the effects on preschool student behavior of a teacher meditation intervention because they anticipated that the effects of a meditation intervention would remain after the training was complete. In MB SCED the intervention start time is randomly assigned to each individual or group of individuals as a form of randomization (Kratochwill & Levin, 2014; Smith, 2012). The proposed study employed an intervention with pre-service teachers using a BM-SCED because it did not require a large sample and
allowed for examination of within-person effects to inform future intervention development.

**Ecological Momentary Assessment**

Although SCEDs have historically been used to examine behavioral count data, recent applications have extended to include the use of ecological momentary assessments (EMA; Smith, 2012). EMA involves gathering data points throughout and across days usually at random times (Shiffman et al., 2008). EMA methods have been used to measure mindfulness and other outcomes associated with mindfulness interventions at the within-subject level (Bentley et al., 2017; Donald, Atkins, Parker, Christie, & Ryan, 2016; Moore et al., 2016; Shiffman et al., 2008; Turner, Yiu, Claes, Muehlenkampf & Chapman, 2016). EMAs provide several validity and reliability advantages compared to typical self-report measures, but also present unique measurement issues.

EMA’s are considered more ecologically valid than typical self-report measures because the data are collected in the context that is being studied, the EMA questions ask participants about current or recent experiences, decreasing retrospective bias (Shiffman et al., 2008; Smith, 2012). The data were collected longitudinally also providing insight into within-subject trends (Shiffman et al., 2008; Smith, 2012). Moore and colleagues (2016) found EMA was more sensitive to changes due to a MBSR intervention and showed greater effect sizes compared to self-report measures of mindfulness, depression, and anxiety when the long form was administered manually and compared to a subgroup of EMA items (Moore et al., 2016). The paper-and-pencil version of the anxiety items did not detect an effect when the EMA application did with similar Number-Needed-to-
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Treat (NNTs; 7.7 for EMA and 7.3 for paper and pencil) and the NNT for the EMA application of emotional distress was 8.2 in comparison to the paper-and-pencil version of 31.1 (Moore et al., 2016). EMA’s increased ecological validity and sensitivity to change make them preferable for detecting change and ideal for use with SCED.

A subtype of EMA is the daily diary assessment, which involves gathering data points once a day during a predetermined time window (Shiffman et al., 2008). Daily diary assessments “are administered repeatedly and provide a dynamic look at the variables investigated, although with less resolution than that of within-day assessments,” providing many of the same benefits as EMAs (Shiffman et al., 2008, p. 17). Daily diaries are more affected by contextual factors such as mood because they require longer recall, but they require significantly less recall than typical long-form surveys that ask the participant to summarize experiences from the past week or more (Shiffman et al., 2008).

Donald and colleagues (2016) used daily diary assessments as part of an intervention study to examine present-moment awareness, threat appraisal, perceived coping self-efficacy, avoidance coping, and values-consistent responding. Instead of using a subgroup of items, Donald and colleagues (2016) represented each outcome by one item. Even with just one item per outcome, the authors found that the mindfulness intervention was associated with increased present-moment awareness, improved threat appraisal, and decreased subsequent negative affect (Donald et al., 2016). Though values-consistent responding and self-efficacy were not directly affected when looking at interaction effects, the authors were able to examine within-subject variation (Donald et al., 2016). They found that for both intervention and control group, subjects who had higher average present-moment awareness generally and were above their average
present-moment awareness on a particular day reported greater values-consistent responding and self-efficacy (Donald et al., 2016). This research illuminated how EMA generally and daily diary assessments specifically, can be used to better understand how mindfulness interventions translate into beneficial outcomes at the person level. These properties of EMA make them a good fit with SCEDs. This study used daily diary well-being items to measure the effects of the DBT training with pre-service teachers within a MB SCED.

In closing, mindfulness-based interventions generally, and teacher applications specifically, show promise in alleviating the adverse effects of stress and burnout as well as improving well-being. Like MBSR, DBT skills could be beneficial for teachers to have to enhance coping and burnout especially as they enter the profession. Unlike MBSR, DBT skills training does not rely on extensive formal meditation practices which are harder for participants to adhere to and pose a higher risk of negative experiences (Flook et al., 2013; Harris et al., 2016; Linehan, 2015; Lindahl et al., 2017; Singh et al., 2013). Further, DBT skills incorporate informal mindfulness practice into participants’ lives (Linehan, 2015). DBT includes emotion regulation and distress tolerance skills to support teachers’ coping with negative experiences and to address biological vulnerabilities (Linehan, 2015). Additionally, DBT skills may more directly address the emotional demands of teaching, since they include emotion regulation, distress tolerance, and interpersonal effectiveness skills.

This study also contributed to the educational psychology literature by considering the application of DBT skills, which rely on cognitive and emotional processes, with pre-service teachers to improve their mindfulness and well-being. MB
SCED with daily diary data collection was a reasonable way for one researcher to conduct a DBT skills training study with pre-service teachers, as it required a small sample and still allowed the researcher to make a causal argument (Kratochwill & Levin, 2014; Shiffman et al., 2008). Additionally, the electronically delivered daily diary blinded me to the outcomes and provided unbiased data from which to examine intervention effects (Kratochwill & Levin, 2014; Shiffman et al., 2008).
CHAPTER 3: METHOD

The purpose of this study was to apply a Dialectical Behavior Therapy (DBT) skills mindfulness training with pre-service teachers to determine if it improved teacher mindfulness and well-being using a multiple baseline (MB) single case experimental design (SCED) combined with daily diary data collection. Supplemental qualitative training implementation data were collected to inform training delivery and development. Five self-report daily diary outcome measures were selected for use in the study. These included two mindfulness measures and three well-being measures reflecting anxiety, emotional distress, and positive affect. This chapter provides a detailed description of the MB SCED, the delivered training, and the qualitative and daily diary data collection process. This is followed by how the data was analyzed.

Participants

Pre-service teachers, defined as students accepted into or in the process of applying to a teacher education program at the University of New Mexico (UNM) Spring 2018, were eligible to take part in this study. As planned, 12 pre-service teachers participated in the study. Participants were between 19 and 50 years old ($M = 25, SD = 9.92, Mdn = 21$). The gender demographics were similar to those found in education, with ¾ of participants being female. Of the participants, 67% identified a racial minority heritage and 50% identified a Caucasian racial heritage. Forty-two percent were enrolled in an elementary education program (K through 8th grade), 25% in a secondary education program (6th through 12th grade), 17% in a special education or dual licensure (combined special and elementary education) program, and 17% in an early childhood (preK through 3rd grade) program. Three participants anticipated graduating at the end of the semester of
the study, five by the following year, and another four within a year and a half of the closing of the study.

All of the participants spent time in a classroom during the study; a third of participants spent between 6 and 10 hours a week in a classroom, a third spent two to three full days a week in a classroom, and a third spent four to five days a week in a classroom. One participant withdrew from the study due to issues unrelated to the study a week after the second training session. The other 11 pre-service teachers participated the full length of the study (Table 1). Participants who completed at least 5 of the 8 sessions and at least 75% of the daily diary surveys were offered a $50 gift card as compensation for participation.

Table 1.

<table>
<thead>
<tr>
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<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>Range (Mdn)</td>
</tr>
<tr>
<td>Daily surveys</td>
<td>64.10 (7.62)</td>
<td>46 – 74 (67)</td>
</tr>
<tr>
<td>Sessions</td>
<td>6.91 (0.83)</td>
<td>5 – 8 (7)</td>
</tr>
</tbody>
</table>

Notes: N = 11. Data from the participant who withdrew from the study was excluded. This participant completed 21 daily diary surveys and two training sessions. There were 81 daily diary survey opportunities and 8 training sessions total.

**Study Design**

A multiple baseline (MB) single-case experimental design (SCED), supplemented by qualitative data, was selected for this study since the purpose of the study was to administer a pre-service teacher mindfulness training for the first time. Since the participants were unlikely to unlearn the DBT skills when the training ended, a multiple baseline design was selected. The proposed study consisted of three phases, a baseline
Supporting pre-service teachers with skills from DBT

Phase (A), a training phase (B) and a post-training phase (C). Since DBT skills trainings are often conducted in groups, the 12 participants were assigned to three groups based on their availability for the weekly training session, resulting in one group of three, one of four and one of five participants, each with a different intervention start dates (Table 2).

Table 2.

**Study phases by participant group and week.**

<table>
<thead>
<tr>
<th>Group</th>
<th>Phase</th>
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<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>C</td>
</tr>
</tbody>
</table>

**Notes:** Phase A = Baseline, Phase B = Training, Phase C = Post-training. Blank spaces indicate weeks when that group did not have a training session.

The study ran for a total of 12.5 weeks (81 days). The first group started training on day 7 (Week 2), the second on day 13 (Week 3), and the third group on day 18 (Week 4) of the study (Table 2). Half of the participants in group 1 missed the first training session and completed a makeup session three days later (Week 2, Day 10). During all phases of the study, participants completed daily diary surveys for the outcome measures. Training sessions ended by 4 pm and participants completed the daily diary survey after this time. The fifth week of the study was the university’s spring break, and two of the groups did not meet for a training session. Daily diary survey completion during this week was 83%, which was comparable to the data collection rate throughout the study. All participants in group 3 missed the training session during the tenth week. All group members wished to make up the training session, so the study was extended by one week.
Since group 3 had not skipped the spring break training, this did not change the anticipated length of the study.

For this study, replication was achieved by having multiple groups participate in the training. Randomization of training start dates, which reflect the multiple-baseline design format, for groups of participants, also eliminated confounding variables. Using both of these strategies eliminated plausible third variable explanations for changes in outcome measures during and after training implementation. MB SCED was a sensible method for this project since one investigator represents a limited resource and this design conserves resources. Lastly, the longitudinal nature of the data also made it possible to examine within-person effects, including the trajectory and lag time of training components on particular outcome variables across time, providing more nuanced information about how the training affected participants to inform future training development (Kratochwill & Levin, 2014; Smith, 2012).

Training Sessions

Permission to reproduce and modify the worksheets and handouts was received before the materials were created for participants. After collecting baseline data, the groups began the training, which consisted of eight weekly 1-hour investigator-delivered training sessions. Each session began with a brief mindfulness activity followed by a review of the homework from the previous week. Since there was no homework to review for the first session, the first half of the session provided an orientation to the skills training. The second half of the session consisted of the presentation and discussion of a new skill and often included an experiential activity. At the end of each session, participants had the opportunity to describe what they observed during the skills portion.
of the session. Each participant received a personal DBT skills notebook with the selected handouts and worksheets. At the end of each session the participants received a copy of one or two skills worksheets and a daily diary sheet for recording skills used between sessions that they completed for homework during the next week.

The training consisted of select skill sets from each of the four standard DBT skills modules: mindfulness, interpersonal effectiveness, emotion regulation, and distress tolerance skills (Appendix A; Linehan, 2015; Katz et al., 2009). Two sessions were devoted to each module. The first and last sessions also included instruction that was not linked to any particular module to orient the participant to the trainings and to transition participants into independent practice and to bring closure to the course. The training was delivered using appropriate sections of the teaching notes, handouts and worksheets that came with the DBT Skills Training Manual (Linehan, 2015).

I completed a checklist of delivered content after every session to check training fidelity, making notes of any content that was missed or added. I also made notes in a journal after each session with a focus on fidelity of implementation especially relating to the core concepts of DBT: mindfulness, dialectics, and validation. The checklists were prepared prior to each session (see Appendix B). In preparation for delivering the DBT skills sessions, I completed an online DBT Skills Training offered by Behavioral Tech that provided the equivalent of 20 contact hours of DBT skills trainer training. I also viewed the 55-minute video “This one moment: Skills for everyday mindfulness” (Linehan, Dawkins, Behavioral Tech & NIMH, 2005).

**Qualitative Data**

Qualitative evidence included notes in the researcher journal, completed and
returned participant homework sheets, and transcripts from optional post-training
interviews with participants. I maintained a paper journal throughout the study. The
journal included a detailed account and reflection of each session and was completed
immediately after each training. In the researcher journal I intended to reflect on how the
principles of mindfulness, dialectics, and validation and how to bridge participants use of
skills for themselves with use of skills with their students. The journal also included notes
about methodological reflections and issues throughout DBT training, data collection,
training delivery, and data analysis. Weekly homework sheets were retained for reference
in the journal and as qualitative data. I e-mailed the covered handouts and assigned
homework pages to participants who missed a session. Some participants completed their
homework and turned it in during a subsequent session. Participants regularly forgot or
had not completed the homework sheets and turned them in during a later session.
Participants were invited to take part in an optional semi-structured (Appendix D)
interview after the completion of the training. I interviewed four participants after
completion of quantitative data collection.

Measures

I collected participant demographic data at the beginning of the study. Participants
completed daily diary survey data throughout the study, for a total of 81 days.

One-time measures

Participants completed a demographic survey (Appendix C) with questions about
their age, program placement, the anticipated semester of graduation, and time spent in
the classroom the semester of the study as well as their race, ethnicity, and gender
immediately after providing consent for participation in the study. This survey included a
researcher generated participant ID to ensure the de-identified data could be linked back to the participant for compensation purposes.

**Daily Diary Survey**

An electronic survey system was used to administer the daily diary survey. Participants received a link to the survey via e-mail at 4 pm each day of the study. Participants were asked to complete the daily survey by midnight that day. SoSciSurvey.de hosted the survey which is a free and secure survey software designed for psychological research that has extensive functionality (Leiner, 2014). The survey was optimized for completion on a smartphone, but participants could also compete it on a tablet or computer. The daily diary survey consisted of twenty Likert scale items from four scales preceded by one dichotomous variable to record if the participant was in the training phase of the study (*In the past week I attended a DBT skills training session.*).

All Likert items begin with a “Today I …” stem followed by a prompt and was scored by the participants on a five-point scale (never, rarely, sometimes, often, always; see Appendix D).

The twenty Likert items were randomly delivered each day on five pages with four items per page to prevent the effects of item-sequencing (Shiffman et al., 2008). Three of the five scales were part of Moore and colleagues (2016) study comparing four-item EMA applications to the full-length paper and pencil application described previously. The daily diary format of these measures may have decreased their sensitivity slightly, in comparison to the EMA application, because of increased in memory bias, since participants were answering the questions for the day, not for the moment (Moore et al., 2016). However, the effect was likely small in comparison to the alternative of
recalling seven days. Thus, the daily diary version was more likely to detect changes than a long form at longer intervals (Moore et al., 2016; Shiffman et al., 2008). Alpha coefficients for the data were calculated using R Studio Version 1.1.456 with R version 3.4.1 and the psych package (Revelle, 2018; R Core Team, 2018; R Studio Team, 2016).

**Mindfulness**

Four questions from the State Mindfulness Scale (SMS) were selected for inclusion in the daily diary (Tanay & Bernstein, 2013). A state mindfulness scale was selected because a daily diary measure is more likely to reflect mindfulness as something that fluctuates over time and thus is more trait-like than a state-like (Tanay & Bernstein, 2013). The full SMS included 20 items ranging in factor loadings from .55 to .94, 15 of which loaded on a factor the authors called mindfulness of mind, and 5 of which loaded on a factor the authors called mindfulness of body. The two items with the highest factor loadings were selected from each factor. The factor loadings for the two selected mindfulness of mind items (*noticed pleasant and unpleasant emotions; noticed pleasant and unpleasant thoughts*) were .80 and .77 respectively and the factor loadings for the mindfulness of body items (*noticed pleasant and unpleasant physical sensations; noticed various sensations caused by my surroundings [e.g., heat, coolness, the wind on my face]*) were .94 and .91 respectively. For this study, the item stem was modified by replacing “am” from the EMA application to “was” to align with a daily diary application and the corresponding “Today I …” prompt (*was preoccupied with the past, was focused on the present moment, was preoccupied with the future, was able to accept the thoughts and feelings I had*). In this study, a daily average the four item SMS score (α = .82), showing acceptable reliability, was calculated as the outcome measure for analysis.
Moore and colleagues (2016) found that the EMA application of the Cognitive Affective Mindfulness Scale-Revised (CAMS-R) was better able to measure effects of a MBSR intervention than the typical full-scale paper and pencil measure (Moore et al., 2016). “When translating … between-group effect sizes into Number-Needed-to-Treat (NNT) for clinical significance” the EMA mindfulness measure had an NNT of 7.5 compared to the paper and pencil version at 13.6 (Moore et al., 2016, p. 119). In this study, the daily average of the four CAMS-R items produced a global mindfulness score, with the two items that include “preoccupied” reverse coded. Unlike in the previous application, the reliability of the CAMS in this study was poor ($\alpha = .35$), for this reason the indicator was not used for analysis.

**Well-being**

Items from the Patient Reported Outcomes Measures Information System (PROMIS) were selected to gather information about pre-service teachers’ levels of well-being. PROMIS items were developed to be “efficient (minimizes item number without compromising reliability), flexible (enables optional use of interchangeable items), and precise (has minimal error in estimate)” ways to measure common self-report outcomes (Cella et al., 2010, p. 1179). Cella and colleagues (2010) conducted a series of studies to build a databank of items, determine their reliability and validity, and compare short forms to the outcomes of full-item banks. Experts developed the item banks in the clinical domain and in psychometrics for each portion of a developed framework and then experts reviewed this for standardization (Cella et al., 2010). This served as validity evidence for the content and internal structure as recommended in the Standards for Educational and Psychological Testing (American Educational Research Association,
American Psychological Association, & National Council on Measurement in Education, 2014). IRT evaluation indicated high reliability for the PROMIS items, and correlations between short forms and full-item banks were all above .95 (Cella et al., 2010).

Moore and colleagues (2016) provided additional evidence for the use of these measures in an EMA application. They used select PROMIS items and examined their relationship to the full measure and their relationship to other measures as further described below. The same eight PROMIS items Moore and colleagues (2016) used in an EMA application described in Chapter 2 were selected to measure anxiety (Today I …felt tense, felt worried, felt anxious, felt nervous) and emotional distress (Today I…felt worthless, felt helpless, felt depressed, felt hopeless). Similar to the CAMS-R, the EMA application of the anxiety and emotional distress items were more sensitive than the full-scale administration, indicating increased validity of the EMA (Moore et al., 2016). Lastly, the items from the PROMIS Pediatric Positive Affect Short Form 4a were selected (Today I felt…happy, great, cheerful, joyful) to measure positive affect (U.S. Department of Health and Human Services, ND). The outcome score of each of the PROMIS scales was the daily average of the corresponding four items. In this study, the anxiety ($\alpha = .81$), emotional distress ($\alpha = .82$), and positive affect ($\alpha = .93$) sub-scales all showed good reliability.

**Procedures**

After receiving Institutional Review Board (IRB) approval I recruited participants by visiting Educational Psychology and College of Education classes and getting contact information (name, e-mail, and phone number) from interested students. In total, I visited six classes and received a total of 60 prospective participant contacts. Of those, many
were unreachable, were not eligible to participate, or decided they were not interested.

Six prospective participants changed their mind before the commencement of the study. I continued recruitment until I had 12 participants in the study. I scheduled and had meetings with interested participants to review the study, talk about what was being asked of them, get consent, complete one-time measures, and show them how to complete the electronic daily diary survey.

Daily diary data were collected electronically for all three phases of the study. The SoSciSurvey system sent a link to the daily diary survey to participants at 4 pm each afternoon with instructions to complete the survey before midnight that day. I assigned study participants to groups based on their availability for participating in weekly training sessions. I ensured a minimum five-day lag between groups in assigning group’s training start days, while taking into account which groups still needed more members. Participant baseline data consisted of at least five days. Subsequent groups began their training between 5 and 10 days after the previous group. During spring break, I delivered the training session only if all group participants chose to attend. Participants continued completing daily diary data during weeks when they did not attend a training session. Only one of the groups participated in a training session during spring break. Daily diary data was collected a total of 81 days.

**Compensation**

This study required a significant time commitment on the part of the participants. The participants were required to spend up to 5 minutes a day to complete the daily diary survey, 1 hour a week to attend each of the eight training sessions, between 10 and 15 minutes a week for seven weeks to complete homework and an additional 30 minutes for
the orientation meeting and 1 hour for the follow-up interview if they opted to participate in it. The study lasted almost 12 weeks, with a likely total time commitment of 17 to 19 hours. To make participation worthwhile, participants who completed 3/4 of the daily diary surveys and attended at least 5 training session were eligible for a UNM bookstore gift card valued at $50. Of the 11 participants who were offered a gift card for completing the study, seven participants retrieved it.

Ethics

Several strategies were used in this study to ensure participant safety, privacy, and confidentiality. The training sessions occurred in a room with only study members present to maintain privacy. Participants made a commitment to maintain group member confidentiality during the consent meeting and at the first training session. Since participants might have talked about applying skills in emotionally charged situations, there was a possibility they might have experienced emotional discomfort or even a crisis. To ensure emotional and physical safety the participant skills spiral included mental health and crisis resource numbers that the participant or I could refer to. To my knowledge, no crisis related to the study occurred. Discussing challenges and building skills through the DBT skills sessions likely resulted in participants’ building a relationship between each other and the researcher. Thus, the last session was designed to provide an opportunity for participants to establish closure and to help transition participants out of this supportive environment.

Several measures were taken to ensure participant confidentiality. The researcher permanently destroyed the contact information of students who chose not to participate after the fourth week of the study. I retained a paper copy of each participant’s contact
information and their study ID until the end of the study. The identifying information, including participant e-mail addresses to which the survey link was sent, were automatically de-coupled from the daily diary data by SoSciSurvey. The researcher permanently and securely removed this identifying information from the SoSciSurvey server, after linking all the participant data with their identification number, and after participants had received their compensation (Leiner, 2014).

On the homework and diary sheets, the participant name was obscured using a black marker and replaced with the identification number. The paper researcher journal did not include the names or study identification numbers of participants during the data collection phase of the study. The participant contact information and the researcher journal were securely stored on the researcher’s person or in a locked file box or cabinet throughout the study. At the close of the study and after all data has been linked, the researcher destroyed all identifying information, leaving only non-identified study data.

Analysis

Traditionally single-case data has been analyzed visually. As a result of recent technological developments single case data has been analyzed with statistical modeling techniques, including multilevel modeling (MLM; Kratochwill & Levin, 2014). The research question regarding whether the DBT skills training resulted in increased in mindfulness and well-being in pre-service teachers was considered through visual analysis and MLM.

Visual Analysis

To conduct visual analysis each outcome (SMS mindfulness, PROMIS anxiety, PROMIS emotional distress, and PROMIS positive affect) was plotted over time for each
participant with phases marked. The level as the phase mean, trend as the phase slope, and phase variability were calculated and compared for each phase while considering overlap of outcomes between phases (Kratochwill & Levin, 2014). The immediacy or lag of the effect of the training was also examined (Kratochwill & Levin, 2014). This involved four steps, answering the following questions:

[Did] baseline data document a predictable pattern?
[Did] data within each phase allow documentation of a predictable pattern?
[Did] data between phases document basic effects?

Multilevel Modeling

MLM, specifically piecewise growth models, were used to determine if there was an effect of training on participant well-being. Observations (Level 1) were nested within participants (Level 2). All analyses were done using R Studio version 1.1.456 and R version 3.5.1 with the nlme package (Pinheiro, Bates, DebRoy, Sarkar, & R Core Team, 2018; R Core Team, 2018; R Studio Team, 2016). A baseline intercept-only model accounting for nesting for each of the outcome measures was used to calculate an intraclass correlation to determine the amount of variability in the outcome variable attributed to the nesting of observations within participants.
Table 3

*Time coding scheme for three-piece growth models.*

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<th>7 ...</th>
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<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Notes: For all participants, including the participant who withdrew from the study, the reference category was the day after their last attended training day.

The first model included three variables (pieces), one for each phase and representing time, with a random participant intercept. Table 3 presents the dummy coding scheme for the three-piece model (Raudenbush & Brynk, 2002; Zvoch, 2016).

Based on this coding scheme, the intercept represented the predicted level of the outcome at the end of the training phase, and the beta coefficient for each phase represented the growth rate during that phase. For the second model, I allowed the phase slopes to vary by participant. For the third model, I added training day, as a dummy coded variable, to the model.

A fourth and fifth model, adding day after training and two days after training as dummy coded variables respectively, was considered if training day or day after training showed significant effects on the outcome. I compared models based on significant
I then estimated the models using restricted minimum likelihood (REML) estimation.

To check that model assumptions were not violated I examined the data to ensure equal variances between phases, equal variances between participants, and normally distributed outcomes. I plotted the residuals of the final REML estimated model with the predictors to ensure they were independent and examined the residuals to determine if they were normally distributed (Kratochwill & Levin, 2014). I did not identify any problems with MLM assumptions.

**Qualitative Analysis**

Thematic analysis of the researcher journal entries, weekly homework sheets, and follow-up interviews was used to consider how pre-service teachers developed, interacted with, and used the DBT skills during training delivery. I transferred the hand-written researcher journal and weekly homework sheet content into electronic format. I typed the post-training interviews while conducting them. I coded the content for themes twice using NVivo Version 11.4.2 (NVivo, 2017). Because of the amount of data and the three different types of data, I used manual sorting for the final analysis. All qualitative data, divided into sentences or groups of sentences directly relating to one concept, were printed on colored cards. I printed all the interview excerpts on plain color. I printed the researcher notes and participant homework information on four different colors of paper, one color corresponding to each module and cut them into cards.

I then separated the cards into those that included training feedback and researcher or facilitator perspectives, and those that related to participant experiences of skills use for themselves or with and by students. I sorted these cards into themes. For the
participant skills use, I first sorted the data into piles corresponding to personal skills use and skills use in education, and then by module (mindfulness, emotion regulation, interpersonal effectiveness, and distress tolerance). Then I sorted each module into sub-themes using constant comparison for subsequent module content, resulting in themes across modules. While compiling results I noticed the need to include aspects of DBT skills, theory, and rationale as additional data. I incorporated this information about the DBT skills into the findings to provide necessary context.
CHAPTER 4: EFFECTS OF TRAINING ON OUTCOME MEASURES

This chapter begins with a consideration of fidelity of the DBT training delivery, since any training effect must be predicated on fidelity of treatment delivery. Following training fidelity, I provide the results from the visual analysis, including participant level descriptive statistics. In the third section, I provide the results of the quantitative analysis. Chapter 5 presents the qualitative finding from the study. The final chapter of this dissertation will consider the implications of the findings of this study, in combination with the reviewed literature, as well as study limitations.

Training Fidelity

Training fidelity was monitored by a session plan checklist that I completed during or immediately after each training session (see Appendix B). I examined fidelity of treatment by calculating the percentage of session content delivered for each session and group, by dividing the total number of session items covered by the total possible session items (n) designated on the session plan (Table 4). Training delivery fidelity was high throughout the study.

Table 4

<table>
<thead>
<tr>
<th>Session (total items)</th>
<th>Group1 (makeup)</th>
<th>Group2</th>
<th>Group3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(62)</td>
<td>85% (98%)</td>
<td>100%</td>
<td>97%</td>
</tr>
<tr>
<td>2(50)</td>
<td>90%</td>
<td>92%</td>
<td>100%</td>
</tr>
<tr>
<td>3(63)</td>
<td>98%</td>
<td>94%</td>
<td>100%</td>
</tr>
<tr>
<td>4(28)</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>5(70)</td>
<td>94%</td>
<td>100%</td>
<td>90%</td>
</tr>
<tr>
<td>6(76)</td>
<td>86%</td>
<td>93%</td>
<td>93%</td>
</tr>
<tr>
<td>7(107)</td>
<td>92%</td>
<td>93%</td>
<td>93%</td>
</tr>
<tr>
<td>8(107)</td>
<td>97%</td>
<td>98%</td>
<td>96%</td>
</tr>
</tbody>
</table>

Note: Half the participants in Group 1 missed the first training session and completed a makeup session three days later so they could remain in the study, thus two fidelity scores are provided for this group.
Visual Analysis

As described in the analysis section, the visual analysis involved four steps each guided by an analysis question (Kratochwill & Levin, 2014). For each outcome measure, these questions were first examined for each participant and then across participants:

[Did] baseline data document a predictable pattern?

[Did] data within each phase allow documentation of a predictable pattern?

[Did] data between phases document basic effects?


To answer these questions, I plotted each of the outcomes over time for each participant (Appendix F). I also calculated the phase mean (level), phase slope (trend), and phase variability (SD) for each individual (Tables 5 through 8). What follows is a review of the visual findings by outcome.
Mindfulness

A stable baseline of SMS mindfulness was established for Participant D, Participant J (Group 3), and Participant H (Group 2). The data within each phase showed some predictable pattern for Participant B, Participant H (Group 2), Participant D, and Participant J (Group 3). Of these, data from Participant B and Participant D showed an increase in mindfulness, and data from Participant H and Participant J showed decreased mindfulness as measured by the SMS (Table 5). Data from Participant B, Participant D and Participant J appeared to show a lag of about 11-14 days. Notable is that Participant B and Participant J both did not attend the training a week after the first session. Experimental control across phases was not demonstrated.

Table 5

*Participant Descriptive Statistics for Mindfulness.*

<table>
<thead>
<tr>
<th>Participant</th>
<th>Baseline M(SD)</th>
<th>Training M(SD)</th>
<th>Post-training M(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3.19 (0.47)</td>
<td>3.61 (0.51)</td>
<td>3.68 (0.35)</td>
</tr>
<tr>
<td>B</td>
<td>2.66 (0.38)</td>
<td>3.11 (0.50)</td>
<td>3.23 (0.57)</td>
</tr>
<tr>
<td>C</td>
<td>3.25 (0.46)</td>
<td>3.60 (0.42)</td>
<td>4.16 (0.64)</td>
</tr>
<tr>
<td>D</td>
<td>1.50 (0.74)</td>
<td>2.76 (0.59)</td>
<td>3.20 (0.21)</td>
</tr>
<tr>
<td>E</td>
<td>2.04 (0.43)</td>
<td>1.80 (0.54)</td>
<td>2.08 (0.31)</td>
</tr>
<tr>
<td>F</td>
<td>2.94 (0.43)</td>
<td>2.77 (0.28)</td>
<td>3.38 (0.36)</td>
</tr>
<tr>
<td>G</td>
<td>3.45 (0.44)</td>
<td>3.64 (0.45)</td>
<td>4.14 (0.89)</td>
</tr>
<tr>
<td>H</td>
<td>3.73 (0.34)</td>
<td>3.12 (0.28)</td>
<td>3.03 (0.21)</td>
</tr>
<tr>
<td>I</td>
<td>3.73 (0.28)</td>
<td>3.82 (0.31)</td>
<td>4.07 (0.37)</td>
</tr>
<tr>
<td>J</td>
<td>3.82 (0.40)</td>
<td>3.19 (0.32)</td>
<td>3.00 (0.00)</td>
</tr>
<tr>
<td>K</td>
<td>2.96 (0.29)</td>
<td>3.17 (0.37)</td>
<td>3.52 (0.50)</td>
</tr>
<tr>
<td>L</td>
<td>2.92 (0.41)</td>
<td>3.22 (0.40)</td>
<td>2.55 (0.69)</td>
</tr>
<tr>
<td>All</td>
<td>3.04 (0.83)</td>
<td>3.27 (0.55)</td>
<td>3.42 (0.77)</td>
</tr>
</tbody>
</table>

*Notes:* For all participants, including the participant who withdrew from the study, the post-training phase started the day after their last attended training day.
Positive Affect

A stable baseline was established for Participant D (Group 3) and Participant H (Group 2) prior to training. Data from Participant B and Participant G (Group 2) showed a predictable pattern within phases that included a possible floor effect for Participant B during the training phase. Participant E’s incomplete data also indicated a possible ceiling effect. Data from two participants showed the expected increase in positive affect (Participant A and Participant G) and data from three participants showed an effect opposite the predicted direction (Participant B, Participant C, and Participant J; Table 6). Data from Participant A and Participant G indicated that there may have been some lagged effect of positive affect. However, experimental control across phases was not established.

Table 6

<table>
<thead>
<tr>
<th>Participant</th>
<th>Baseline M(SD)</th>
<th>Training M(SD)</th>
<th>Post-training M(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3.19 (0.47)</td>
<td>3.61 (0.51)</td>
<td>3.68 (0.35)</td>
</tr>
<tr>
<td>B</td>
<td>2.66 (0.38)</td>
<td>3.11 (0.50)</td>
<td>3.23 (0.57)</td>
</tr>
<tr>
<td>C</td>
<td>3.25 (0.46)</td>
<td>3.60 (0.42)</td>
<td>4.16 (0.64)</td>
</tr>
<tr>
<td>D</td>
<td>1.50 (0.74)</td>
<td>2.76 (0.59)</td>
<td>3.20 (0.21)</td>
</tr>
<tr>
<td>E</td>
<td>2.04 (0.43)</td>
<td>1.80 (0.54)</td>
<td>2.08 (0.31)</td>
</tr>
<tr>
<td>F</td>
<td>2.94 (0.43)</td>
<td>2.77 (0.28)</td>
<td>3.38 (0.36)</td>
</tr>
<tr>
<td>G</td>
<td>3.45 (0.44)</td>
<td>3.64 (0.45)</td>
<td>4.14 (0.89)</td>
</tr>
<tr>
<td>H</td>
<td>3.73 (0.34)</td>
<td>3.12 (0.28)</td>
<td>3.03 (0.21)</td>
</tr>
<tr>
<td>I</td>
<td>3.73 (0.28)</td>
<td>3.82 (0.31)</td>
<td>4.07 (0.37)</td>
</tr>
<tr>
<td>J</td>
<td>3.82 (0.40)</td>
<td>3.19 (0.32)</td>
<td>3.00 (0.00)</td>
</tr>
<tr>
<td>K</td>
<td>2.96 (0.29)</td>
<td>3.17 (0.37)</td>
<td>3.52 (0.50)</td>
</tr>
<tr>
<td>L</td>
<td>2.92 (0.41)</td>
<td>3.22 (0.40)</td>
<td>2.55 (0.69)</td>
</tr>
<tr>
<td>All</td>
<td>3.04 (0.83)</td>
<td>3.27 (0.55)</td>
<td>3.42 (0.77)</td>
</tr>
</tbody>
</table>

Notes: For all participants, including the participant who withdrew from the study, the post-training phase started the day after their last attended training day.
Anxiety

Data from Participant H (Group 2) was the only data that showed a predictable baseline pattern of anxiety. The data phases documented the predicted basic effect, or a decrease in anxiety, for Participant F, Participant I (Group 1), and Participant J (Group 3) and showed an increase for Participants B, Participant H (Group 2), Participant C, Participant D (Group 3), and Participant K (Group 1; Table 7). Experimental control across phases was not demonstrated.

Table 7

<table>
<thead>
<tr>
<th>Participant</th>
<th>Baseline M(SD)</th>
<th>Training M(SD)</th>
<th>Post-training M(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2.46 (0.41)</td>
<td>2.11 (0.53)</td>
<td>1.50 (0.52)</td>
</tr>
<tr>
<td>B</td>
<td>2.20 (0.58)</td>
<td>2.67 (0.64)</td>
<td>3.04 (0.49)</td>
</tr>
<tr>
<td>C</td>
<td>2.22 (0.90)</td>
<td>2.77 (0.61)</td>
<td>3.41 (0.55)</td>
</tr>
<tr>
<td>D</td>
<td>1.69 (0.66)</td>
<td>1.73 (0.46)</td>
<td>2.30 (0.21)</td>
</tr>
<tr>
<td>E</td>
<td>2.50 (0.57)</td>
<td>1.75 (0.25)</td>
<td>1.40 (0.50)</td>
</tr>
<tr>
<td>F</td>
<td>2.94 (0.35)</td>
<td>2.60 (0.63)</td>
<td>2.21 (0.77)</td>
</tr>
<tr>
<td>G</td>
<td>3.38 (0.57)</td>
<td>2.93 (0.66)</td>
<td>3.05 (0.19)</td>
</tr>
<tr>
<td>H</td>
<td>2.13 (0.34)</td>
<td>2.35 (0.41)</td>
<td>3.13 (0.52)</td>
</tr>
<tr>
<td>I</td>
<td>3.03 (0.25)</td>
<td>3.03 (0.27)</td>
<td>2.79 (0.29)</td>
</tr>
<tr>
<td>J</td>
<td>3.36 (0.59)</td>
<td>2.71 (0.38)</td>
<td>2.63 (0.32)</td>
</tr>
<tr>
<td>K</td>
<td>1.88 (0.41)</td>
<td>2.55 (0.55)</td>
<td>2.55 (0.44)</td>
</tr>
<tr>
<td>L</td>
<td>2.64 (0.74)</td>
<td>2.54 (0.51)</td>
<td>2.40 (0.58)</td>
</tr>
</tbody>
</table>

All 2.56 (0.77) 2.54 (0.63) 2.56 (0.74)

Notes: For all participants, including the participant who withdrew from the study, the post-training phase started the day after their last attended training day.
Emotional Distress

Data for emotional distress seemed to show a floor effect for Participant E and Participant K (Group 1) at baseline, and for Participant D (Group 3), and Participant E (Group 1) after the training had started. Data from Participant A (Group 3), Participant B, Participant H (Group 2), and Participant I (Group 1) showed a stable baseline for emotional distress without indication of floor effects. Data from three participants (Participant G, Participant I, and Participant J) showed a within phase pattern that indicated a basic effect as predicted, with decreased emotional distress (see Table 8).

Whereas data from three participants (Participant B, Participant C, and Participant F) showed a pattern in the opposite direction (Table 8). Data from Participant B, Participant C, Participant F and Participant I indicated there might be a lagged effect for emotional distress, though the effect was less distinct from the one identified for SMS mindfulness.

There did not appear to be experimental control across phases.

Table 8

<table>
<thead>
<tr>
<th>Participant</th>
<th>Baseline M (SD)</th>
<th>β</th>
<th>Training M (SD)</th>
<th>β</th>
<th>Post-training M (SD)</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1.42 (0.30)</td>
<td>-0.03</td>
<td>1.26 (0.44)</td>
<td>-0.01</td>
<td>1.07 (0.12)</td>
<td>0.01</td>
</tr>
<tr>
<td>B</td>
<td>1.43 (0.43)</td>
<td>0.22</td>
<td>2.66 (0.99)</td>
<td>0.02</td>
<td>2.88 (0.61)</td>
<td>-0.02</td>
</tr>
<tr>
<td>C</td>
<td>1.50 (0.53)</td>
<td>0.13</td>
<td>2.32 (0.65)</td>
<td>&lt;0.01</td>
<td>3.03 (0.70)</td>
<td>0.10</td>
</tr>
<tr>
<td>D</td>
<td>1.48 (0.62)</td>
<td>0.01</td>
<td>1.32 (0.38)</td>
<td>0.01</td>
<td>1.55 (0.41)</td>
<td>0.01</td>
</tr>
<tr>
<td>E</td>
<td>1.25 (0.22)</td>
<td>-0.07</td>
<td>1.10 (0.22)</td>
<td>-0.02</td>
<td>1.00 (0.00)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>F</td>
<td>1.17 (0.18)</td>
<td>0.02</td>
<td>1.37 (0.52)</td>
<td>&lt;-0.01</td>
<td>1.04 (0.10)</td>
<td>-0.03</td>
</tr>
<tr>
<td>G</td>
<td>2.90 (0.98)</td>
<td>-0.17</td>
<td>1.87 (0.64)</td>
<td>&lt;0.01</td>
<td>2.34 (0.56)</td>
<td>0.08</td>
</tr>
<tr>
<td>H</td>
<td>2.25 (0.37)</td>
<td>0.02</td>
<td>2.19 (0.37)</td>
<td>0.01</td>
<td>2.66 (0.52)</td>
<td>0.03</td>
</tr>
<tr>
<td>I</td>
<td>2.90 (0.21)</td>
<td>-0.02</td>
<td>2.89 (0.33)</td>
<td>-0.01</td>
<td>2.29 (0.19)</td>
<td>-0.03</td>
</tr>
<tr>
<td>J</td>
<td>1.64 (0.63)</td>
<td>-0.02</td>
<td>1.33 (0.27)</td>
<td>&lt;0.01</td>
<td>1.25 (0.20)</td>
<td>-0.04</td>
</tr>
<tr>
<td>K</td>
<td>1.00 (0.00)</td>
<td>0.07</td>
<td>1.18 (0.29)</td>
<td>0.01</td>
<td>1.3 (0.29)</td>
<td>0.01</td>
</tr>
<tr>
<td>L</td>
<td>2.08 (0.61)</td>
<td>0.04</td>
<td>2.30 (0.75)</td>
<td>0.01</td>
<td>2.3 (0.54)</td>
<td>-0.01</td>
</tr>
<tr>
<td>All</td>
<td>1.78 (0.77)</td>
<td></td>
<td>1.88 (0.81)</td>
<td></td>
<td>1.91 (0.84)</td>
<td></td>
</tr>
</tbody>
</table>

Notes: For all participants, including the participant who withdrew from the study, the post-training phase started the day after their last attended training day.
Multilevel Modeling

The piecewise MLMs provided information about how the training influenced participants mindfulness and well-being. The models examined the effect of phase (baseline, training, and post-training) and of training day. Reported estimates were calculated using REML, with changes in log likelihood between models calculated from ML estimated models.

Mindfulness

The ICC of the intercept-only model of SMS mindfulness indicated that 52% of the variance in SMS mindfulness was attributable to clustering within participant. The best-fit model, based on statistical differences in the log likelihood, was Model 3 (Table 9). The analysis indicated no statistically significant differences in phases. Daily diary survey scores of mindfulness on evenings after attending a training session were statistically higher by 0.15 points ($p = 0.02$) than on other evenings. No effect on mindfulness the day after training was identified.

Table 9

*Piecewise Growth Model for Mindfulness*

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed effects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.20 (0.15)**</td>
<td>3.18 (0.16)**</td>
<td>3.17 (0.16)**</td>
</tr>
<tr>
<td>Baseline</td>
<td>0.02 (0.01)**</td>
<td>0.02 (0.02)</td>
<td>0.02 (0.02)</td>
</tr>
<tr>
<td>Training</td>
<td>&lt;0.01 (&lt;0.01)</td>
<td>&lt;0.01 (&lt;0.01)</td>
<td>&lt;0.01 (&lt;0.01)</td>
</tr>
<tr>
<td>Post Training</td>
<td>0.02 (0.01)**</td>
<td>0.02 (0.01)</td>
<td>0.02 (0.01)</td>
</tr>
<tr>
<td>Training Day</td>
<td>0.15 (0.06)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Random effects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant mean</td>
<td>0.52</td>
<td>0.54</td>
<td>0.54</td>
</tr>
<tr>
<td>Baseline</td>
<td>0.06</td>
<td>0.06</td>
<td>0.06</td>
</tr>
<tr>
<td>Training</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Post Training</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>Observation</td>
<td>0.49</td>
<td>0.44</td>
<td>0.44</td>
</tr>
</tbody>
</table>

Log Likelihood

-528.43**

-487.49**

-484.31*

*Note. *$p < .05$, **$p < .01$. N = 727 observations from 12 participants. Model parameters based on REML estimation. Differences in log likelihood based on ML estimation.*
Positive Affect

ICCs of the baseline model indicated that within participant variation accounted for 74% of the variability of positive affect scores. Model 4 fit the data best (Table 10).

The analysis identified no statistical differences by phase. Participants reported statistically higher levels of positive affect the evening of ($\beta = 0.21, p < 0.001$) and evening after ($\beta = 0.14, p < 0.032$) attending a training compared to the evening of non-training days.

Table 10

<table>
<thead>
<tr>
<th>Piecewise Growth Model for Positive Affect</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.11 (0.25)**</td>
<td>3.12 (0.28)**</td>
<td>3.10 (0.28)**</td>
<td>3.09 (0.28)**</td>
</tr>
<tr>
<td>Baseline</td>
<td>-0.01 (0.01)</td>
<td>-0.01 (0.02)</td>
<td>-0.01 (0.02)</td>
<td>-0.01 (0.02)</td>
</tr>
<tr>
<td>Training</td>
<td>&lt;0.01 (&lt;0.01)</td>
<td>&lt;0.01 (&lt;0.01)</td>
<td>&lt;0.01 (&lt;0.01)</td>
<td>&lt;0.01 (&lt;0.01)</td>
</tr>
<tr>
<td>Post Training</td>
<td>0.02 (0.01)**</td>
<td>0.01 (0.01)</td>
<td>0.01 (0.01)</td>
<td>0.01 (0.01)</td>
</tr>
<tr>
<td>Training Day</td>
<td>0.19 (0.06)**</td>
<td>0.21 (0.06)**</td>
<td></td>
<td>0.14 (0.07)*</td>
</tr>
<tr>
<td>Day After Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Random effects</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>0.97</td>
<td>0.96</td>
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<tr>
<td>Training</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Post Training</td>
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<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>Observation</td>
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<td>0.46</td>
<td>0.46</td>
<td>0.46</td>
</tr>
<tr>
<td><strong>Log Likelihood</strong></td>
<td>-564.42**</td>
<td>-518.08**</td>
<td>-513.29**</td>
<td>-510.99*</td>
</tr>
</tbody>
</table>

Note. * $p < .05$, ** $p < .01$. $N = 727$ observations from 12 participants. Model parameters based on REML estimation. Differences in log likelihood based on ML estimation.
Anxiety

The calculated ICC for anxiety was 0.34. Model 2 fit the data best (Table 11). Although this model included a statistically significant positive slope of training, the effect of the slope was negligible ($\beta = 0.005, p = 0.01$). No statistical differences of anxiety between training and non-training days were identified.

Table 11

*Piecewise Growth Model for Anxiety*

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed effects</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
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<td>2.61 (0.10)**</td>
</tr>
<tr>
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<td>0.01 (0.02)</td>
<td>0.01 (0.02)</td>
</tr>
<tr>
<td>Training</td>
<td>&lt;0.01 (&lt;0.01)**</td>
<td>&lt;0.01 (&lt;0.01)*</td>
<td>&lt;0.01 (&lt;0.01)*</td>
</tr>
<tr>
<td>Post Training</td>
<td>-0.01 (0.01)</td>
<td>-0.01 (0.02)</td>
<td>-0.01 (0.02)</td>
</tr>
<tr>
<td>Training Day</td>
<td></td>
<td></td>
<td>0.06 (0.07)</td>
</tr>
<tr>
<td><strong>Random effects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant mean</td>
<td>0.42</td>
<td>0.33</td>
<td>0.33</td>
</tr>
<tr>
<td>Baseline</td>
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<td>0.07</td>
</tr>
<tr>
<td>Training</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Post Training</td>
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<td>0.06</td>
<td>0.06</td>
</tr>
<tr>
<td>Observation</td>
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<td>0.52</td>
</tr>
<tr>
<td><strong>Log Likelihood</strong></td>
<td>-633.11**</td>
<td>-593.80**</td>
<td>-593.36</td>
</tr>
</tbody>
</table>

*Note. *p < .05, **p < .01. N = 727 observations from 12 participants. Model parameters based on REML estimation. Differences in log likelihood based on ML estimation.*
Emotional Distress

The ICC for emotional distress was 0.51. As with anxiety, model comparisons indicate that Model 2 fit the data best (Table 12). The analysis indicated no statistical differences by phase or statistical differences of emotional distress between training and non-training days.

Table 12

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed effects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>1.91 (0.18)**</td>
<td>1.89 (0.20)**</td>
<td>1.89 (0.20)**</td>
</tr>
<tr>
<td>Baseline</td>
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<td>0.02 (0.03)</td>
<td>0.02 (0.03)</td>
</tr>
<tr>
<td>Training</td>
<td>&lt;0.01 (&lt;0.01)**</td>
<td>&lt;0.01 (&lt;0.01)</td>
<td>&lt;0.01 (&lt;0.01)</td>
</tr>
<tr>
<td>Post Training</td>
<td>&lt;-0.01 (&lt;0.01)</td>
<td>0.01 (0.01)</td>
<td>0.01 (0.01)</td>
</tr>
<tr>
<td>Training Day</td>
<td></td>
<td>-0.01 (0.07)</td>
<td></td>
</tr>
<tr>
<td><strong>Random effects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant mean</td>
<td>0.60</td>
<td>0.69</td>
<td>0.69</td>
</tr>
<tr>
<td>Baseline</td>
<td>0.09</td>
<td>0.09</td>
<td></td>
</tr>
<tr>
<td>Training</td>
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<td>0.01</td>
<td></td>
</tr>
<tr>
<td>Post Training</td>
<td>0.04</td>
<td>0.04</td>
<td></td>
</tr>
<tr>
<td>Observation</td>
<td>0.58</td>
<td>0.52</td>
<td>0.52</td>
</tr>
</tbody>
</table>

*Note. *p < .05, **p < .01. N = 727 observations from 12 participants. Model parameters based on REML estimation. Differences in log likelihood based on ML estimation.
CHAPTER 5: DBT TRAINING IN CONTEXT

The qualitative data were analyzed to identify information that related to how participants used or thought they might use DBT skills to answer the second research question (How do pre-service teachers develop, interact with and use the DBT skills during training delivery?). Included was any evidence of the use of particular or general DBT skills in interviews or researcher notes. All homework assignments, since this involved practicing skills, were included. Through this analytical process, I identified another domain related to the purpose of this study: training feasibility and development. The next section reviews these qualitative results, and the themes identified within them.

Coping with Life: the ‘Good,’ the ‘Bad,’ and the ‘Ugly’

Participants used DBT skills to address the challenges they encountered in their daily lives. They used them with emotions, either to change unwanted emotions or to elicit positive emotional experiences. In addition to using DBT skills in their personal lives, seven of the participants spoke about or used DBT skills in educational contexts. This was in line with the goal of DBT skills training “to help individuals change behavioral, emotional, thinking, and interpersonal patterns associated with problems in living” (Linehan, 2015, p. 3). In this study, the patterns were not associated with “problems in living,” but rather with ‘challenges in living’ and, for some participants ‘challenges in teaching’ more specifically. The way the pre-service teachers in this study used DBT skills also echoed recent adaptations of DBT skills. For example, the participants in this study were “individuals who want to learn skills for coping with and accepting individuals in their lives who are difficult” (Linehan, 2015, p. vii), knowing that among the “individuals in their lives who are difficult” will be students, colleagues,
and parents.

Evidence to support the use of DBT skills for dealing with the challenges of life and improving emotional experience came from all three sources of data (researcher notes, participant interviews, and participant completed homework sheets) providing triangulation of findings. In the following section, I present how participants used DBT skills for the ‘good’ (improving their experience), the ‘bad’ (addressing negative emotions), and the ‘ugly’ (challenges) of their lives.

The ‘Good’ and the ‘Bad’

Participants’ accounts of using skills in personal situations ranged broadly. They made salient that life is full of experiences, many of them challenging, eliciting negative responses and emotions. This reflects the nature of living. Emotions cannot be directly controlled and arise out of experience. Participants mentioned the ‘good’ of life, or positive states of mind, in relation to using DBT skills. These mentions in personal contexts were either related to feeling calm (“calm,” “cool off,” “inner peace”) or some other positive emotional experience (“relief,” “easing my mind,” “lightened mood,” “silly,” “happy,” “improved self-worth”). As with skills use in personal situations, participants who used DBT skills in educational contexts mentioned using skills to feel calm and generally better (e.g., “not stressed,” “peace of mind,” “felt good”).

Participants referred more frequently to the ‘bad’ of life in the form of negative emotions. In personal contexts, participants mentioned using skills with anger (“angry,” “frustrated,” “annoyed”), fear (“worried,” “nervous”), sadness (“depressed,” “sad”) and guilt (“guilty”) as well as with more general negative experiences (“stress,” “moodiness”). Participants who used DBT skills in educational contexts also reported
these emotions. Notable, however, was the addition of other versions of fear ("overwhelm," "flustered") and sadness ("disappointment") from the previously listed negative emotions. There was also some mention of the effect of skills use related to going from a negative emotion to a positive emotion (e.g., "upset" to "calm," "hurt" to "taking things lightly," "aggression" to being "cooled off," "angry" to "silly").

The ‘Ugly’

Negative emotions do not arise out of nowhere; they generally arise out of situations that present a challenge. Participants reported using skills in a range of challenging personal and educational situations involving others, as a result of internal experiences, related to their behavior, or in inherently challenging situations. In other words, life offered situations, in the form of challenges and associated negative emotions, in which participants employed DBT skills.

In life, we must interact with others in order to meet our needs and common goals. These interactions include conflicts related to differences in perspective. Participants used DBT skills to navigate such interpersonal conflicts in their personal lives, mentioning situations like a “fight with fiancé,” when a “friend was speaking poorly about another friend,” in an “argument with my friend,” and when someone was “not understanding what I was saying.” Participants who used skills in interpersonal conflicts in educational contexts not only referred to conflicts between them and another person (e.g., “[I want the student] to understand I am the authority,” “the teacher wants only one way to be used”), but also between students (e.g., “[he] had an argument with another student over a ruler,” with “communication issues [between students],” to “discuss [a problem] with [a] fellow student”), indicating that they saw these skills as
tools for their students as well.

Although things in life may go as planned, they do not always go as planned. Others may behave in ways we appreciate, but this does not happen all the time. Participants used skills to cope with the behaviors of others in their personal and educational lives. In their personal lives, these behaviors related to strangers (e.g., “the bus driver didn’t stop at the bus stop,” “others driving fast”), family members (e.g., “my daughter had an accident,” “my niece when she had a problem with having to clean her room”), friends and acquaintances (e.g., “a partner in a group work activity [who] was dominating the conversation,” “criticism is hard to swallow”). In professional contexts they mentioned behaviors of students (e.g., “they’re acting up,” “[in] early childhood [they] don’t know how to use words compared to act[ing] on their emotions,” “allowing them to get all [their] energy out”) and other adults they interact with professionally (e.g., “after parents missed parent-teacher conferences,” “[my cooperative] teacher wants only one way to be used,” “when I didn’t really agree with [my co-worker],” “lack of help from my cooperating teacher or EA,” “the way my co-worker is acting”).

Coping with negative emotions of others can also be challenging. In line with this, participants mentioned using skills in their personal lives in response to others’ emotions (e.g., “my nephew was upset because he didn’t get a gift he wanted for his birthday,” “co-workers feeling like they don’t do enough for their family,” “she expressed frustration with my father’s reaction,” “behavior that upset [my] partner”). Participants who used skills in educational contexts mentioned doing this primarily to cope with the emotions of students (e.g., the “student was getting upset,” “a student cried when I left school early,” “they can become overwhelmed throughout the day”).
In addition to all the external circumstances, our internal world does not always obey our wishes, we become ill or cannot sleep for example. Participants mentioned using DBT skills for such internally sourced challenges (e.g., “trouble falling asleep,” “too much time to think,” “when I have harsh thoughts of myself,” “aggression” because of “little sleep,” “my allergies kept me up”). Participants did not mention internally sourced challenges in educational contexts.

Individuals may also pose challenges by accident or by their own oversight. Participants used skills to deal with situations caused by their own behavior both in personal contexts (e.g., “[I] forgot a homework assignment”) and educational contexts (e.g., “multitasking to get a lot done,” “if you pile that on…it’s overwhelming”). Some situations that participants used skills in were complex or inherently challenging (e.g., “health issues,” “we have to fill out the advance directive,” “when a friend told me to go to the concert alone,” “a presentation,” “discussing homework with [the] instructor”).

Teaching appears to be such an inherently challenging and complex task (e.g., “prior to entering my student-teaching classroom,” “work with people you wouldn’t normally work with,” “[talking to] parents or talking to other teachers”), with multiple demands made by different people and situations.

Participants used DBT skills to promote positive (the ‘good’) emotions, decrease or address negative (the ‘bad’) emotions and cope with a myriad of challenges (the ‘ugly’) they faced in daily and professional life. There is evidence that life, both in the personal and educational contexts these participants found themselves in, provided ample opportunity to use DBT skills for these purposes. The next section considers how participants used DBT skills for coping with these facets of life.
Coping with Life: Using DBT Skills

The DBT skills training consisted of two training sessions for each of the four DBT modules: mindfulness, interpersonal effectiveness, emotion regulation, and distress tolerance. During each training session, participants were taught several discrete skills from a particular module. As previously mentioned, participants used skills in personal and educational contexts and considered how students might benefit from learning DBT skills. What follows includes a brief consideration of how DBT skills are inter-related. I follow this by an examination of each DBT skills module. Each of these four sections begin with a detailed description of the content of the course module to provide the context for the participants’ descriptions and other evidence depicting how they used the skills 1) in personal settings, 2) as teachers, and 3) for students. In the final section, I will consider participant challenges associated with the DBT skills and training.

Although the DBT skills are discrete and clustered into modules, in any given situation a number of DBT skills may have been applicable. Participant K illustrated this when she said:

They intertwine throughout the day. Now I notice I used this one and I used this one, and I also validated, or I didn't really do a good job of validating their emotions, actions, what they were sharing with me. If it was something that wasn’t too great, I just accepted it and move[d] on …[the skills are] all intertwined, [you] start with one [and] you kind of move on to [the] next one (Participant K, Interview, May 19, 2018).

Participant K described how she might start by applying one skill and then use another. This may happen because, although the skills are discrete, there are aspects of skills that
overlap and reinforce aspects of other skills. In this way, the skills are highly interrelated. In this excerpt, Participant K also acknowledged that sometimes she expected to be ineffective in her use of DBT skills, and how she used other skills to be effective even in this context (“I just accept it and move on to the next one”). This illustrates how, even if one skill is used ineffectively this does not mean the person using the skill is ineffective, because there are skills to deal with these types of setbacks. How skills are inter-related will be further clarified in each of the following sections.

All participants used DBT skills in personal situations and seven participants additionally mentioned the used of or potential use of DBT skills in educational contexts. Information about skills use in educational contexts came from seven participants. Of these seven participants, those who regularly spent time in a classroom were more likely to mention or used skills in educational contexts. The theme of teacher skills use was designated when participants described using DBT skills to be a more effective teacher or in their teaching practice. I designated the theme of student skills use when participants supported or co-regulated students with DBT skills or discussed how students may be taught DBT skills or may benefit from using them. Co-regulation took the form of modeling or scaffolding. Modeling involves the teacher using skills herself and making her use explicit to the student, for example by thinking out loud as she uses skills, by referring to DBT skills training materials, or by explicitly showing students how she uses skills (e.g., closing eyes, taking a deep breath). Scaffolding is more interactive, where the teacher guides the student through the DBT skill, for example by incorporating it into instruction, by asking the child guiding questions, or by offering prompts.

Two of the participants were doing their full-time student teaching (K and D)
during the time of the study and provided more nuanced and thorough information related
to these education-based themes, both in their homework and in the interviews. I noted
this difference in how participants used skills halfway through the skills training writing,
“the participant who is student teaching full-time, seems to apply things the most”
(Journal, G1, S5, 3/31/18).

Participant K also expressed that DBT skills may provide explicit instruction on
how to implement theories and concepts the pre-service teachers had learned
conceptually in methods courses (Interview, May 19, 2018). In the researcher notes, I
noted that “one participant noticed the training included things they have learned [in their
university classwork], but that DBT is more explicit so they don’t need to interpret and
guess how to do it” (Journal, G1, S3, March 10, 2018). In the post-training interview,
participant K said, “this was direct instruction on how to do them, it made so much sense
because it’s what you do in the classroom” (May 19, 2018). This provides evidence that
DBT skills instruction can help participants translate knowledge into practice.

**Mindfulness**

The foundational skills of DBT are the core mindfulness skills of the DBT
mindfulness module. They represent the capacities necessary for all other DBT skills.
The *Wise Mind*\(^1\) skill acknowledges that our mind can be guided by reason, by emotion,
or by an integration of reason and emotion that incorporates all the information explicitly
and implicitly available to us (Linehan, 2015). The “*What*” skills provide the actions to
do to be mindful and the “*How*” skills provide guidance on the attitudinal features of
mindfulness, or how to be mindful (Linehan, 2015). Participants practiced these skills in

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\(^1\) To differentiate between skill sets and skills (see Tables 13 through 16), skill sets are capitalized and
italicized, and skills are lower-case and italicized.
Table 13

**DBT Core Mindfulness Skills, Session 1 and 2**

<table>
<thead>
<tr>
<th>Skill Set</th>
<th>Skills</th>
<th>Examples of practices participants tried:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wise Mind</td>
<td></td>
<td>Attended to my breath coming in and out, letting my attention settle into my center. Imagined being a flake of stone on the lake. Dropped into the pauses between inhaling and exhaling. Breathed “wise” in, “mind” out. (from MWS 3)</td>
</tr>
<tr>
<td></td>
<td>describe</td>
<td>What you see outside your body. Thoughts, feelings and body sensations inside yourself. Your breathing.</td>
</tr>
<tr>
<td></td>
<td>participate</td>
<td>Dance to music. Sing along with music you are listening to. Go to a church that sings and join in the singing. Go running, riding, skating, walking; become one with the activity. Become the count of your breath, becoming only “one” when you count 1, becoming only “two” when you count 2, and so on. (from MWS 4A)</td>
</tr>
<tr>
<td>“How” Skills</td>
<td>nonjudgmentalness</td>
<td>Saying in your mind, “A judgmental thought arose in my mind.” Replace judgmental thoughts and statements with nonjudgmental thoughts and statements. Count judgmental thoughts. Observe or change judgmental expressions, postures, voice tones. Stay very concrete and describe your day nonjudgmentally. Imagine a person you are angry with. Imagine understanding that person.</td>
</tr>
<tr>
<td></td>
<td>one-mindfulness</td>
<td>Awareness while making tea or coffee. Awareness while washing the dishes. Awareness while cleaning house. Awareness while driving.</td>
</tr>
<tr>
<td></td>
<td>effectiveness</td>
<td>Give up being right. Drop willfulness. Doing what is effective. (from MWS 5A)</td>
</tr>
</tbody>
</table>

Notes: MWS = Mindfulness Worksheet (Linehan, 2015).
their daily lives between the first, second and third sessions. Table 13 provides some examples, from the homework sheets, of the ways participants practiced the core DBT Mindfulness skills. Because the core mindfulness skills worksheets consisted primarily of practice checklists (see Table 13 for examples), there were few examples in the homework of when and how participants used the core mindfulness skills.

In Personal Settings

Participants used skills from the mindfulness module in personal settings. For example, Participant E used *Wise Mind* “[because] I was feeling irritated, so I practiced to get myself calm and feel the fresh air from my window,” and Participant I used *Wise Mind* when her “daughter had an accident in the grocery store,” adding, “I managed not to react in a negative way” (MWS 3). Participant D spoke about using *nonjudgmentalness* in her interview (May 18, 2018). She said, “separating the fact and this is how I feel about the fact, that helped me not get so hurt … when someone says something, and not judge things and take them more lightly.” This statement not only reflected how she used nonjudgment to “not judge and take them more lightly,” it also indicated that she observed the facts and her feelings, a prerequisite for “separating the fact and how I feel about the fact.” This illustrates the inter-related nature of DBT skills.

As Teachers

Participants reported using the core mindfulness skills in their role as teachers. For example, Participant F mentioned that “focusing on the present, not having to focus on multitasking to get a lot done can be helpful” (Interview, May 11, 2018). Here participant F referred to the “What” skills indirectly with “focusing on the present” and to the one-mindfully “How” skill when referring to multitasking. Participant K stated that
“in situations in the classroom, it has helped that I’m not acting out of emotion… and I’m going back to *Wise [Mind]*,” reflecting the notion that doing this allowed her to be more responsive as a teacher (Interview, May 19, 2018). Notes in my researcher journal captured how one participant used mindfulness skills when her teaching was observed, a common occurrence for educators as part of the accountability measures in public education:

One participant mentioned she used *Wise Mind* when being observed by two different people while teaching. The first time she was flustered and ‘it didn’t go well.’ The second time she used breathing wise mind in and wise mind out. She said she was much less anxious, was able to think more clearly, and the teaching went much better (Journal, G1, S2, March 3, 2018).

This example provides evidence that using a DBT skill resulted in a better state of mind for teaching. In the researcher notes I also recorded how another participant talked about using *nonjudgmentalness* to maintain respect for parents:

One participant noted that she noticed hers and other teachers’ judgment about parents not showing up for parent-teacher conferences and her tendency to judge by saying “[they] don’t care.” She restated it as facts, and I suggested adding the emotional portion (I felt disappointed), so that is captured too (Journal, G1, S3, March 10, 2018).

As in previous examples, nonjudgment is predicated on the ability to observe accurately; to determine the facts of the situation. Since emotions also play into how a person produces judgment, I encouraged her to also label the emotion, reflecting the ability to observe these aspects of experience in a way that allows differentiation. This example
reflects another situation where DBT skills were applicable in an educational setting.

**For Students**

Participants talked about how students might be able to use DBT skills to self-regulate. Participants D suggested “Ask[ing kids to ask themselves], ‘Is this alright? Is this making the right decision?’” reflecting the use of *Wise Mind* or *effectiveness* (Interview, May 18, 2018). Participant F spoke about how present moment awareness, encompassed by the “*How*” and “*What*” skills related to student learning:

> Being in the present moment is very important for learning. If you have a lot of things going on in your life [you] can get distracted. Focusing on [the] present, not having to focus on multitasking to get a lot done can be helpful. That way they’re truly able to take in the content and they’ll know if they understand it and if they need to ask questions… Hopefully if [they’re] in [the] present moment they’ll understand, whereas if their mind is wandering [they’re] not really understanding what I’m teaching… Teaching kids about being present so [they] can use [it] not only in the classroom but in [their] own life in the future, they can use [it] forever (Participant F, Interview, May 11, 2018).

As was the case with previous examples, this participant refers to the “*What*” skills (“being in the present moment”) and the *one-mindfully “How”* skill (“not having to focus on multi-tasking”), providing some sense of when this might be applicable for students (“if you have a lot of things going on in your life [you] can get distracted”). Unlike previous examples, this excerpt also reflected how students can use DBT skills for self-regulated learning. This participant said that by attending mindfully students will “truly [be] able to take in the content,” “know if they understand it and if they need to ask
questions,” and “if [they’re] in [the] present moment they’ll understand.” She contrasted this to the impact of children not mindfully attending (“if their mind is wandering” [they will] “not really understanding what I’m teaching”).

Participant K spoke about incorporating the “How” skills (observe, describe, and participate) into instruction so that children will develop these skills:

One of the things I really liked when we were doing group sessions [was] … how [you] used skills like observation and description in your own instruction…I’d like to incorporate that… into my classroom [to] bring energy down from recess. It was really helpful for me to bring [my] energy down [and] I think it will help them…I think it’s easy to do with reading, read aloud, where they can just listen [and] describe what they’re hearing… [and ] I think it can be easy to incorporate into [English Language Acquisition] (ELA)…You want to observe and describe with EL students. These are all skills mentioned in courses…[without] direct instruction [on how to do them] (Participant K, Interview, May 19, 2018).

This participant saw possible physiological (“bring their energy down”) and instructional (“you want to observe and describe with EL students”) benefits to using these skills, reflecting other ways DBT skills may benefit students.

Participants D and K specifically referenced mindfulness “How” skills during interviews. Participant D spoke about using the observe skill, “[we] can also do mindfulness, [that] would be helpful as well. Like observe. ‘What did you see? What did you notice? Can you tell me more about this?’” (Interview, May 18, 2018) and Participant K focused on participate, “I think we could practice observe and describe, and participating. Participating definitely. [I] will want to do yoga, but once they do it,
it’s a lot of fun. During [they] have fun. Encouraging [them] to participate and try new things would be really helpful to kids” (Interview, May 19, 2018). Participant K links the participate skill to the pedagogical concept of risk-taking, another reflection of how DBT skills may foster self-regulated learning in students.

Other participants mentioned how the “What” skills might benefit students. Participant A said, “it would be helpful to teach them nonjudgmentalness” (Interview, May 9, 2018) as did Participant F, explaining, “noticing their judgment, not knowing what others are going through…especially [with] bullying, [which is a] big issue in schools. Using nonjudgmentalness would be helpful for them in their own lives” (Interview, May 11, 2018). Participant K also mentioned the possible value of students using effectiveness, suggesting that students might consider “[the] most effective route to get this done” (Interview, May 19, 2018). This participant also referred to effectiveness when she talked about an incident where a student threw a ruler:

[It] allowed him to see there were other things that would have been more effective. He could have talked to me, ‘that is my ruler and has my name on it and thinks it’s theirs’ rather than ripping it out of [his] hand and the whole talking back that grew [out of it] (Participant K, Interview, May 19, 2018).

These examples related to student use of the “What” skills, reflect how students themselves and their peers might benefit personally and interpersonally. In combination, participant comments indicate that they believed that the core mindfulness skills may enhance academic and socio-emotional aspects of students’ classroom experiences.

**Interpersonal Effectiveness**

The interpersonal effectiveness module of DBT consists of the *Walking the
Middle Path (Middle Path) and Objectives Effectiveness \(^2\) skills sets. The Middle Path skills, dialectics and validation, reflect the underlying theoretical principles of DBT (Linehan, 1993; Linehan, 2015). They provide a useful context for working with children. Dialectics served as a way for participants to connect what they had learned about child development and individual differences in their coursework, and to consider implications for classroom practice (See Appendix B, Session 3; Mazza et al., 2016; Rathus & Miller, 2015). Validation was included in this training because, just as the DBT “therapist engages the patient in trying to understand her actions, emotions, and thoughts,” so too does a teacher engage in these ways with children to help them negotiate the social, emotional and academic aspects of the educational experience (Linehan, 1993, p. 221). During session four we reviewed the core interpersonal effectiveness skills, Obtaining Objectives, which are practical change skills (Table 14). These skills involve clarifying priorities to determine which of the three types of skills to use: objectives effectiveness for getting what you want, relationship effectiveness to maintain and foster relationships with others, and self-respect effectiveness to maintain self-respect.

The interpersonal effectiveness skills are predicated on the core Mindfulness “What” and “How” skill sets. Looking at both sides of a situation (dialectics) and expressing how what was felt, said or done made sense, given the causes (validation), requires the ability first to observe and then to describe. Similarly, staying aware of one’s connection to others (dialectics) and reflecting on what was said or done while remaining open to correction (validation), requires a level of nonjudgment. Paying attention (dialectics) requires the listener to both participate and do so one-mindfully.

\(^2\) To differentiate between skill sets and skills (see Tables 13 through 16), skill sets are capitalized and italicized, and skills are lower-case and italicized.
Table 14

**DBT Interpersonal Effectiveness Skills, Session 3 and 4**

<table>
<thead>
<tr>
<th>Skill Set</th>
<th>Skills</th>
<th>Example practices participants tried/skill components:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking the Middle Path</td>
<td>dialectics</td>
<td>Looked at both sides: looked for the kernel of truth in another person’s side.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stayed aware of my connection: treated others as I want to be treated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Embraced Change: Purposely made changes in small ways to get used to change.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remembered that change is transactional: Paid attention to [the] effect of others on me.</td>
</tr>
<tr>
<td></td>
<td>validation</td>
<td>Paid Attention.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reflected back what was said or done, remaining open to correction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Was sensitive to what was unsaid.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expressed how what was felt, done, or said made sense, given the causes.</td>
</tr>
<tr>
<td></td>
<td>(IEWS 11A)</td>
<td></td>
</tr>
</tbody>
</table>

Obtaining Objectives

| clarifying Priorities      | objectives effectiveness: | DEAR MAN (Getting what I want): Describe
|                            |                            | Express
|                            |                            | Assert
|                            |                            | Reinforce

| relationship effectiveness: | GIVE (Keeping the relationship): | be Gentle
|                            |                                | act Interested
|                            |                                | Validate
|                            |                                | use an Easy manner

| self-respect effectiveness: | FAST (Keeping my respect for myself) | be Fair
|                            |                                     | no Apologies
|                            |                                     | Stick to values
|                            |                                     | be Truthful
|                            | (IEWS 5)                             |                                                                 |

*Notes: IEWS = Interpersonal Effectiveness Worksheet (Linehan, 2015).*

The *Objectives Effectiveness* skills require that the skill’s user has *observed* and is able to *describe* what they are setting out to accomplish accurately, and then to *participate* in that exchange fully. *Nonjudgment* and being *one-mindful* ensures that the skill’s user will deal with the reality of the situation rather than responding to judgments or veering from
their communication goal. Lastly, all use of skills is to be effective, using skills to accomplish one’s aims. Thus, the Middle Path skills build on the core mindfulness skills and continue to build the foundation of DBT training, and the Obtaining Objectives skills provide the first practical change skills based on this foundation.

As with the core mindfulness homework, the dialectics homework consisted primarily of practice worksheets (Table 14), producing few examples of when and how participants used it. In contrast, the validation and Obtaining Objectives homework required participants to provide information about the context in which they used skills, producing more examples of when and how participants used these skills.

**In Personal Settings**

Since humans are social beings, there are many opportunities in daily life to use interpersonal effectiveness. Evidence from homework indicated that this was true even in situations where the other person was not present or when there was no interaction with another person. Participant L used dialectics when making the best of a situation or making “lemonade out of lemons” (IEW 11A), by “comforting myself when I thought of my grandfather’s death by remembering his life.” On her Middle Path validation homework, Participant A “described a situation where [she was] nonjudgmental of someone in the past week” (IEWS 12):

> A young lady (18-25 y.o.) and her husband got on the bus. They then began discussing their 15 y.o. daughter and her drug use and comparing it to their own drug use. I attempted to listen with compassion rather than judgment.

In both of these situations, participants were able to describe something they had observed (i.e., noting an emotional experience that requires “comforting,” noticing the
impulse toward judgment and “attempt[ing] to listen with compassion”) and remembered to use a Middle Path skill to deal with the situation more effectively.

The Obtaining Objectives skills are designed to help participants get clear on the goal of their communication, and then use the skills that align with that goal (Table 14). Participant H reported using interpersonal effectiveness skills to communicate about his “roommates leaving,” reflecting that “[I] didn’t put self-respect first : ( ” (IEWS 5). Although Participant H reported not fulfilling his goal, the completed homework reflected an increased awareness of the goal, an understanding of which DBT skills to use, and how to use that skill in an interpersonal context. Participant F used Obtaining Objectives skills to address an interpersonal conflict:

[My problem was that a] friend was using me to get things. [I wanted to] help [my] friend understand how I was feeling. I wanted my friend to feel understanding, but not hurt and mad [and] I wanted to feel respected and not worthless…[I] negotiated and made a fair decision, didn’t say sorry for no reason, remembered what my morals are and applied [them]. [I] was honest with my feelings [and] it was effective but was still hard for me to do (Participant F, IEWS 5).

This participant noted that the communication was difficult even with the use of skills. Similarly, Participant J noted that it was “not effective at the beginning, but better at the end” on the same homework (IEWS 5). This evidence reflects the varied success of participant skills use. Nonetheless, all three of these examples indicated that participants were developing a greater awareness of the goals and effectiveness of their communication.
As teachers

There was evidence from participants that the *Middle Path* skills did provide a supportive backdrop for interpersonal interactions with students. Participant K used *dialectics* “when talking to my students, before giving instructions, and when giving feedback” to stay aware of the connection to her students (IEWS 11A). Participant D mentioned she could use the *validation* and *relationship effectiveness* (GIVE) skills as a teacher:

[By] having an open classroom where these kids are free to express what they need to. If you’re mean to kids and not interested, they don’t feel good; [you] put them at risk because they don’t think anyone cares about them, but you can be that person who cares about them (Participant D, Interview, May 18, 2018).

These sentiments reflect that this participant grasped the risk of invalidation and the benefit of a validating environment that undergirds DBT, referring specifically to the interest (I) component of the *relationship effectiveness* (GIVE) skills (Linehan, 1993; Linehan, 2015). Participant K noted that she used *validation* “throughout the week when talking to students in my class” (IEWS 12). On the same homework, Participant H wrote that “[I was nonjudgmental] interviewing a student at the school I work at” (IEWS 12). He noted *validating* the child by saying “I understand you feel this way about Spanish,” further reflecting that “[the student] was honest and realized something about himself [and I felt] good [afterward].” This participant reflected upon how *validation* can also help a child better understand their own situation, which reflects increased awareness on the child’s part as a result of the teacher’s co-regulation and use of DBT skills.

As part of the *validation* homework, Participant I described how she was
nonjudgmental with her cooperating teacher:

I didn’t judge the cooperative teacher for not answering my e-mail again. I just
didn’t give it attention. When I saw the cooperative teacher and she said, “I didn’t
see your email until later,” I told her, “no worries, I understand that you are so
busy.” She was smiling and seemed happy and not worried. I felt good, I let it go
with less stress (Participant I, IEWS 12).

This example highlights how validation from the Middle Path and nonjudgment from the
“How” mindfulness module interrelate. The participant noticed her judgment and then
validated the cooperative teachers’ perspective, making the interpersonal exchange “less
stress[ful]” and more effective. These pre-service teachers also provided examples of
how validation can support both teacher-child and collegial relationships in educational
settings.

Just as in daily life, classroom life presents many opportunities for using the
Obtaining Objectives skills. As Participant K pointed out, teachers are “dealing with
people, dealing with students, that is your job” (Interview, May 19, 2018). Participant A
echoed this sentiment saying, “the interpersonal effectiveness skills are really good skills
for [talking to] parents or talking to other teachers; there are a lot of teachers you have to
talk to” (Interview, May 9, 2018). As a specific example, Participant G wrote about using
objectives effectiveness skills to get “respect,” writing that her goal for the interaction
was “to [get the student to] understand I am the authority” (IEWS 5). Participant I wrote
“[I] want the other person [to be] happy despite how I feel” while seeking respect. She
noted that “I felt tense because I was trying to help the student, but the teacher wants only
one way to be used.” She used the objectives effectiveness DEAR and self-respect
effectiveness FAST skills, noting that she asserted (A from DEAR) by saying “I want to try my idea,” was fair (F from FAST) by acknowledging that the “teacher decision come[s] first,” and did not apologize (A from FAST) because “I didn’t wrong her.” As with the Middle Path skills, the examples of how participants used skills applied both to interactions with students and with colleagues and reflected self-awareness.

**For Students**

Participants also spoke about how students might benefit from using the interpersonal effectiveness skills from DBT. Participant A suggested students could use interpersonal effectiveness skills, specifically referring to *relationship effectiveness*, “[to] discuss [a problem] with [a] fellow student and hopefully [it will] not escalate…keeping the relationship” (Interview, May 9, 2018). Participant D said, “I think children can use DEAR to describe what happened, how they feel, what they did to express feelings, and if it was effective” (Interview, May 18, 2018). Although there was no evidence of participants teaching the skills from the interpersonal effectiveness module to students, these participant comments indicated that they could imagine how these skills would be beneficial for students to use as well.

**Emotion Regulation**

As with the interpersonal effectiveness module, the emotion regulation module includes content that provides participants with a foundation for later skills use and subsequent change skills. The foundation of emotion regulation is *Understanding and Naming Emotions*, which is followed by the *Changing Emotional Responses* skill set with practical ways to influence emotions (Table 15)³. *Understanding and Naming Emotions*

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³ To differentiate between skill sets and skills (see Tables 13 through 16), skill sets are capitalized and italicized, and skills are lower-case and italicized.
includes (1) *what emotions do for you* to clarify the value of emotions, specifically how they activate the body toward a particular action (e.g., approach or retreat) and provide information through expressions and body language to others and, through body sensations, to ourselves, and (2) *observing and describing emotions* to support identification of these and other aspects of emotions in daily experience (Linehan, 2015). As the skill name *observing and describing emotions* implies, this requires using the mindfulness *observe* and *describe* skills but also encourages *nonjudgmentalness* and *validation* by emphasizing that emotions arise naturally and are inherently valid (Linehan, 2015).

*Changing Emotional Responses* includes *check the facts*, *opposite action*, and *problem solving* to change emotions. *Check the facts* relies on the mindfulness skills *observe*, *describe*, and *nonjudgmentalness* since the focus is on separating what actually happened from interpretations about what happened. This requires accurately observing the external (e.g., events, what others said or did) and internal (e.g., emotions, physical sensations, thoughts) components and then describing them as they are (e.g., without judgment or current thoughts). *Opposite action* and *problem solving* provide practical ways to change emotions based on an assessment of the facts and deciding whether the emotion is justified or not. If the facts indicate that the emotion or its intensity is not justified (does not fit the facts) or if acting on the emotion would not be effective, then the *opposite action* skill is indicated. If the facts fit the emotion and intensity, and acting on the emotion would be effective, then the participant knows to use *problem solving*. In both cases the validity of the emotion is acknowledged and there is a consideration of effectiveness, again reflecting the inter-connected nature of the skills.
Table 15

**DBT Emotion Regulation Skills, Session 5 and 6**

<table>
<thead>
<tr>
<th>Skill Set</th>
<th>Skills</th>
<th>Skill components prompts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding and Naming Emotions</td>
<td>pros and cons of changing emotions</td>
<td>Not reviewed or practiced by participants, worksheet included in manual (ERWS 1)</td>
</tr>
<tr>
<td></td>
<td>what emotions do for you</td>
<td>Reviewed, but not practiced by participants, worksheet included in manual (ERWS 3)</td>
</tr>
<tr>
<td></td>
<td>myths about emotions</td>
<td>Not reviewed or practiced by participants, worksheet included in manual (ERWS 4A)</td>
</tr>
<tr>
<td></td>
<td>observing and describing emotions</td>
<td>Flowchart where participants write each of the following for a current or recent emotional reaction: Vulnerability factors Prompting event Interpretation of event Biological Changes Action urges Expressions via face and body language Expressions with words Actions Emotion name and intensity Aftereffects (ERWS 4)</td>
</tr>
<tr>
<td>Changing Emotional Responses</td>
<td>check the facts figuring out how to change unwanted emotions</td>
<td>Reviewed, but not practiced by participants, worksheet included in manual (ERWS 6).</td>
</tr>
<tr>
<td></td>
<td>opposite action to change emotions</td>
<td>Worksheet with spaces to provide: Emotion name and intensity before and after Prompting event If the emotion was justified or unjustified Action urges What participant did How participant did it Aftereffect (ERWS 7)</td>
</tr>
<tr>
<td></td>
<td>problem solving to change emotions</td>
<td>Worksheet with spaces to provide: Emotion name and intensity before and after What the problem is How they Checked the facts to make sure the fight problem has been identified and rewriting the problem A realistic short-term goal for solving the problem Brainstormed solutions Consideration of pros and cons to compare ideas Description of chosen solution, what was done, and what happened. Whether the goal was reached and if there is a new problem. (ERWS 8)</td>
</tr>
</tbody>
</table>

*Notes:* ERWS = Emotion Regulation Worksheet (Linehan, 2015).
In Personal Settings

As was the case for the previously reviewed modules, participants used the emotion regulation skills in personal and educational settings. Homework prompted participants to provide detailed information about an event or issue that elicited emotions in them (Table 15). Participants demonstrated using the *observing and describing* emotions skill in the homework they submitted. As an example, Participant C wrote “I had an assignment (a poem a partner & I had to present) due by Thursday, I realized how little time we had to complete the assignment thoroughly,” which prompted her to “worry.” She described her interpretation of this writing, “I believed I could do it, but in order to do it well I needed to work twice as hard.” She described changes in her physical experience and body language as “calm on the outside, angsty on the inside…I tried to keep my outside expression cool” and the associated urges she experienced: “I wanted to control the whole project [without] my partner.” She reported the aftereffects of the emotion as “thoughts & behaviors totally directed toward the assignment” (ERWS 4).

Similarly, Participant G reported how she used *opposite action to change* emotions when feeling “anxious” about moving. What prompted her to feel anxious was “having to pick up boxes to pack.” She decided the emotion was justified because “people get anxiety often,” but noted that her response was “too intense” and unjustified in that way. She wrote that she “took 4 breaths in, hold, 4 out, hold” followed by opposite action when “I bought the boxes, calmed down, started packing and felt less anxious.” The aftereffect of this opposite action was that “it calmed me instead of giving into the anxiety” (ERWS 7). These examples both demonstrate how participants were aware of discrete aspects of the emotional experience. The participants also demonstrated the
ability to observe and then accurately and factually describe their experience, reflecting self-awareness.

As teachers

There was evidence from four participants of using skills from the emotion regulation module as educational professionals. Participant F spoke about using emotion regulation in her interaction with her cooperating teacher:

For example, when I was feeling frustrated with the lack of help from my cooperating teacher or EA — they didn’t really give me the answer I needed — I could use the skills. I got to … take a moment and analyze the situation and ask [for] something else … or figure out something else I could do (Participant F, Interview, May 11, 2018).

The participant shared how she used observing and describing emotions by identifying the emotion (“frustration”) and the prompting event (“lack of help from my cooperating teacher or EA”). The participant referred to check the facts (“take a moment and analyze the situation”) and the use of problem solving (“ask [for] something else…or figure out something else I could do”). Though the participant did not refer to this skill explicitly, many of the essential features of skills from the emotion regulation module were apparent in her description.

On her opposite action to change emotions homework, Participant I noted she became “scared [because of a] fire drill at the practicum school on my solo day” (ERWS 7). She wrote that “I justify [the emotion] because I was not sure what to do at that time; I wanted to run out.” She acted opposite to this urge, stating “I stayed in class and tried to be calm” and that “I felt better because the situation ended in the right way.” She also
used *problem solving to change emotions* to help her make a professional decision considering whether to “graduate without [a] teaching license [or] graduate with [a] teaching license” (ERWS 8).

Participant I and K used *problem solving to change emotions* in response to students’ emotional responses, based on the homework sheets they returned. Participant I wrote about how “a student was getting upset [when] I asked [him] to clean up … The student was screaming, yelling and crying … because he needed more time to complete his work” (ERWS 8). Similarly, Participant K used these skills when “a student cried when I left school early, in the classroom … The student would have to go to another classroom where another student has bullied the student before.” These serve as examples of how participants applied the skills they were learning to varied educational challenges.

**For Students**

There was evidence of participants’ ideas for and use of skills from the emotion regulation module with students in the classroom. Participant F provided a reason for using emotion regulation skills with young children:

I think I’m probably going to use [this] a lot with students, especially because teaching early childhood [they] don’t know how to use words compared to act[ing] on their emotions. To help them be more productive … in the classroom (Participant F, Interview, May 11, 2018).

This participant was talking about using *observing and describing emotions* to co-regulate and scaffold her students’ ability to articulate in words, instead of actions, their emotions and needs. This participant referred to children “act[ing] on their emotions” reflecting the concept of an action urge. She implied that her understanding of how
emotions elicit action urges was helpful in teaching young children “to use words” instead of acting on the urge. Teachers of young children must guess at the emotion a child is feeling in order to help them learn the appropriate emotion vocabulary, so that the child can express themselves with words instead of actions to get their needs met. This participant indicated that having this understanding of how emotions work would help her do this, which in turn would “help them be more productive … in the classroom.”

Similarly, Participant K spoke about using emotion regulation skills with a third-grade student:

I had a student [who] got really upset. [He] had an argument with another student over a ruler. [He] pushed desks [and] had to go to the refocus table. [He was] throwing things. Afterward [I] was going through [it with him], “Is this emotion justified? How intense is it for what’s going on?” [I asked him], trying to go through that with him as a way to reflect on what had happened…Usually [I] would have asked him to fill out the form and notify his parent of what was going on and talk about how that’s not an appropriate behavior, but I think this helped him to justify his own emotions. He was able to see that the intensity was not justified, the emotion was but [the] intensity wasn’t appropriate. [This] allowed [him] to see there were other things that would have been more effective. He could have talked to me, “that’s my ruler and has my name on it and X thinks its theirs,” rather than ripping it out of [his] hand and the whole talking back that grew [out of it] (Participant K, Interview, May 19, 2018).

This participant utilized the skills from the emotion regulation module at a more complex level, as is appropriate for an older student, to scaffold the students’ learning. She
scaffolded using *check the facts* (“Is this emotion justified? How intense is it for what’s going on?”). Through the interaction the child “was able to see that … the emotion was [justified], but the intensity wasn’t appropriate.” She also scaffolded the child to use *problem solving* (“[This] allowed [him] to see there were other things that would have been more effective”). This participant noted how her approach was different from what she would have done before learning DBT skills. She said that she would have “asked him to fill out the form” and “talk about how that wasn’t appropriate behavior.” Instead, she used the skills from the DBT emotion regulation module to help the student see for himself how the behavior was unjustified and ineffective and to consider alternatives.

Participant K also spoke about modeling skills use by “letting them know, ‘this is why I’m doing things,’ [using the] same steps that were on the paper” (Interview, May 19, 2018). She said that “processing with them really helped make sense [of what I was doing] to them.” Just as she did with the student whose level of anger and subsequent behavior were unjustified, Participant K used the DBT skills to show her students her thinking, rather than telling them. In this way she described how she modeled skills use. Similarly, Participant D noted, “I like to ask them about feeling and intensity, ‘Why are you upset? Does that need to be?’…[using] observing and describing emotions, just so they know what they’re feeling” (Interview, May 18, 2018). Participant D also provided other suggestions and reasons for using emotion regulation skills use with students:

I want to give them the tools, kind of like you did with us, to evaluate it and understand how they’re feeling… [They can] use opposite action. [I can say to the child], “[that] made you really angry, let’s do opposite action and be really nice. Let’s do opposite action and see what happens” … Asking questions in a simple
way, making sure to check the facts with the kids as well…I think they’re very emotion-based, but if it is more fact, they would think of it differently or have different feelings about it (Participant D, Interview, May 18, 2018).

In addition to scaffolding, these participants use questioning as a way of co-regulating and guiding the student in skills use.

Reflecting on the benefits of students using emotion regulation skills, Participant K said:

Checking the facts and that whole emotion regulation … would solve all of the classroom issues [and]… communication issues [between students]. They’re learning how to … deal with feelings and emotions. A lot [of] times they’re just trying to go through, [they’re] not trying to be malicious. There is a lot of them, so some of them are naturally very mellow, calm [while] others feel more intensely, giving [them the] opportunity to learn that (Participant K, Interview, May 19, 2018).

In this quote, participant K showed how emotion regulation skills are linked to the interpersonal communication skills when she said, “emotion regulation…would solve all the classroom [and]…communication issues.” In order to describe and express their needs, which are the D and E of the objectives effectiveness skills (DEAR), students will need to be able to observe and accurately describe the situation. This includes having the emotional awareness and vocabulary to do so. Participant K indicated this, by stating that observing and describing emotions was necessary for successful interpersonal interactions. In this excerpt participant K also referred to aspects of biosocial theory that underlie the skills from the emotion regulation module, when saying “some of them are
naturally very mellow, calm [while] others feel more intensely.” This notion also reflected a sense of acceptance of the diversity of student tendencies.

In the researcher journal I recorded curricular ideas that participants and I generated for using emotion regulation skills with students:

I ideas for using describing emotions with students including using stories and considering action urges, prompting events and how emotions work to help students understand their emotions better. Also, using this with emotion posters and to better understand student actions (Journal, G3, S5, 4/7/18).

This entry reflects that observing and describing emotions could not only be used to facilitate and scaffold students’ emotional understanding and regulation at times when problems arise but could also be integrated into the curriculum to support students’ understanding of the features of emotions, including action urges, body language and sensations, and emotions’ after effects.

**Distress Tolerance**

The DBT distress tolerance module consists of the acceptance skills, *Reality Acceptance* and *Crisis Survival* (Table 16). These skills acknowledge that life includes pain and distress and are designed to support the acceptance of such experiences (Linehan, 2015). The *Crisis Survival* skills help participants tolerate immediate pain and distress without making the situation worse and are typically taught first in DBT trainings, since participants who have severe issues are in immediate need of these skills (Linehan, 2015). They are straightforward and more applicable to students whose abilities to regulate emotions, including emotional distress, are still developing.
Table 16

**DBT Distress Tolerance Skills, Session 7 and 8**

<table>
<thead>
<tr>
<th>Skill Set</th>
<th>Skills</th>
<th>Skill components or prompts/ Example of practices most participants tried.</th>
</tr>
</thead>
</table>
| Reality Acceptance | radical acceptance turning the mind | Reviewed, but not practiced by participants.  
Worksheet with spaces to provide: Acceptance before & after (0 to 5).  
Observe not accepting.  
Make an inner commitment to accept  
Describe you plan for catching yourself next time (DTWS 10)  
willingness |  
Worksheet with spaces to provide: Acceptance before & after (0 to 5). Willfulness before & after (0 to 5). Describe effective behavior to move forward  
Notice willfulness. Describe how not participating effectively  
Describe how you practiced radically accepting your willfulness  
Make an inner commitment to accept  
Describe what you did that was willing. (DTWS 10)  
Half-smile and willing hands | Half-smiled during my free moments.  
Half-smiled with willing hands while I was listening to music.  
Half-smiled with willing hands when I was irritated.  
Half-smiled in a sitting position.  
Half-smiled when I was walking down the street.  
Half-smiled with another person. (DTWS 11) |  
Crisis Survival Skills | TIPP your body chemistry | tip the Temperature of your face with cold water (to calm down fast)  
Intense exercise (to calm down your body when it is revved up by emotion)  
Paced breathing (pace your breathing by slowing it down)  
Paired muscle relaxation (to calm down by pairing muscle relaxation with breathing out) (DTWS 4*)  
distract with Wise Mind ACCEPTS | Activities  
Comparisons different Emotions  
Push away other Thoughts other Sensations (DTWS 5*)  
self-soothe with the five senses | Vision  
Hearing  
Smell  
Taste  
Touch (DTWS 6*) |

*Notes: DTWS = Distress Tolerance Worksheet (Linehan, 2015). *Worksheets were included in training spiral, but not provided to or completed by students.*
The *Reality Acceptance* skills, designed to “reduce suffering and increase freedom when painful facts cannot be changed immediately, if ever,” are more applicable to challenges teachers might face (Linehan, 2015, p. 417). *Reality Acceptance* skills are more difficult to implement because tolerating or accepting an unethical or objectionable situation may incorrectly be perceived as approval. To allow participants the opportunity to practice and review homework for the *Reality Acceptance* skills, they were covered during the seventh session, ending the series with the *Crisis Survival* skills. Participants provided evidence of using the *Reality Acceptance* skills personally and professionally in homework and interviews and mentioned the benefit of *Crisis Survival* skills for students in participant interviews and as documented in researcher notes from the final session.

**In Personal Settings**

Five participants used *Reality Acceptance* skills as part of their distress tolerance homework. They used *turning the mind* and *willingness*, but not *radical acceptance*. As examples, Participant C used *turning the mind* in an interpersonal situation when “struggling to understand how my friend got back into bad habits…decid[ing] that being gracious with him was better than responding in anger,” also using opposite action from the DBT emotion regulation module. Participant H used *turning the mind* during “class, [to accept] how long it was.” Participant G accepted a situation caused by her own actions, telling herself “that I was going to be late no matter what, [by] reassuring myself that it was not the end of the world, [and] focusing on [the] present moment,” reflecting not only acceptance but also use of the “*What*” skill from the mindfulness module.

Ten participants used the *Reality Acceptance* skills *half-smile* and *willing hands*.

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4 To differentiate between skill sets and skills (see Tables 12 through 15), skill sets are capitalized and italicized, and skills are lower-case and italicized.
as part of the distress tolerance homework, using them in everyday situations. For example, Participant J used them when “the bus was late, and I needed to go to work” and Participant I used them while “waiting in line at the coffee shop [after] waiting for a while” (DTWS 11). Others used them to improve their emotional experience both in situations with others and more generally. For example, Participant L used them when “annoyed by a person.” Participant A used them when “speaking [and] arguing with family.” Participant G used them “when someone ripped my couch” and “I started getting really angry,” and Participant B used them “trying to calm down from daily stress.” Similarly, in the interview, Participant D said:

The half-smiling also worked for me when I was really angry and I was driving to work. I was late because of the shuttle. Half-smiling made me feel silly [and] that changed my mood. When I’m mad and I half-smile it … automatically helps. Even if I wasn’t mad it would really help lighten my mood (Participant D, Interview, May 18, 2018).

Her use of half-smile while driving, an everyday occurrence, to address immediate emotions (“when I’m mad and I half-smile it … automatically helps”) and improve her emotional experience generally (“it would really help lighten my mood”) echoes the ways that participants used *Reality Acceptance* and other skills in everyday situations as part of their homework.

**As Teachers**

In contrast to its absence in personal applications of the *Reality Acceptance* skills, participants identified the *radical acceptance* skill as a way of coping with challenges as a teacher in educational contexts. Three of the four interviewees mentioned *radical*
Acceptance. Participant F spoke about how she would use skills from the DBT distress tolerance module for herself and with students:

I’ll be using [distress tolerance] a lot in the classroom because in the state of the world there are a lot of distressing things, my students and I need ways to cope with it (Participant F, Interview, May 11, 2018).

In her interview Participant A spoke at length about how she might use the radical acceptance to cope with challenges:

Radical acceptance [is challenging], especially if it’s a really tough subject to deal with. I’m trying to think of my students…if one of my students is very abrasive or super disrespectful to me or other students, or if [a] parent was abusive to them, then both [nonjudgmental and radical acceptance] would be difficult to utilize. I think it would be challenging emotionally to accept that. Let’s just say for instance [a] student is being neglected by [a] parent, I would find it emotionally challenging to understand why [the] parent [is] being neglectful and not be judgmental in that situation; that would really test my abilities to be nonjudgmental. [I would want to use radical acceptance or nonjudgmental in that situation], maybe for my own piece of mind, because as a teacher, as a professional, there is only so much I can do. I can follow the policies and procedures laid out by [the] state [or] school, but as an individual [there are] only so many things I can do. Trying to be nonjudgmental and radical acceptance would give [me] peace of mind…[and] would help me not be so crazy about it…[It] would help me not to constantly think about it, [and] help me not to become emotionally invested, because I would have to remember that once I’ve
followed all [the] policies and procedures that’s all I can really do. So, by crazy I mean obsess and ultimately become frustrated.

The participant described how *radical acceptance* is related to *nonjudgmentalness*, and how she could foresee situations as a teacher where she would be challenged to such a degree that radical acceptance would be applicable, and the use of this skill would be extremely challenging. She articulated how radical acceptance is challenging because it is designed to be used to accept situations that are difficult to accept. When pressed to explain why she might use radical acceptance in such a situation, she mentioned that doing so would provide “peace of mind” and stave off rumination (“would help me not constantly think about it”), which in turn would help her avoid “becom[ing] frustrated.”

Participant K also spoke about the challenge of skills from the DBT distress tolerance module:

I guess the ones I found more difficult to apply for me was the distress tolerance…when I’m upset … at that point it’s difficult …when it’s personal to me it’s more difficult and it’s something I have to keep going back to. I can do it better with students, like radical acceptance: “We’re going to accept it!”

( Participant K, Interview, May 19, 2018).

In contrast to Participant A, who found *radical acceptance* difficult because of the types of situations she might use that skill for, Participant K noted the challenge of addressing one’s own distress, once that distress had been established. She articulated that it was easier to radically accept something relating to students (“We’re going to accept it!”).

The participants identified the *radical acceptance* skill as one that was applicable specifically in educational contexts. This reflects the idea that teaching is inherently
challenging. Though pre-service teachers might be able to change challenging situations and the associated emotions with skills from the DBT emotion regulation and interpersonal effectiveness modules, there are some things they cannot change; there are some things that can only be accepted. Situations that are especially challenging to accept may require more than nonjudgmentalness. As the participants identify, radical acceptance is the DBT skill for such situations.

Participant K used turning the mind and willingness for situations related to her role as a teacher. She used turning the mind to help her deal with the uncertainty associated with finding a job:

“[I] noticed myself not accepting that I will have to wait until June to find out if I will have a position with [the district], telling myself there are other options, other things I can do this summer [and] remind[ing] myself of what I will be doing this summer. [My effective behavior was] half-smiling and turning the mind. [Because of willfulness I was] not planning for the summer or getting ready for my teaching license. I signed up for [a] summer course [and] began getting [my] paperwork ready. [I made] a commitment not to get stuck, focusing on what I know… I began planning for the summer (DTWS 10).

She also used willingness to help her get out of the willfulness that resulted from not accepting that she would have to wait to find out about whether she had a job. In the information from her homework, participant K demonstrates willingness by doing something akin to opposite action, signing up for summer classes and filling out paperwork, which was the opposite of her willfulness (“not planning for the summer or getting ready for my teaching license”). This once again reflects how the skills are
integrated and inter-supportive. She also shows self-awareness about her situation and the use of these skills.

As was the case in personal contexts, participants used half-smile and willing hands in everyday classroom life to deal with uncomfortable situations. Participant I used them when “a student wasn’t following my instructions.” Similarly, Participant A indicated these skills would be useful to her as a teacher:

I will use hands out and half-smile [for myself for dealing] with students and especially peers and administration, because it’s not just dealing with students but also dealing with [the] administration at school I think it’ll be really handy

(Participant A, Interview, May 9, 2018).

Participants also spoke about using willing hands and half smile as professionals.

According to researcher notes, Participant D:

Spoke about using willingness and acceptance with a co-worker whose communication style she does not like. She said that she was more willing to get to know her and doing these two things, [willing hands and half smile] had her feel less irritated and better about herself after interactions with the co-worker

(Journal, G3, S8, 5/2/18).

All three of these participants applied half-smile and willing hands in interpersonal situations, where skills from the DBT emotion regulation or interpersonal effectiveness modules might also be applicable, reflecting the reinforcing the integrated nature of DBT skills. All these examples also reflect a range of situations where using Reality Acceptance skills might be helpful in everyday educational contexts. They show that Reality Acceptance skills are versatile and are applicable in diverse situations that might
produce low levels or higher levels of distress.

**For Students**

As noted previously, in contrast to her challenge to use skills from the DBT distress tolerance module for herself as a teacher, participant K noted that using these skills was more unproblematic for her with students, saying “I can do it better with students, like radical acceptance: ‘We’re going to accept it!’” (Interview, May 19, 2018). Similarly, Participant F mentioned that “radical acceptance [is] a good one [for students] to learn, ‘it is what it is, and it’s happening.’ That’s another one they can use … when there’s things they have to do” (Interview, May 11, 2018). She referred to:

*Turning the mind* [and] having the students stop thinking about one thing negatively…moving on and looking at [the] positive … [They can] work towards improving that emotion, like to go from being upset to accepting whatever happened (Participant F, Interview, May 11, 2018).

In the researcher notes from the last session I wrote, “we discussed using the[se] skills with students during conflict… and that if students learned them when they’re young, they’ll just use them when they need them (e.g., ‘Let me just step out for a moment and splash my face with cold water’)” (Journal, G3, S8, May 2, 2018). During this session, the participants articulated that the distress tolerance *Crisis Survival* skills would be beneficial for their students. In the entry I paraphrased a participant, “they’ll just use them when they need them.” This statement implied that supporting students in developing self-awareness through DBT skills would allow them to identify and more effectively get their own needs met.

Subsequent interviews echoed the usefulness of the *Crisis Survival* skills for
students. Participant A noted that “allowing them to get all [their] energy out — they exercise in a sense— it helps them focus” (Interview, May 9, 2018), referring to the intense exercise component of the TIPP skill, Participant D suggested “self-soothing with five senses, using nice smelling things and having things to feel, I think of fidgets, nice things for children to feel” (Interview, May 9, 2018). Similarly, Participant F said, “I would use self-soothe with five senses…Being able to utilize that tool will help them to calm down…when emotions get overwhelming … I would [also] use deep breathing” (Interview, May 11, 2018). These interview excerpts indicate that these participants could imagine considering the Crisis Survival skills in how they structure their lessons with students (“allowing them to get all [their] energy out” to “help them focus”) and how they might set up their classroom (“using nice smelling things and having things to feel”). Participant D also linked the Crisis Survival skills to material she likely heard about in other coursework, saying “I think of fidgets,” which are associated with special education and typically used to meet students’ sensory needs.

The purpose of this training was to support pre-service teachers in using DBT skills both personally and as educational professionals. Although all participants used DBT skills in personal situations, those participants who spent time in classrooms applied skills more often in their teaching role. Participants identified ways that they could use DBT skills as teachers and how their students might benefit from these skills. This evidence shows that DBT skills are applicable in educational settings, though participants who spent more time in the classroom while attending a DBT training appear to be better positioned to apply DBT skills to address the challenges of teaching.
Remember: Use Skills!

As part of the interviews, I asked participants to talk about any skills they found confusing or challenging. Researcher notes also explicitly mentioned, and homework evidence implicitly pointed toward participant challenges. The participants who were interviewed consistently expressed that the skills were clear and easy to understand. However, they did report some training challenges relating to using skills in daily situations and insufficient understanding of the skills. Participant F talked about both the challenge of remembering to use skills and the need to become more familiar with the ideas of mindfulness:

Sometimes it's challenging to remember to just name the feelings and stuff. Like describing and observing—just noticing. Just because I wasn’t used to it. I found myself … not just noticing, but kind of like judging myself too. I think also it was challenging to do the DEAR MAN and such, once again because I’m not used to it. I tried to do it, and I’ll continue to try. I don’t think about using it when it’s happening, I tend to think about it afterwards … as time went on, I notice[d] more. [I] notice[d] emotions more. It is just challenging to just notice and not put judgments…It is much easier to notice judgments than just noticing (Participant F, Interview, May 11, 2018).

Three other participants also mentioned difficulty with remembering to use skills in daily situations. They specifically mentioned this regarding the Obtaining Objectives skills from the DBT interpersonal effectiveness module. Participant D mentioned that “it was hard in the moment to remember” the Obtaining Objectives skills components (Interview, May 18, 2018). Participant F said, “I don’t think about using it when it’s happening, I
tend to think of it afterward” (Interview, May 11, 2018) and participant K said, “I need to practice more and continue going back to remind myself” of the Obtaining Objectives skills (Interview, May 19, 2018).

As was the case for Participant F, Participant A attributed challenge to a lack of familiarity with or exposure to the ideas presented in the DBT training. Participant A said, “as a human being, here in America, we’re taught to be judgmental about others” (Interview, May 9, 2018). Similarly, Participant D said, “I found [Wise Mind] challenging, I hadn’t done something like that, so I needed extra time” (Interview, May 18, 2018). The researcher journal entries also address lack of familiarity. For example, in notes after session three I wrote, “there is some confusion about validation and what is invalid” (Journal, G2, S3, March 21, 2018) and in notes after session six I wrote, “a participant had difficulty differentiating between justified and unjustified” (Journal, G1, S6, April 7, 2018). Similarly, I noted that “less explaining and more acknowledging seems to be a concept that isn’t readily picked up” in an entry after session four (Journal, G2, S4, March 3, 2018).

The challenge with radical acceptance presented in the previous section was not necessarily with the skill itself. Instead, it was with the types of life challenges, precisely the most challenging-to-accept realities, that radical acceptance would be useful. However, completed homework indicated that some participants might also have had an inaccurate understanding of acceptance skills. For example, in homework from the turning the mind skill from the distress tolerance module, one participant noted awareness of not accepting another person when “I observed someone making illogical choices.” However, they suggested using “I commented on my annoyance” as a way to
commit to acceptance, when this may better reflect holding onto “annoyance” and the perspective that the other person’s choices were “illogical” (DTWS 10). Another participant wrote, “[I] reminded him, if I clean there are consequences” as a way to commit to acceptance. Though such a statement may be appropriate in this particular situation, it does not reflect acceptance such as a statement like ‘I may need to clean his room’ or ‘the room may stay dirty’ might. This evidence also supports the notion that some of the skills are so unfamiliar and contrary to the predominant cultural norms of judgment and assumed expectations, that they might be both difficult to understand and to implement.

**Training Feasibility**

The qualitative data also included information related to the feasibility of the DBT training. The theme of time was prominent in the researcher journal data, supported by evidence from interview data. Salient, though not prominent, in the data were mentions of training materials. Although the data were limited, as with participant challenges to training, they provide information that can inform training development and other findings.

**Time**

The theme of time was primarily related to me feeling rushed to cover the designated content and, secondarily, the need for more time to go into depth and provide participants opportunities to practice the taught skills. This theme also included missed time, related to participants’ late arrival and missed sessions. In the following section, I present evidence for these themes followed by solutions noted in the researcher journal or during interviews.
Session content and time

In six of the twenty-four training session entries, specifically after the first, second, third, and sixth sessions, I noted difficulty covering the intended content in the one-hour training session. As examples, I noted that “I felt a little tighter on time, maybe because there were more people” (Journal, G2, S1, March 2, 2018), that “I felt rushed” (Journal, G1, S2, March 3, 2018), and “as usual I felt a bit rushed, I think it was more pronounced because participants were more open to talk and then time gets tight” (Journal, G2, S6, April 13, 2018). In entries from seven other sessions, I indicated my ongoing concern with being able to cover the designated content in the specified time. I noted “we started a little late and time was tight for this session” (Journal, G1, S2, March 3, 2018) and “I rushed through radical acceptance, but then was done 6 minutes early” (Journal G1, S7, April 14, 2018).

During the post-training interviews, participants talked about their perceptions relating to the amount of content covered during training sessions. Three participants suggested extending the training time. Of these, two suggested extending the training by half an hour. Participant K suggested having sessions twice a week, since “it was a lot of info to go through in one session,” saying that it is “a lot of information and could be [a] separate course by itself” (Interview, May 19, 2018). Solutions for this from the researcher notes, written after the first three sessions, revolved around doubling the number of sessions. I wrote, “with an intervention/waitlist control, a 16-week course would make perfect sense” (Journal, G1, S2, March 3, 2018) and “it’s clear to me that covering less with more sessions would be preferable” (Journal, G2, S3, March 21, 2018). After session five I noted that “it would have been nice to take more time
generally” (Journal, G2, S5, April 6, 2018).

**Depth and practice**

A related theme was about having the time to go into depth with the DBT skills being taught. The focus of these researcher comments revolved around participants having the time to understand the content in more depth and providing more opportunities for practice. In reflections from session two I noted the need for depth writing, “breaking homework up would have been better so participants understand them better” (Journal, G1, S2, February 2, 2018). For session three I wrote that “I ran a little tight and didn’t do justice to validation” (Journal, G3, S3, March 23, 2018), noting the relationship between having enough time and providing the depth needed. After session five I noted that “some people just need more time with the subject matter” (Journal, G2, S5, April 6, 2018). Participant K’s suggestion “[to] go a little slower and talk about them [and have time to] ask questions and kind of go through [them]” (Interview, May 19, 2018), Participant F’s comment, “I think it would be nice to have the trainings longer… so we could …go into more detail…[and have] enough time to go over homework and not feel rushed at all” (Interview, May 11, 2018). Participant F’s reason for extending sessions was “so we can talk about things more and go into detail…[and to have the] time to go over homework” for the coming week (Interview, May 11, 2018). This all reflected the sentiment that having the time to go into more depth with skills was desirable.

Similarly, Participant A suggested “extending the hour period to an hour and half” so there could be “one [homework] example during the session time, while talking about [the skills, and to] think about a situation where [we] could utilize them” (Interview, May 9, 2018). Participant A not only indicated the need for more depth but also pointed to the
need for more practice opportunities by considering an example before trying to use the
skills outside of training sessions. Participant D echoed the sentiment that more practice
time was needed saying, “maybe with DEAR MAN and GIVE and FAST and TIPP,
maybe those ones need a little extra time…they are hard to remember with just having
one day of it” (Interview, May 18, 2018). The researcher journal also reflected this
notion. I wrote that either “less needs to be covered in 8 training sessions or the time
needs to be doubled so more practice (both in and between sessions) can be incorporated”
(Journal, G2, S8, April 27, 2018). I noted this idea of slowing down to ensure depth of
coverage in two journal entries toward the beginning and end of the training. I wrote:

I had a hard time validating today, especially with a couple of participants who
seemed to have a harder time grasping the concepts. Again, slowing down the
speed of the delivery would help with this (Journal, G2, S5, April 6, 2018).

Similarly, I noted, “slowing down the pace of the training would serve people better
generally, but also ensure that those that need more practice have the opportunity to get
[it]” (Journal, G2, S8, April 27, 18). This evidence speaks against the fast pace of the
condensed training.

The issue of opportunities to practice mindfulness was evident in researcher notes
and was brought up in one interview. I wrote, “as I recall Linehan suggested ending with
a mindfulness activity when there are none in the activity [being presented]. I like the
idea of this (beginning and ending with a mindfulness activity), but it requires more time”
(Journal, G1, S5, March 31, 2018). This sentiment relates to the challenge of
unfamiliarity with the mindfulness paradigm as previously described. The need for
practice, specifically mindfulness practice, was also articulated by Participant A in the
follow-up interview,

I find mindfulness beneficial for myself. I would want to share [it] with students, but [I] want more mastery before I teach students. I really don’t feel comfortable to teach the tools… You have to be mindful to proceed with any of the other skills, I’d like to have a little more mastery before I teach it to my kids… You have to be mindful to do any of the other strategies because you have to be able to be in the present moment. You have to be able to really focus on how you are feeling emotionally in that moment and then proceed with the other steps. I think sometimes I find it a challenge myself to really pinpoint what is making me upset or making me unhappy, so by mastery I mean being able to focus on one specific thing that is causing me to have an emotion, and to actually kind of quiet my mind enough to focus on why I might be feeling a certain way (Participant A, Interview, May 9, 2018).

Since the mindfulness skills form the foundation for all other skills, the need for more opportunities to practice mindfulness is especially significant.

Researcher reflections on how to address these issues also revolved around increasing the number of sessions. I noted that “with a more spread out series of sessions (e.g., 16) having mindfulness activities interspersed would be helpful,” referring to the issue of mindfulness practice (Journal, G1, S5, March 31, 2018). I also noted a need to extend the Obtaining Objectives session specifically mentioned by participants, writing “it would be great to have two sessions for DEAR MAN and GIVE FAST with both sessions focusing on prioritizing goals” (Journal, G2, S4, March 30, 2018), reflecting the idea of increasing the time available for covering the information. In one entry I also
considered decreasing the amount of information covered in sessions or the training as a whole, writing that “[I am] not sure if all the pieces (specifically the overview I [in] the lesson plan and what makes it hard to regulate emotions) need to be included” (Journal, G2, S5, April 6, 2018). Although I did not identify a particular best solution in the journal, the need to balance the time for covering and practicing concepts with the amount of information covered in sessions and in training generally was evident in the data.

Arriving late

The impact of participants arriving late was notable in journal entries, specifically how arriving late caused participants to miss the mindfulness practice. I noted that “having two people come in late, they missed the mindfulness opening exercise” (Journal, G1, S2, March 3, 2018) and that “participants who are regularly late …don’t get the mindfulness practices, which are so important” (Journal, G1, S6, April 7, 2018). Although participants did not identify this relationship between arriving late and insufficient mindfulness practice, a relationship may exist, again pointing to ensuring sufficient opportunities for mindfulness practice throughout training sessions. In line with this, I noted one solution to ensuring participants have sufficient mindfulness practice, writing that “maybe the how and what can be incorporated [into] each session…keep[ing] mindfulness at the forefront of the training” (Journal, G1, S5, March 31, 2018).

Missed sessions

As is the case with any training that spans several weeks, I expected participants to miss some session because of illness or other unpredictable events. As previously described, of the eleven participants who completed the training, all attended at least five
of the eight sessions. Specifically, two participants did not miss any sessions and seven participants missed one session. Despite participants’ high attendance rates, missed sessions did pose an issue based on researcher notes, with some support from post-training interviews.

For one of the groups, two participants missed the first session. Because the participants still wished to take part in the study, I conducted a makeup session before the second session for that group. In response to some participants missing the second session I noted in the researcher journal that “I’m not sure if [I] should do makeup sessions[s] or not” and “if the two who missed it don’t have a makeup session then they’ll be out of the loop at the next training session” (Journal, G1, S3, March 10, 2018).

Researcher notes from sessions where participants had missed the previous session indicated missed sessions were problematic for facilitation. I noted that “it was tricky to catch them up a little bit, [or] at least give them context, without doing the training all over again” (Journal, G3, S3, March 23, 2018) and that “I found it a little more difficult to go over the homework with someone who had missed a session” (Journal, G1, S4, March 24, 2018). Missed sessions required me to adjust how I delivered the content. In another entry, I noted that “one of them had tried the skill using the worksheet, so we walked through her example and did the same thing orally with another participant” (Journal, G3, S5, April 4, 2018) when participants had missed a previous session.

For one training session only one participant arrived, and in another case, the only participant on time for the session had not attended the previous session. Notes from the researcher journal indicated that this also complicated instruction. I wrote that “I noticed it was harder to give feedback and guide the session [with one person],” adding that “the
participant who was on time had missed most of the previous session, so I did a bit of instruction in a dialogue kind of way and incorporated the other two participants when they arrived” (Journal, G3, S4, March 28, 2018). Participant D and K also mentioned this theme in the post-training interviews. Participant D stated that “I did miss one class…I wish I could have gone to another class” (Interview, May 18, 2018) and participant K said, “I remember the week I wasn’t there, that was confusing” (Interview, May 19, 2018), both indicating that missed content posed a problem for participants as well.

In researcher notes, I considered how to address the issue of missed sessions. I decided to “tell them which pages in the spiral they can review and what pages are homework” by e-mail for missed training sessions (Journal, G3, S3, March 23, 2018). I also considered “creating a structure to deal with missing sessions, especially if this is incorporated into class…e.g., if you miss a session you meet with someone to go over your homework and have them ‘teach’ the new content to you” as a solution for future trainings (Journal, G3, S5, April 4, 2018).

Altogether, evidence relating to training feasibility highlights the importance of having sufficient time to cover the course material with depth and to provide sufficient mindfulness and skills practice, as well as the need for a mechanism for ensuring that all participants receive instruction on all the skills.

**Training Materials**

Both the researcher journal and interviews addressed aspects of the training format and materials. Specifically, there was mention of the training spiral and the daily survey. Three participants mentioned the training materials, with a focus on the training spiral, which contained handouts and worksheets of the DBT skills covered during the
training. Participant F articulated the value of the spiral as a reference for future use saying, “I liked that we got a spiral to use forever,” as did Participant A saying, “I liked the notebook that was given, because I can definitely use it as a resource.” Similarly, Participant K stated:

I am still using the … book, I’m re-reading it, [it is] more beneficial now that I’m not in school [because I] have more time to read. Then [I] was just picking this one, [saying] ‘I’m going to do [this one]’ [or] ‘I didn’t use this one, I will use this one today’…Like yesterday I was like ‘oh I need to keep the blue book with me’…[I] wish I had the book with me that day, because I couldn’t remember everything…I need the book with me…because the book was really helpful and if I didn’t have [the] book [or] piece of paper with me I would forget to even do it…I had to carry the paper with me (Participant K, Interview, May 19, 2018).

This excerpt indicates that the spiral, as well as the weekly diary card (“piece of paper”), served as a reminder to use skills for participant K.

I also made researcher notes about the value of the spiral. I wrote that “I felt like it was a lot of information, but the spiral also has a lot of guidance” echoing the sentiment that the spiral was a resource the participants could refer to (Journal, G1, S6, 4/7/18). I also considered other materials to “support participant skills use in daily life (“maybe three ‘coins’ with the three ‘How’ and three ‘What’ skills on each side”) (Journal, G2, S8, April 27, 2018). This evidence, coupled with the findings related to the challenge of remembering to use skills in everyday life, point to the possibility of using materials as a reminder mechanism for skills use.

Several participants also mentioned the daily survey. Notes in the researcher
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journal indicated that two participants in one group and one participant in another group found the daily survey useful. I noted that “one participant mentioned she looks forward to completing the daily survey” (Journal, G1, S1, February 28, 2018) and:

One participant said she looks forward to the daily survey because it is a regular thing that she can orient around…she also said she notices when she’s had less anxiety [because of the survey]…another participant mentioned that doing the survey he becomes more aware of rough or wacky days and more even days (Journal, G2, S2, March 9, 2018).

Participant A also talked about the daily survey during the interview:

Another thing I liked that we did was the daily surveys. At first, I was like “oh my gosh, [I] have to do this every day, [it] is going to drive me nuts.” Then [I] set a timer, so [it] kept me on track. [It] really helped me keep track of how I was doing. I liked that I could do it on the phone...especially during times right before I had a test or had really challenging homework, I was able to study better afterward. [The survey] helped me not feel so stressed out. I need to notice how I’m feeling, it helped me to check in on myself (Participant A, Interview, May 9, 2018).

In a transcription memo, I noted my surprise about this, writing “that the participant looked forward to filling out the survey was contrary to what I would have expected — that it would be a chore or a burden” (May 8, 2018). Based on the limited evidence, it appears that the participants considered the survey part of the training, not only a form of data collection.

The themes from the qualitative data show that participants used the full range of
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DBT skills in a variety of personal and educational contexts. They used skills to improve their emotional experience and to navigate challenging situations. They noted that remembering to use skills in daily activities was at times challenging and that some skills were difficult because they were unfamiliar. Evidence, especially from researcher notes, indicated that the training covered too much information with insufficient depth and opportunities for practice. Despite this, participants appeared to find benefit from the training, as is evidenced by their regular attendance and from what they said in interviews. Participant D said, “I feel like I’ve experienced my mind being more open” (Interview, May 18, 2018), Participant A said, “I learned a lot [and] I found it to be very effective an efficient” (Interview, May 9, 2018), Participant F said, “it was very informative …I’m glad I have the skills for myself and the classroom later” (Interview, May 11, 2018), and Participant K said, “I had a really positive experience; I felt it was beneficial to me being in the classroom and in person life, just thank you, it was really helpful, and it’s definitely something I’m going to continue to use” (Interview, May 19, 2018). Cumulatively, the findings from this study indicate that this mindfulness training, based on DBT skills, was feasible and participants found what they learned to be useful in their lives and as future teachers.
CHAPTER 6: DISCUSSION

This study examined the effects of a mindfulness training with pre-service teachers using skills from Dialectical Behavior Therapy (DBT). I used a multiple baseline (MB) single-case experimental design (SCED) and gathered intensive longitudinal daily diary data for 12 participants, 11 of which completed the full 81-day study. The study set out to address two research questions: (1) Did a mindfulness training using select DBT skills result in increased mindfulness and well-being in pre-service teachers? (2) How did pre-service teachers develop, interact with and use DBT skills during training delivery?

Quantitative results from this study provide preliminary evidence that participation in the DBT skills training had a short-term effect on pre-service teachers’ reported mindfulness and positive affect. Qualitative results indicate that pre-service teachers made use of DBT skills both in their personal lives and as educational professionals. The findings from this study add to the literature on how mindfulness activities translate into changes in participant mindfulness and well-being.

Limitations

This study had several limitations. The number of participants in this study was small and the participants came from a self-selected, convenience sample. For this reason, the findings from this study cannot be generalized to the broader population. Results from visual analysis indicate that, overall, the baseline phase was not long enough to establish a stable pattern before training commenced. The length of the baseline (6 to 17 days), the delay between group start days (6 days), and the length of the post-training phase (8 to 18 days) were proportionally much shorter (11% to 32%) than the duration of the training phase (54 to 57 days). These durations approximate the
amount of data available to estimate the slope and mean of each study phase, making the baseline and post-training estimates less accurate. As a result, the estimated mean and slope of the baseline and post-training phases may have been inaccurate.

There is reason to believe that confounding variables were not sufficiently controlled for because the training phases for all groups aligned with the natural progression of the expected educational demands of the semester. It is reasonable to assume that the educational demands on the student participants, as well as the associated stress, were low during the beginning of the semester, increased as the semester progressed, and then decreased again as the semester drew to a close. In the context of a semester that spanned 17 weeks, a lag of six days between groups meant that all participants’ baseline data were collected during the first third of the semester, when educational demands and stress were anticipated to be low, all participants’ training phase data were collected during the time in the semester when educational demands and stress were increasing, and all participants post-training data were collected during the last third of the semester, when educational demands and stress were decreasing. Thus, educational demands and stress were not controlled for and could have canceled out or influenced any phase level training effects.

Issues of measurement were also identified in this study. It is notable that, unlike Moore and colleagues (2016) who found the CAMS to have strong internal consistency in a similar application, the CAMS items did not correlate strongly in this study and were excluded from analysis. Additionally, based on the visual analysis, changes in an outcome that might be related to the training often increased or decreased depending on the participant. Although this could indicate that there was no effect of the training, it
may also indicate that these measures did not measure the same thing over time. For example, it is possible that participants lower in actual (not measured) mindfulness provided higher scores because they were less aware of their emotional experience and, as a result of mindfulness training, provided lower mindfulness scores because of higher levels of self-awareness. In contrast, participants that had higher levels of actual mindfulness may have provided more accurate scores as their mindfulness developed.

Limitations relating to the qualitative portions of the study revolved around having the data necessary to answer the research questions. The reflective researcher journal included few entries about what actually occurred during the training sessions and thus provided limited information regarding how participants interacted with and used the DBT skills during training delivery. The structure of the researcher journal did not produce the information needed to address the research questions. Additionally, since I had just finished facilitating a one-hour training session, I may not have recalled the salient details from the training session accurately. Although some of the DBT worksheets provided valuable information about how participants used DBT skills, other worksheets provided no contextual information (e.g., the “what” and “how” skills of mindfulness). Although the post-training interviews provided information about how participants reported that they used and understood skills, the interviews captured this information after the fact, providing limited information about how their skills use changed across the study. Lastly, four of the 11 participants who completed the study volunteered to be interviewed resulting in a small and self-selected sub-sample.

**Effectiveness and Feasibility of DBT Skills Training**

Results from this study indicate that mindfulness trainings for pre-service teachers
using skills from DBT show promise as an alternative mindfulness-based training for teacher populations. Participant reports of higher levels of mindfulness the evening after, and positive affect lasting through the next evening, indicate short-term effects of training. Results from qualitative analysis indicate that participants found the training useful and used skills in a variety of settings for personal and professional purposes.

Effects of Training

Results from MLM show that participants reported higher levels of mindfulness and positive affect on evenings after they had attended a training session, with higher positive affect extending to the next evening. This points to an immediate and short-term effect of participation in the DBT skills training. Specifically in the case of mindfulness, this effect could be a result of the training experience itself. It is possible that, because participants engaged in mindfulness during the session and found the training sessions enjoyable, they provided higher ratings of mindfulness and positive affect on evenings after the training than on non-training days. However, that participants reported increases in positive affect through the evening indicates that the training influenced participants self-reported positive affect over time.

That participants did not report decreases in anxiety or emotional distress supports this conclusion since increases in mindfulness and positive affect on any given day would not necessarily displace the experience of anxiety or emotional distress on that same day. Proximal effects of mindfulness, independent of long-term effects, have previously been identified in the mindfulness literature. For example, Lemberger-Truelove and colleagues (2018) found young children’s acceptance was higher immediately after participating in an age-appropriate mindfulness intervention than on days when they did not attend, based
on observational data, without finding training level effects. Relatedly, Lueke and Gibson (2015) found that participants’ implicit associations were weaker compared to the control group after listening to a 10-minute guided meditation, though they did not gather data to determine if there were any long-term effects of meditation. These studies indicate that mindfulness activities may have immediate or short-term effects independent of long term, or distal effects.

Most teacher mindfulness training studies do not include intensive longitudinal data that would allow identification of such proximal effects. Findings from most mindfulness studies tend to focus on more distal, long-term effects. This leaves questions regarding the frequency, repetition, and duration of mindfulness activities necessary to produce long term and distal effects. Mindfulness theory, as well as theoretical and empirical evidence from studies on cognition, suggests that proximal effects, with repetition, would produce distal effects through automaticity and stronger neural associations that would become more stable over time (Garland & Gaylord, 2009; Shell et al., 2010).

Additionally, the reason intensive longitudinal self-report measures are considered more accurate than pre-post long scales is because they have lower levels of retrospective bias (Shiffman et al., 2008; Smith, 2012). This same feature may have resulted in non-significant trends in daily diary data. With the daily diary survey, participants reflected on their day, not considering how much they knew about mindfulness and their experience in training as a whole. In contrast, participant completion of a pre-post assessment of a long version of the same measure based on their experience of the previous two weeks would likely reflect their perception of the
training’s impact on their mindfulness and well-being. Thus, if participants had completed a more extended survey, the levels of post-training self-reported mindfulness and well-being might have shown a longer-term training effect, which daily diary data would not pick up. Since most mindfulness studies use long versions of outcome measures, which are more likely to find training effects, the meaning of the proximal effects on mindfulness and positive affect identified in this study are difficult to integrate into the greater literature base of teacher mindfulness training studies.

This study found no differences in outcomes between training phases. Issues with experimental control and changes in the training might explain these findings. As described in the limitations section, it is possible the MB SCED was not effective in controlling an influential confounding variable because of the limited lag between groups. This may have obliterated any phase effects of the DBT training on participants well-being overall. The quantitative and qualitative data provided evidence that the training did not provide participants with the frequency, repetition, and duration needed to translate the short-term effects of training into long-term effects, which may be related to the changes I made to the typical DBT skills format.

As the previously presented literature indicates, the experience of stress is related to teacher well-being (Kyriacou, 1987). As described in the limitations section above, the phases of the study coincided with an expected trajectory of educational demands and stress. Though mindfulness trainings have been found to mitigate the relationship between stress and teacher well-being (Kerr et al., 2017; Meiklejohn et al., 2012; Roeser et al., 2012), there are reasons to believe that it cannot wholly buffer this relationship. The experience of stress is not only related to abstract psychological and emotional
aspects of a situation (e.g., interpretation, links to previous experiences) that might be directly addressed by skills from the DBT training, but the experience of stress is also related to concrete demands on students (e.g., hours of work/class/homework, number of assignments due, hours of sleep, illness) that DBT skills cannot directly address. Thus, it is reasonable to believe that educational demands and associated changes in stress across the semester were a confounding variable that this study did not effectively control. Since I did not collect data on the educational demands or perceived stress of participants throughout the semester, there was no way to control for its influence statistically.

Both quantitative and qualitative findings indicate that participants needed more practice opportunities as part of the DBT training. The quantitative finding that training attendance was associated with elevated positive affect in participants through the evening after a training day, but not past that day, point to the need for possible adjustments. As one participant suggested, trainings could be conducted twice a week, providing the formal instruction and discussion that, in this study, was associated with increased positive affect across two days. This could sustain the effect of training sessions better across the duration of training. In therapeutic applications of DBT, clients attend a training session and a therapy session each week, providing more sustained support than what was provided in this training. Having two training sessions a week would provide such sustained support to participants. Additionally, therapeutic applications provide clients with access to a therapist for coaching calls between training sessions. Jennings and colleagues (2013) used a similar approach when they provided participants with phone mentoring between mindfulness training sessions. A combination of more frequent sessions and additional support between sessions might better translate
short-term effects into long-term effects.

The qualitative findings, specifically the findings related to participants' challenges with skills use, time, and training materials, also support the notion that participants needed more practice opportunities. The qualitative evidence indicates that participants did practice the skills they learned between training sessions, yet they were challenged with remembering to use skills in their daily lives, likely resulting in fewer incidents of skills practice. Another challenge was related to the lack of familiarity with the principles and skills of mindfulness. Although qualitative findings indicate that the homework pages and training book provided participants with guidance on how to use skills and that the daily surveys served as reminder as well, the data also indicates that the materials were not easily accessible in day to day interactions, and by design, the survey did not serve as a reminder throughout the day. Developing this familiarity appears to require either more prolonged or more frequent exposure to the principles and skills of mindfulness.

The training sessions for this study were shorter and training groups were smaller than typical DBT skills programs and modules. These changes to the recommended DBT skills training made this new application feasible. Shorter and fewer sessions minimized the level of commitment required of pre-service teachers, smaller training groups allowed for shorter sessions, and fewer, more condensed sessions were necessary to restrict the length of the study to one semester. Each of these changes relates to the identified qualitative themes and may illuminate why minimal longitudinal effects of training were found. Ironically, it is unclear whether it was necessary to have fewer and shorter training sessions in order to minimize the level of commitment required of pre-service teachers.
All but one participant completed the study and all other participants attended at least five training sessions, with most participants missing only one or two training sessions. The compensation did not appear to be the sole motivator for participation as only 7 of the 11 participants retrieved their gift card. This evidence indicates that participants were motivated to attend the training for other reasons.

The shorter training sessions were associated with feeling rushed at times and generally preoccupied with having enough time to cover the designated content. According to participants and the facilitator journal entries, the training sessions did not provide enough depth and practice opportunities. Additionally, because the training groups were small, when participants arrived late or missed a training session the training format was disrupted because there were not enough participants to discuss homework or present skills in dialogue. With fewer sessions (8 instead of the typical 16 to 24), at least twice as much content was covered in each training session. Typically, DBT trainings cycle through the content between two and four times, and the DBT mindfulness skills are presented once between each of the other three skills modules. This is because the mindfulness skills are the foundation for skills in the other DBT modules (Linehan, 2015). The study’s condensed format meant that each skill was presented only once, and the mindfulness skills were not reinforced systematically, as is typical in DBT trainings.

The need for more practice, especially of mindfulness skills, was salient in the data. Because the core mindfulness skills serve as a foundation for all other skills, insufficient mindfulness practice may make the skills less accessible to the participant. Similarly, participants who arrived late or missed a training session did not get instruction on some skills at all, whereas in a training session with multiple repetitions of each
module the training would have not only provided additional repetition but also ensured no skills were completely missed by a participant. All of these findings indicate there likely were insufficient practice opportunities, both within and between sessions, to support the development of automaticity with DBT skills in participants. This might explain the limited longitudinal effects on mindfulness and well-being, as well as the lack of phase level training effects.

**DBT Skills in Educational Contexts**

The qualitative results from this study indicate that participants reported using DBT skills in a range of settings to improve their experience and address personal and educational challenges. Evidence from participants also indicates that DBT skills are applicable to situations common in educational contexts, both for use by teachers and for use with students.

**As Teachers**

In the qualitative analysis I made a distinction between participants use of skills generally and the use of skills in educational settings. However, the personal and educational situations in which participants reported or suggested using skills have more in common than what differentiates them, specifically to influence emotions and navigate challenging situations. It is notable that participants used skills in educational contexts even though the training was minimally modified to encourage this, though this was predicated on the opportunity to do so (i.e., extended time in a classroom while attending training). Unlike many mindfulness trainings for teachers, DBT skills training includes both acceptance and change skills that are especially applicable in educational settings.
Acceptance skills

Mindfulness, at its core, revolves around acceptance. The capacity to bring and keep attention on the present moment requires a level of acceptance of what is happening right now, and this, coupled with nonjudgment, requires a teacher to let go of expectations and refrain from evaluating others as a result. The DBT skills from the mindfulness module provides a framework for what and how to be mindful. However, the DBT skills from the distress tolerance module provide more targeted skills for extremely challenging and arousing situations. Findings in this study indicate that participants used these acceptance skills in situations that were mildly aversive (e.g., bored in line, difficulty falling asleep) and in situations that were more difficult to accept (e.g., child having an accident in public, hearing parents talk about their own and their child’s substance use, parents missing parent-teacher conferences). Participants could also imagine using skills from distress tolerance in educational situations that might be extremely challenging to accept (e.g., child abuse). Notable is that use of the DBT acceptance skills in educational contexts tended to relate to more difficult-to-accept situations, making a DBT skills training especially applicable for teacher populations, including pre-service teachers.

Change skills

Unlike most mindfulness trainings, this DBT skills training included change skills designed to increase positive emotions, decrease negative emotions, and support interpersonal interactions to get what one wants for oneself and, in the case of a teacher, for one’s students. Frenzel (2014) reviewed the types of emotions teachers experience in the course of teaching, identifying both positive (i.e., enjoyment, pride), negative (i.e., anger,
anxiety, shame/guilt, boredom and pity), and related constructs (i.e., burnout, emotional labor, enthusiasm, achievement goals) in the literature. As noted, participants used the DBT skills from the emotion regulation module to increase positive emotions and either directly address negative emotions or the situations that elicited them. Emotion regulation is closely related to emotional labor, or the work of managing emotions and their appropriate expression (Frenzel, 2014). It is reasonable to assume that pre-service teachers, like in-service teachers, engage in a high level of emotional labor, which researchers have associated with burnout (Frenzel, 2014). Thus, having strategies to manage such emotions is essential to the well-being and retention of individuals who teach. This study provides some evidence that pre-service teachers will use DBT skills as a way to manage such emotions.

As was mentioned by the participants, teaching involves continuous interactions with others. Primary among these are interactions with students, but they also include interactions with peers, supervisors, and parents, which can present a variety of challenges. Participants reported using all the DBT skills to support these interactions, including the skills from the interpersonal effectiveness module. Participants mentioned using skills to cope with and address student misbehavior, one of the primary sources of negative emotions in teachers (Frenzel, 2014). Similarly, participants suggested using validation and relationship effectiveness (GIVE) skills to foster supportive relationships with students. Having high-quality relationships with students has been associated with more positive emotional experiences in teachers (Frenzel, 2015). These examples show how the DBT change skills provide the types of skills that would be most applicable in educational contexts.
With Students

This study provides some evidence that the structure of DBT skills made them useful for teacher-student co-regulation and the development of student self-regulation. Young and elementary age children are developing their attentional, social, and emotional capacities. As such, they tend to have more difficulty with attending to a situation and taking into account relevant information and are less effective at regulating emotions and managing interpersonal interactions. Based on this study, participants scaffolded their students’ use of DBT skills by asking simple questions and modeling use of DBT skills (e.g., think alouds). They suggested using the core mindfulness skills to support students’ development of attention. This included incorporating opportunities for students to practice attending to the present moment through activities integrated into the curriculum (e.g., read aloud, preparing for a writing assignment).

Participants also talked about supporting students in discerning what is important to attend to, whether in academic (e.g., paying attention to instruction rather than a peer), intrapersonal (e.g., noting physical sensations to identify emotions and action urges) or interpersonal (e.g., distinguishing the facts from the interpretation) situations. Participants suggested using their knowledge of the emotion regulation skills to identify student emotions, providing them with appropriate language as well as developing students’ understandings of how emotions work.

Participants suggested the value of the interpersonal effectiveness skills in peer interactions as a way of supporting social development. Acknowledging that school life can be challenging in a variety of ways for some students and that children have more difficulty regulating emotions in such situations. Participants also suggested using the
crisis survival skills with students. These auxiliary skills (i.e., attentional, emotional, social), which are essential to student and teacher success, are often not taught systematically. The evidence from this study suggests that a DBT skills training that incorporates skills use for the teacher, as well as linked co-regulatory and student self-regulatory skills, may be a way to do so systematically with pre-service teachers.

**Advantages of DBT Skills Training**

DBT skills training has several advantages over typical, meditation-based mindfulness trainings. The informal nature of DBT skills makes it easier for busy pre-service teachers to practice skills. DBT skills training not only includes acceptance and change skills but does so in an intentional, integrated fashion that makes skills mutually reinforcing. The structure of DBT skills could support the development of teacher self-regulation, teacher-student co-regulation, and student-self regulation. A previous section has already covered the latter two advantages. However, the informal nature of DBT skills training, in contrast to the formal meditation-based training format most common in teacher mindfulness applications, has not yet been considered in this discussion.

DBT skills training may be advantageous with pre-service teachers because of the informal nature of skills practice. Informal skills use does not require self-discipline or additional time and, since DBT skills are designed for use in daily activities, this approach increases transfer to personal and classroom situations that arise in daily life. Relatedly, the challenges identified by participants in this DBT skills training may be easier to address than those commonly identified in meditation-based trainings with teacher populations.

The primary challenge identified in this DBT skills training was participants
remembering to use skills in daily life. In contrast, the primary challenge identified in meditation-based trainings was getting participants to do the formal meditation practice (Miller & Nozwana, 2002; Poulin, 2009; Reiser & McCarthy, 2018; Schussler et al., 2016; Singh et al., 2013; Solloway, 1999). To establish the type of independent daily meditation practice typical to most teacher mindfulness trainings, training participants must designate time and have sufficient self-discipline to engage in daily practice. Doing so is especially challenging at times of high stress, which is precisely the time when mindfulness is most needed. In line with this, Poulin (2009) found that pre-service teachers were most challenged completing the daily 15-minute meditation practice during their practicum experience when the demands on their time and the level of stress were the highest. In this study, there is evidence that the DBT skills were an asset to participants specifically during their practicum experiences, as this time provided more opportunities for using DBT skills.

Other studies also indicate that informal practices may be more accessible to teachers. Winzelberg and Luskin (1999) found that four weeks after the end of their meditation-based teacher training, which included some informal practices, half of the participants were no longer meditating but were still using informal practices. Flook and colleagues (2013) reported that participants used informal practices slightly more often and more reliably than formal practices. Burrows (2015) used informal practices with teachers because they are not as time intensive as meditation. These findings, coupled with participants’ use of DBT skills in this study, reflects the notion that informal practices may be more accessible to busy populations, like pre- and in- teachers, than trainings that rely on formal meditation practice.
Structures that might promote self-discipline to make time for and maintain an independent meditation practice are more difficult to identify and implement than structures to remind participants to use informal practices. This is in part because the meditation practice is to be independent. Though producing time for teachers to engage in meditation in their school day might serve as a structure, doing this work represents large resource allocation (i.e., 15 minutes x 5 days a week x each participating teacher). In contrast, there are many natural and low resource ways to remind participants to use informal practices in daily life. As examples, Flook and colleagues (2013) included activities that teachers integrated into their daily routines and instruction, and Harris and colleagues (2016) provided participants with cards that included ways to incorporate the taught strategies into the school day.

Similarly, in this study participants mentioned structures inherent to the training that reminded them to use DBT skills. They specifically mentioned that the DBT skills log, the daily diary survey, and the training manual served as reminders. These and other formal structures are simple and easy to implement and can function as reminders to use informal mindfulness skills. Lastly, as discussed more extensively in the literature review, the short informal nature of DBT skills and the inclusion of distress tolerance skills may pose a decreased risk of adverse effects (Lindahl et al, 2017). Combined, these features may make DBT skills training a feasible alternative to meditation-based mindfulness trainings, specifically with teacher populations.

**Future Directions**

Future directions in research fall into two categories: methods and analysis, and training development. Future research on study methods and analysis should focus on
experimental, longitudinal designs that allow for the examination of how short-term effects translate into long-term effects of mindfulness, as well as the interaction between outcome and contextual variables. DBT skills training development should focus on increasing participant practice to develop automaticity of skills and extending the DBT skills to better support teachers and students in educational settings.

**Method and Analysis**

Future studies exploring the efficacy of DBT skills training will want to include research designs that allow examination of short-term and long-term effects of training while ensuring confounding influences of educational demands and stress, as well as other possible contextual variables, are controlled. This can be done either by collecting data on such influences and controlling for them statistically or by including a control group in the study design. Researchers should include measures representing contextual and training features that might influence the effectiveness of mindfulness trainings. The inclusion of other contextual variables, such as educational demands or perceived stress, would allow researchers to include them in models to develop theoretical understandings of how mindfulness skills translate into mindfulness and well-being. Studies that do not include intensive longitudinal data cannot examine how short-term influences of mindfulness training translate into long-term effects.

Including multiple mode and trait longitudinal data components at varying time intervals would allow researchers to develop a better understanding of how short-term effects of training relate and translate into distal and long-term effects. Such studies could consider how outcome variables interact with one another and the training. I am planning such a nuanced examination of this study data, which will help the field better
understand how participants’ mindfulness and emotional experiences function over time, including whether the short-term effects of mindfulness and positive affect found in this study relate to other outcomes. For these reasons, future training studies should consider including a control group, gathering longitudinal data, and including variables that allow for the consideration of contextual demands and training influences.

Future qualitative studies should establish a way to gather information about how participants use DBT skills as the training progresses. Other approaches for gathering data regarding how participants used skills across the training should be considered. For example, recording sessions like Ergas and colleagues (2018) might produce better information regarding how DBT skills are used by and influence participants’ perspectives. Another approach might be to include a journaling component with participants, such as end-of-session reflections or ongoing journaling of skills use. For those skills where homework takes the form of a checklist (e.g., the “what” and “how” skills of mindfulness), modification or use of DBT skills worksheets that require participants to list ways they used skills would produce more consistent data regarding how participants used skills across training sessions. These approaches would provide more systematic qualitative data to analyze, which would better inform theory and training development. Though that might also increase the compliance burden on participants.

**Training Development**

Translation of short-term effects into long-term effects is dependent on sufficient practice. In this case, this means more training sessions covering fewer skills to deepen participants’ understanding of skills to allow more focused learning and offer more
SUPPORTING PRE-SERVICE TEACHERS WITH SKILLS FROM DBT

practice opportunities. As noted, this study taught the same skills that are covered in 16 to 24 2.5-hour sessions in typical DBT applications. In the present study, I presented at least twice the content in about half the time. Two obvious solutions for a stand-alone training to remedy this lack of time are to cover fewer skills in an 8-session hourly training or to extend the training to 16 sessions to allow for more thorough coverage of the skills. Doing so would automatically extend the time for homework review since less homework would be reviewed and would provide more exposure and familiarity. Larger group size would couple well with this, but would require a slightly longer (i.e., 1.5 hour) training session. Extending the training to 16 sessions would also allow for repetition of the core mindfulness skills between modules, supporting participant development of these foundational skills of DBT training.

Typical DBT skills trainings, both in non-clinical populations and therapeutic applications, cycle through each DBT skills module at least twice. With pre-service teachers, such a training curriculum could span two semesters, with weekly trainings. Alternately, the training could be presented bi-weekly, a standard format in higher education, within one semester. Such a format would provide the added benefit of more sustained instruction that might bridge short-term benefits and long-term effects. However, such a format would be difficult for students who are gaining student-teaching experience and in classroom settings full-time to access.

Since the qualitative findings indicate that especially these pre-service students may have applied the DBT skills most in educational settings, an alternative could be integrating the DBT skills training into practicum coursework that coincides with clinical training. Materials could be designed to provide structures to promote participant skills
use between training sessions similar to those already described (e.g., skills cards, skills log) to increase the practice of skills in daily life. For example, a teacher I know sets a bell timer to sound periodically during the school day to remind herself and her students to take a prolonged breath (a TIPP skill).

One participant mentioned integrating observing and describing into her teaching with students, which can serve as a reminder for her to observe and describe as well. Other structures, like noting opportunities to use mindfulness on lesson plans or posting reminder notes could also serve as reminders to use DBT skills throughout the day. For example, as a reminder to use the relationship effectiveness skills, a teacher might post a note with the GIVE skills on the inside or outside of the classroom door as a reminder to be gentle, act interested, validate and use an easy manner when greeting and seeing children off.

Future DBT trainings might include a session activity where participants identify ways they can remind themselves to use that session’s skills in the following week. Classroom posters that provide an overview of the skills could also be used to provide visual reminders as training support. A ring of skills reminder cards may be easier to access during the day than the DBT training spiral used in this study. A mobile DBT skills application (e.g., DBT Diary Card & Skills Coach) could be incorporated into the training, so participants have access to descriptions of the skills on their smartphones (Durham DBT, Inc., 2017). Participants in this study mentioned that the daily diary survey served as a check-in and reminder to use skills. Use of an application or electronically delivered reminder to use skills could be added to the training to prompt participants to be mindful in daily life.
The findings from this study point to possible DBT skills applications that include teacher-student co-regulation and student self-regulation components. Future research might include exploration and development of such features with in-service teachers who are more likely to be able to identify applications of DBT skills for co-regulation and student self-regulation because of their teaching experience. Similarly, in-service teachers are also more likely to be able to identify curricular formats that lend themselves well to promoting their own, as well as their students’, skills use in daily classroom interactions.

**Conclusions**

This study of DBT skills training provided evidence that DBT skills training is a feasible format and structure for use with pre-service teachers. There is some indication that the training improved participants’ mindfulness and positive affect and there is evidence that participants found the skills applicable in personal and educational settings. Because DBT skills are informal and designed for use in everyday situations, they may be more accessible than alternative approaches to busy in- and pre-service teachers, especially when they are experiencing increased stress. Future experimental research studies, with larger samples, are needed to determine if indeed DBT training has similar effects to other teacher mindfulness training strategies. Further development of the DBT applications should focus on increasing participants’ skills use within and between sessions and extending skills for teacher-student co-regulation and child self-regulation. DBT skills training for teacher populations may be a viable alternative to meditation-based mindfulness trainings.
APPENDICES

Appendix A: Session Content

Session 1: Mindfulness
Mindfulness activity
Introductions and course organization
Biosocial Theory
Overview of mindfulness
States of mind/Wise mind
Mindfulness “What” Skills: Observe
Homework assigned
Closing observations

Session 2: Mindfulness
Mindfulness activity
Review of homework
“What” Skills: Describe & Participate
“How” Skills: Nonjudgmentally, One-mindfully & Effectively
Homework assigned
Closing observations

Session 3: Interpersonal Effectiveness
Mindfulness activity
Review of homework
Overview of walking the middle path
Dialectics
Validation
Goals of interpersonal effectiveness
Homework assigned
Closing observations

Session 4: Interpersonal Effectiveness
Observe/describe mindfulness activity
Review of homework
Overview of interpersonal effectiveness
Getting what you want (DEAR MAN)
Keeping the relationship (GIVE)
Maintaining self-respect (FAST)
Homework assigned
Closing observations

Session 5: Emotion Regulation
Mindfulness activity
Review of homework
Goals of emotion regulation
What emotions do for you
Observing and describing emotions
Homework assigned
Closing observations

Session 6: Emotion Regulation
Mindfulness activity
Review of homework
Overview of changing emotional responses
Check the facts
Opposite action
Problem solving
Homework assigned
Closing observations

Session 7: Distress Tolerance
Mindfulness activity
Review of homework
Overview of distress tolerance and reality acceptance skills
Radical acceptance
Turning the mind and willingness
Half-smiling and willing hands
Homework assigned
Closing observations

Session 8: Distress Tolerance
Mindfulness activity
Review of homework
Overview of crisis survival skills
Changing body chemistry (TIPP)
Distracting (Wise mind ACCEPTS)
Crisis survival skills with students
Looking forward/back and closure
Closing observation
Appendix B: Fidelity Checklists

<table>
<thead>
<tr>
<th>Session 1</th>
<th>Group:</th>
<th>Date:</th>
<th>Time:</th>
</tr>
</thead>
<tbody>
<tr>
<td>~5 min</td>
<td>Opening Mindfulness Activity: Mindfulness of Five Senses (p. 186 Iv.D.12.m&amp;k) walk through senses (hearing, sight, touch, taste, smell, breath)</td>
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<td></td>
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<tr>
<td>~2 min</td>
<td>A. Introductions: names, why came, program/teaching assignment; leader background and reason for doing this training (p. 127 I-A)</td>
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<td>~3 min</td>
<td>B. Organization of notebook and description of skills</td>
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<td></td>
<td>a. Mindfulness Skills – S1 &amp; 5: Core mindfulness (p. 128 I-D.1)</td>
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<td>b. Interpersonal Effectiveness Skills – S2: Walking the middle path; Dialectics; Validation (p. 128 I-D.2)</td>
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<td>c. Emotion Regulation Skills – S3 &amp; 4: Understanding and naming emotions; Changing emotional responses (p. 128-129 I-D.3)</td>
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<td></td>
<td>d. Distress Tolerance Skills – S6 &amp; 7: Reality acceptance skills: Crisis survival skills (p. 129 I-D.4)</td>
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<tr>
<td>C. Format of Skills Training: beginning ritual, review of skills practice and homework, presentation of new material, closing/wind-down (p. 128 I-E.2)</td>
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<td>~3 min</td>
<td>D. Guidelines for Skills Training (GH 2: Overview: Introduction to Skills Training; GH 3: Guidelines for Skills Training modified: exclude #1, 3, 4 and 5)</td>
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<td></td>
<td>a. Participants who join the skills group support each other: confidentiality, regular attendance, practicing between sessions, validate each other and avoid judgment, helpful and noncritical feedback, accept help (p. 133 II.A.2)</td>
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<td>b. Participants who are going to be late or miss a session call ahead of time (p. 134 II.A.3)</td>
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<td>c. Additional guidelines? (p. .136 II.A.6)</td>
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<td>E. Skills Training Assumptions (GH 4: Skills Training Assumptions; p. 137-138 II.B.1-7)</td>
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<td>~2 min</td>
<td>F. Committing to Learning Skills: still committed to sessions and practice? Difficulties with transportation, coming on time, staying until end? Concerns? (p. 137 II.C)</td>
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<tr>
<td>G. Diary Cards: Check skills used each day, how many times and time spent; practice skills already taught (p. 13-138 II.D.1&amp;3)</td>
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<td>~15 min</td>
<td>H. Biosocial Theory (GH 5; p. 139 IV.A)</td>
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<td></td>
<td>a. “Bio”: Biological Factors and Emotional Vulnerability; Biological Factors and Impulsivity (p. 139 IV.B)</td>
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<td>b. “Social”: Invalidating Environment; Ineffective Environment (p. 140 IV.C&amp;D)</td>
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<td>c. It's the Transactions that count: Fire example. (p. 142-143 IV.E)</td>
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<tr>
<td>~2 min</td>
<td>I. Overview of mindfulness (MH 1: Goals of Mindfulness Practice)</td>
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<td>Goals: reduce suffering increase happiness, increase control, experience reality as it is, be preset to others (p. 162-163 I.A)</td>
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<td></td>
<td>a. Importance of Practice (p. 166 I.C)</td>
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<td>b. Overview of core mindfulness: wise mind, “what” skills, “how” skills (MH 2: Overview: Core Mindfulness Skills; p. 166 II)</td>
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</table>
|           | a. Emotion mind: what emotions get in the way? vulnerabilities (illness,
### Supporting Pre-Service Teachers with Skills from DBT

#### Sleep, Substances, Diet
- Difference between strong emotions and emotion mind *(p. 167 III.B.1)*

#### Reasonable Mind
- Problems with reason? *(p. 167 III.B.2)*

#### Wise Mind as Synthesis
- Everyone has; it is not always easy to find or even be sure about wise mind; wise mind as peaceful; finding wise mind takes a lot of practice *(p. 167 III.C.1, 3, 6, 8)*

### Wise Mind Practice
- Walking down spiral staircase; asking wise mind a question; describe observations *(p. 173-174 III.D.3.b&d)*

### Practices
- Briefly review how to do other Wise Mind practices *(MH 3A: Ideas for Practicing Wise Mind; p. 172-176 III.D.3&E)*

### Mindfulness “What” Skills
- Can only do one at a time *(MH5: Taking hold of your Mind: “What” Skills; p. 176 IV)*

### Observe Skill
- Why observe, notice through senses *(MH4: Taking hold of your Mind: “What” Skills; p. 177-178 IV.B.1 & C.1)*
  - **Practice exercises:** brief introductory exercises (1), Wordless watching (4), Nonstick mind and avoid pushing away (5) & bringing the mind back (8) *(p. 178-182 IV.D.1, 4, 5, 8)*
  - **Practices:** review others and consider how to use with students *(MH4A: Ideas for Practicing Observing; p. 187 IV.E)*

### Assign Homework
- *(MWS 3: Wise Mind Practice)*

### Closing Observations
- Describe observations from session.

Notes: GH = General Handout; MH = Mindfulness Handout; MWS = Mindfulness Worksheet; teaching notes pages and sections are indicated in *italics*. 
<table>
<thead>
<tr>
<th>Session 2</th>
<th>Group: ___________</th>
<th>Date: ___________</th>
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<tr>
<td>~5 min</td>
<td><strong>Opening Mindfulness Activity</strong>: Acceptance by the Chair (p. 198 VI.E.19)</td>
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<tr>
<td>~15 min</td>
<td><strong>Review Wise Mind homework.</strong> Be sure to include what missed in first presentation:</td>
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<tr>
<td>~10 min</td>
<td><strong>Consider how to use Wise Mind and Observe with students.</strong></td>
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</table>
| ~5 min    | **A. Describe Skill** (MH4: Taking hold of your Mind)  
   a. **Why describe**: exercises – what am I thinking; what am I doing tomorrow (p. 188 V.A)  
   b. **What to do**: add words to observation, practice exercise with face, if it wasn’t observed it can’t be described (others thoughts, intentions, feelings, concepts, meanings, cause, change in things -inferences) (p. 189-191 V.B.1,2)  
   c. **Practice exercise** – observe: first thought, sound in room, sensation in body; then describe (p. 192 V.C)  
   d. **Practices**: review ways (MH4A: Ideas for Practicing Observing; p.192 V.D) |                |                  |
| ~5 min    | **B. Participate Skill** – what is it (MH4: Taking hold of your Mind: p. 192VI.A,)  
   a. **Why participate**: flow, effortless, skillful behavior (p.193 VI.B.1,4,6)  
   b. **What to do**: go over suggestions and list (p. 193 VI.C)  
   c. **Choosing when to observe, describe, and participate** – when something is new or difficult use observe and describe; practicing what is most difficult; balancing example (p. 194 IV.D1-2)  
   d. **Practice exercise** – Layered Rhythms  
   e. **Practices**: review ways (MH4C: Ideas for Practicing Participating; p. 192 IV.F) |                |                  |
   **D. Nonjudgmentally**  
   a. **Two types of Judgment**: discriminate and evaluate, let go of evaluate keep discriminate; nature of evaluations and nonjudgmentalness (p. 200-202 VII.A)  
   b. **Why be nonjudgmental**: harms relationships, negative effects on emotions, changing causes works better (p. 202-203 VII.B)  
   c. **How to do it**: replace evaluations with descriptions, let go of “should” and replace with description of feelings or desires (p. 203 VII.C)  
   d. **What nonjudgmentalness does NOT mean**: approval; denying consequences; keeping quiet about preferences/desires, values/ emotional responses; values/emotional responses/ (preferences)/ statement of fact are not judgments; Don’t judge the judging!!! (p. 204-206 VII.D)  
   e. **Practices**: discuss layered rhythm experience, review ways to practice (MH5A: Ideas for Practicing nonjudgmentally, p. 207 VII.F) |                |                  |
| ~5        | **A. One-mindfully**  
   a. **What is it**: completely present in this one moment, one thing at a time (p. 208-209 VIII.A)  
   b. **Why do it**: pain of present is enough for anyone, multitasking is inefficient, (p. 209 VIII.B) |                |                  |
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|   | c. **How to do it:** be present to own experiences, do only one thing at a time *(p. 209-210 VIII.C)*  
|   | d. **Practices:** review ways to practice *(MH5B: Ideas for Practicing one-mindfully; p. 210 VIII.D)* |
| ~5 | **B. Effectively**  
|   | a. **What is it:** what works to achieve your goals *(p. 211 IX.A)*  
|   | b. **Why act effectively:** being right or proving a point doesn’t make life satisfying *(p. 211 IX.B)*  
|   | c. **How to do it:** know the goal or objective, react to the actual situation, know what will and won’t work, “play by the rules,” be savvy about people *(p. 212-213 XII.C)*, doing what works  
|   | d. **Practices:** review ways to practice *(MH5C: Ideas for Practicing effectively; p. 213 IX.D)* |
| ~2 min | **C. Assign homework and go over diary card** *(MWS4A: Observing, Describing, Participating Checklist; MWS5A: Nonjudgementalness, one-mindfulness, effectiveness Checklist)* |
| ~2 min | **L. Closing observations:** Describe observations from session.  

*Notes: MH = Mindfulness Handout; MWS= Mindfulness Worksheet; teaching notes pages and sections are indicated in *italics.*
Session 3 | Group: ______________ | Date: ___________ | Time: ______________ |
---|---|---|---|
~5 min | **Opening Mindfulness Activity:** Improvisation 2 (p. 195 VI.E.4.b) | | |
~15 min | **Review “What” and “How” homework.** | | |
~10 min | **Consider how to use “What” and “How” skills with students.**
- Describe activities as part of LA
- Participate activities with focus of non-judgment and effectiveness
- One-mindfully so we really attend to those who are talking (e.g., one mindfully listen, then one mindfully talk in paired share; one mindfully draw; one mindfully do math, one mindfully take a break) | | |
~5 min | **A. Overview of walking the middle path** (IEH 14: Overview: Walking the Middle Path; p. 285 XIV.A)
  a. Harmony with reality as it is (not 50%/50% or how we want it to be)
**B. Dialectics** (p. 286-294 XV.A-C)
  a. **Why be dialectical:** to stay away from extremes – thinking actions, world view, resolving disagreements, searching for truth
  b. **What it is** (IEH 15: Dialectics remind us that, p. 286-290 XV.B)
    i. Opposite sides/ opposing forces needed for things to exist; opposing sides can both be true
    ii. Everything & every person is connected in some way: (physically, parts of a whole) separation as an illusion
    iii. Change is the only constant – promotes flexibility, to go with the flow, meaning and truth evolve over time
    iv. Change is transactional-refer to fire example (like Catalina example, p. 290)
  c. **How to think and act dialectically** (IEH 16: How to Think and Act Dialectically, p.290 XV.C)
    i. There is always more than one side to anything
       1. Ask wise mind “what am I missing”
       2. Kernel of truth: both/and rather then either/or
       3. Move away from extremes
       4. Play Devil’s advocate
       5. Use metaphors and story telling
    ii. Be aware you are connected
       1. Look at similarities rather than differences | | |
~10 min | **A. Dialectics: Balancing acceptance and change** (IEH 16A: Examples of opposites that can both be true; from DBT for Adolescents Manual p. 162-170)
*Note: alert participants that not on handouts and to write down*
  a. **Being too loose vs. too strict:**
    i. “Overly permissive with student or self”; “too few demands, limits, consequences”; “too little monitoring”
    *Example:* The teacher calls a child back into the classroom as the child is leaving. The child turns toward the teacher and then continues on outside. The teacher returns to her work.
    ii. “Imposing too many demands and limits”; “too much monitoring, while being inflexible”
    *Example:* The teacher calls a child back into the classroom as the child is leaving. The child turns toward the teacher and then continues on outside. The teacher follows the child, tells him that this “is totally unacceptable” and takes him to the
principle to be reprimanded.

b. Making light of problem behaviors vs. making too much of typical behaviors
   i. “minimizing seriousness of behaviors that could be maladaptive or harmful”

   *Example:* A fifth grader hits another child when that has taken a marker she was about to use. The teacher says, “oh yea, that child has a short fuse” and seats her somewhere else with no other consequences.

   *Example:* A kindergartener runs out of the classroom and hides in the playground. The educational assistant searches for the child for 30 minutes before finding him. The teacher tells the student she has to stay in the classroom. No other action is taken.

   ii. “overreacting to behaviors that are developmentally normative”

   *Example:* A seventh grader draws a penis on the edge of his paper. The teacher sends him to the office, and he gets suspended for a day.

   *Example:* A kindergartener hits another child that has taken a marker he is about to use. The teacher sends the child to the office and the child gets suspended for a day.

c. Forcing independence vs. fostering dependence
   i. “cutting strings prematurely”; not offering support when it’s still appropriate/needed

   *Example:* A first grader refuses to put on her jacket on a very cold day and the teacher leaves it in the classroom to teach the child a lesson.

   ii. “restricting moves toward independence”; “hold too tightly to children”; “hover[ing] nearby, solving problems for” them

   *Example:* A first grader refuses to put on her jacket on a cool day and the teacher takes it out to recess anyway ‘just in case.’

B. Goal is to notice when arise and work toward synthesis.

C. Validation (p. 259-260 VI.B.3) - Working on Acceptance
   a. **What is Validation?**
      i. Finding kernel of truth
      ii. Communicate that understand others perspective (have cause even if don’t know what cause is)
      iii. Validation ≠ agreement or making something valid
   b. **Why Validate?** Improves interactions, invalidation hurts
   c. **Important things to validate:**
      i. Only the valid
      ii. Validate person’s experiences, feelings/emotions, beliefs, opinions and thoughts (preferences)
   d. **How can you tell what is valid?** Well-grounded or justifiable
   e. **How to validate:**
      i. Pay attention
      ii. Reflect without judgment; With words
      iii. “read minds”; Read and validate other’s nonverbal signals
      iv. communicate an understanding of causes
      v. acknowledge the valid
      vi. show equality
      vii. **Actions speak louder than words** (p. 260)

D. Goals of interpersonal effectiveness (p. 235-236 I.A-C)
   a. skillful achieving goals (asking; saying no)- what have more trouble with
A. Overview of core interpersonal effectiveness skills (IEH 3: Overview: Obtaining Objectives Skillfully; p. 242 III.A-D)

B. Goals in interpersonal situations (IEH 4: Clarifying Goals in Interpersonal Situations; p. 242-??? IV.A-C):
   d. Objectives effectiveness
   e. Relationship effectiveness: can’t always be main objective; subverting personal needs doesn’t work
   f. Self-respect effectiveness: can’t always be main objective; violating own morals diminishes self-respect
   g. Deciding on relative importance: all three must be considered; each type may be more or less important; depends own personal priorities

Note: Put three circles on board for each goal (objectives, relationship, self-respect).

~2 min K. Assign homework (IEWS11A: Dialectics Checklist, p. 44 & IEWS 12: Validating Others, p. 48)

~2 min L. Closing observations: Describe observations from session.

Notes: IEH = Interpersonal Effectiveness Handout; IEWS = Interpersonal Effectiveness Worksheet; teaching notes pages and sections are indicated in italics.
<table>
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<tr>
<th>Session 4</th>
<th><strong>Group:</strong> ___________________</th>
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<th><strong>Time:</strong> ___________________</th>
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<tr>
<td>~5 min</td>
<td><strong>Opening Mindfulness Activity:</strong> Validation practice activity <em>(p. 302 II.6)</em></td>
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<td>~15 min</td>
<td><strong>Review Middle Path homework.</strong></td>
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</table>
| ~10 min   | **Consider how to use Middle Path with students.**  
- Too loose too tight  
- Making light of problem behavior vs. making too much of typical behavior  
- Forcing independence vs. fostering dependence  
Habits of validation; modeling validation.  
Encouraging validation from peers:  
  pay attention, reflect without judgment with words, “read minds” and check in, communicate understanding of causes, acknowledge what is valid, show equality |                              |                             |
| ~8 min    | **Note:** Put three circles on board for each goal (objectives, relationship, self-respect). Then add in as discuss below emphasizing that DEAR is what you do and MAN, GIVE, FAST is how you do it depending on your primary goal(s)  
**E. Getting what you want (DEAR MAN)** *(IEH 5: Guidelines for Objective Effectiveness: Getting What You Want (DEAR MAN); p. 249-254 V.B):*  
  a. describe the situation  
  b. express clearly  
  c. assert wishes  
  d. reinforce  
  e. stay mindful,  
  f. appear confident  
  g. negotiate  
**F. Practice ideas (p. 255 V.D)** |                              |                             |
| ~5 min    | **G. Keeping the relationship (GIVE)** *(IEH 6: Guidelines for Objective Effectiveness: Keeping the Relationship (GIVE) p. 255-260 VI. A&B):*  
  a. (be) gentle: no threats, judging, or disrespect  
  b. (act) interested: don’t have to be, can just act  
  c. validate: more next week  
  d. easy manner |                              |                             |
| ~5 min    | **H. Maintaining self-respect (FAST)** *(Guidelines for Self-Respect Effectiveness: Keeping Respect for Yourself (FAST); p.261 VII.B)  
  a. (be) fair  
  b. (No) apologies: (only if warranted)  
  c. stick to values  
  d. be truthful |                              |                             |
| ~7 min    | **A. Practice prioritizing and come up with script (p. 250) Example: Asking student/parent to turn in an overdue permission slip; come up with when each objective might be a priority (or use ideas below); have one or two people come up with a script for each.**  
  a. DEAR MAN: A student/parent that rarely turns things in late.  
  b. DEAR GIVE: A new student/or parent.  
  c. DEAR FAST: Someone who frequently turns things in late and you have had to make alternative arrangements for previously |                              |                             |
| ~2 min    | **K. Assign homework** *(IEWS 5: Tracking Interpersonal Effectiveness Skills Use)* |                              |                             |
| ~3 min    | **L. Closing observations:** Describe observations from session. |                              |                             |

*No Notes: IEH = Interpersonal Effectiveness Handout; IEWS= Interpersonal Effectiveness Worksheet;*
teaching notes pages and sections are indicated in *italics.*

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<tr>
<td>~5 min</td>
<td>Opening Mindfulness Activity: Observing emotions (p. 186 IV.D.12.j)</td>
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<td>~15 min</td>
<td>Review Interpersonal Effectiveness (DEAR MAN GIVE FAST) homework. <em>Be sure to include what missed in first presentation:</em></td>
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<tr>
<td>~10 min</td>
<td>Consider how to use Interpersonal Effectiveness skills with students</td>
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| ~3 min    | **B. Goals of this emotion regulation module (p.323-326 I)**  
            a. *What is emotion regulation?* Ability to control or influence emotions; can be automatic or controlled; will increase conscious awareness; overlearn skills so become automatic  
            b. *Understand Your Own Emotions:* identify your own emotions; understand what emotions do for you  
            c. *Decrease the Frequency of unwanted emotions:* Stop unwanted emotions from starting; Change painful emotions once they start; Emotions themselves are neither good nor bad; Suppression of emotions makes things worse; Emotion regulation is for ineffective emotions only  
            d. *Decrease vulnerability to emotion mind*  
            e. *Decrease emotional suffering* |
| ~5 min    | **C. ERH 3: What Emotions Do for You (p. 326-331 II)** help us survive; three primary functions of emotions:  
            a. *Motivate (and organize) us for action:* hardwired action urges; save time (examples); hard to change (example)  
            b. *Communicate to (and influence) others:* facial expressions; automatic effect/influence others (discussion point); can be hard to change (example); what happens when they don’t match  
            c. *Communicate to ourselves.* Check things out; emotions may not be accurate/treating emotions as facts leads to difficulties |
| ~9 min    | **D. ERH 4: What Makes it Hard to Regulate Emotions (p. 332-334 IV)**  
            a. *biology:* some more sensitive than others; emotional intensity  
            b. *lack of emotion regulation skills:* difference between skill and motivation; ability to use skill is often context dependent (e.g., with trusting person)  
            c. *reinforcing consequences of emotional behavior:* (examples)  
            d. *moodiness that makes the effort to manage emotions difficult*  
            e. *emotional overload:* worries as a way to escape, but then can’t attend effectively  
            f. *emotion myths:* faulty beliefs about value of expressing emotions & easy of recognizing emotions can cause trouble with emotion regulation; myths can invalidate experience (e.g., negative emotions are selfish/bad; can control emotions with willpower); (example) |
| ~9 min    | **E. ERH 5: Model for Describing emotions (p. 335-345, V)** Draw model on board as talk about it. Write components in black and ways to influence in another color  
            a. *Characteristics of emotions:* complex, automatic, cannot be changed directly, sudden (rise and fall), self-perpetuating  
            b. *Components of emotions:*  
               i. Prompting event  
                  • external or internal>>can change emotions by changing prompting events |
### ii. Attention/awareness
- *distraction can change emotions*

### iii. Thoughts/interpretations
- can be a prompting event when interpretations change, emotions change

### iv. Vulnerability factors
- past events (near and distant), hunger, sleep, stress when vulnerability factors change, emotions can change

### v. Biological changes
- activating or deactivating, change neurological/biological processes (e.g., yoga, exercise, distraction)

### vi. Experiences
- sensations cannot be changed directly

### vii. Expressions
- facial expressions and body language can change emotions by changing facial expressions and body posture

### viii. Action
- prepare body can change emotions by acting opposite of action urge

### ix. Emotion Names
- universal you can change emotions by learning to be aware of them and naming them

### x. Aftereffects
- “emotions love themselves”; hypervigilance can set of emotion again and again; narrowed attention for only confirming information so emotion repeats (emotion itself is short lived) you’re seeing through emotion mind can realize need to check the facts

---

~9 min

**F. Observing, Describing and Naming Emotions** *(ERWS 4& 4A: Observing and Describing Emotions; p. 347- VI): Use handout 6A to help identify emotion; consider prompting event and interpretations to help you*

**Functions of Specific Emotions** *(ERH 6: Ways to Describe Emotions; p.328-329 III.B.3) do in order of handout 6*

i. **Anger:**
- organizes responses to the blocking of important goals or activities or for imminent attack on self or others
- focus on self-defense, mastery, and control; consider urges (approach/attack)

ii. **Disgust:**
- Organizes our responses to situations/things offensive or contaminating
- Focuses us on rejecting/distancing ourselves

iii. **Envy**
- Organizes our responses to others’ getting or having things we do not have, want or need
- Focuses us on working hard

iv. **Fear**
- Organizes responses to threats
- Focuses us to escape from danger

v. **Happiness**
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|   | Supporting Pre-Service Teachers with Skills from DBT  

- Organizes responses to optimal functioning of self, those care about, social group  
- Focuses us on continuing activities that enhance pleasure and personal/social value  

### vi. Jealousy
- Organizes responses to others who threaten to take away relationships or things important to us  
- Focuses us on protecting what we have  

### vii. Love
- Organizes responses related to reproduction and survival  
- Focuses on union with and attachment to others  

### iii. Sadness
- Organizes our responses to losses of someone or something important; and to goals lost or not attained  
- Focuses us on what is valued and pursuit of goals; communicating to others we need help  

### ix. Shame
- Organizes responses related to personal characteristics/behaviors that are dishonoring or sanctioned by community  
- Focuses on hiding transgressions; if in public appeasing behaviors  

### x. Guilt
- Organizes responses related to actions that led to violation of values  
- Focuses actions/behaviors likely to repair violation  

|   | K. Assign homework (ERWS 4: Observing and Describing Emotions)  

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|   | L. Closing observations: Describe observations from session.  

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<th>Group: __________________ Date: _____________ Time: __________________</th>
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<tbody>
<tr>
<td>~5 min</td>
<td><strong>Opening Mindfulness Activity:</strong> Noticing urges <em>(p. 186 IV.D.12.1)</em></td>
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<tr>
<td>~15 min</td>
<td><strong>Review Describing Emotions homework.</strong></td>
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</table>
| ~10 min   | **Consider how to use Describing Emotions with students.**  
|           | • Diversify emotion words  
|           | • Discussion of how know emotion (how does it feel, what made it happen)  
|           | • Discussion of what different emotions ‘urge’ us to do |
| ~3 min    | **G. Overview of Changing Emotional Responses** *(ERH 7: Overview Changing Emotion Responses; p. 349-30 VII)*  
|           | • check the facts, opposite action, problem solving  
|           | • the “yes, but” barrier to changing emotions; only four responses:  
|           |   o solve the problem  
|           |   o change emotional reaction to situation  
|           |   o radically accept the situation  
|           |   o stay miserable |
| ~10 min   | **H. Check the facts** *(ERH 8: Check the facts; p. 350- ) react to facts rather than thoughts and interpretations**  
|           | **a. Why check the facts?**  
|           | • Practice Exercise *(p. 352 friend drives by)*  
|           |   How emotions can effect what we think about events and how we react to thoughts *(mood>>ideas, memory, perceptions; examples)*  
|           | • Believing that our thoughts are absolute truths can be a recipe for disaster  
|           | • Knowing the facts is essential for solving problems *(examples)*  
|           | • Examining our thoughts and checking the facts can change our emotions  
|           | **b. How to check the facts** *(p. 353-356)*  
|           | 1. Ask: what is the emotion I want to change?  
|           | 2. Ask: What is the event prompting my emotion? *(just the facts; outside or internal; secondary reaction; replace judgmental language)*  
|           | 3. Ask: What are my interpretations, thoughts, and assumptions about the event? *(ask do some examples first, then use list; consider all possible interpretations)*  
|           | 4. Ask: Am I assuming a threat?  
|           |   • label the threat  
|           |   • evaluate the changes that the threatening event will really occur *(wise mind; consider outcome from previous times had similar thought; ask questions to get information; conduct performance experiments)*  
|           |   • think of other possible outcomes *(example)*  
|           | 5. Ask: What is the catastrophe?  
|           |   • realistic consequences of worst outcome  
|           |   • imaging coping well with catastrophes *(problem solving, cope ahead, radical acceptance)*  
|           | 6. Ask: Does my emotion and/or intensity fit the facts? *(ERH 8A: Examples of Emotions that Fit the Facts; examples)* |
| ~3 min    | **I. Preparing for opposite action and problem solving** *(p. 359-361 IX)*  
|           | **a. Three ways to change: checking facts, problem solving opposite action;**
sometimes checking facts is enough

b. **When to use opposite action vs. problem solving** (ERH 9: Opposite Action and Problem Solving, Deciding which to use) *Go through flowchart pointing out main points and making examples*.

<table>
<thead>
<tr>
<th>~5</th>
<th>J. <strong>Opposite action</strong> (ERH 10: Opposite Action; p. 362-? X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td><strong>What is opposite action</strong></td>
</tr>
<tr>
<td>b.</td>
<td><strong>Why act opposite?</strong></td>
</tr>
<tr>
<td>c.</td>
<td><strong>When opposite action works best</strong></td>
</tr>
<tr>
<td>d.</td>
<td><strong>How to do opposite action, step by step</strong></td>
</tr>
<tr>
<td></td>
<td>1. Identify and name emotion you want to change</td>
</tr>
<tr>
<td></td>
<td>2. Check the facts</td>
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<tr>
<td></td>
<td>3. Identify and describe your action urges</td>
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<td></td>
<td>4. Ask wise mind: is expressing or acting on this emotion effective in this situation?</td>
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<tr>
<td></td>
<td>5. Act opposite to the emotion’s urges (practice exercise of emotion suppression)</td>
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<tr>
<td></td>
<td>6. Do opposite action ALL THE WAY</td>
</tr>
<tr>
<td></td>
<td>7. Continue acting opposite until the emotion goes down (practice to get over habitual unjustified emotions; discussion point: their examples)</td>
</tr>
<tr>
<td>e.</td>
<td><strong>Figuring out opposite actions</strong> (ERH 11: Figuring out opposite actions)- emphasize WHEN NOT JUSTIFIED</td>
</tr>
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<table>
<thead>
<tr>
<th>~5</th>
<th>K. <strong>Problem solving</strong> (IERH 12: Problem Solving; p. 372 XI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td><strong>Why learn problem solving?</strong> needed when acting on emotion is not likely to be effective</td>
</tr>
<tr>
<td>b.</td>
<td><strong>Steps of Problem solving</strong></td>
</tr>
<tr>
<td></td>
<td>1. Observe and describe the problem situation (let go of judgmentalness)</td>
</tr>
<tr>
<td></td>
<td>2. Check the facts</td>
</tr>
<tr>
<td></td>
<td>3. Identify your goal in solving the problem</td>
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<td></td>
<td>4. Brainstorm solutions (all ideas are welcome, don’t evaluate while brainstorming)</td>
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<tr>
<td></td>
<td>5. Choose a solution that fits the goal and is likely to work (priorities solutions, do pros and cons; consult wise mind)</td>
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<tr>
<td></td>
<td>6. Put solution into action</td>
</tr>
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<td></td>
<td>7. Evaluate the results of implanting the solution</td>
</tr>
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</table>

| ~2 min | K. **Assign homework** (ERWS 7: Opposite Action to Change Emotions & ERWS 8: Problem Solving to Change Emotions) |
| ~2 min | L. **Closing observations**: Describe observations from session. |

*Notes: ERH = Emotion Regulation Handout; ERWS Emotion Regulation Worksheet; teaching notes pages and sections are indicated in *italics.*
<table>
<thead>
<tr>
<th>Session 7</th>
<th>Group: __________________</th>
<th>Date: __________________</th>
<th>Time: __________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>~5 min</td>
<td><strong>Opening Mindfulness Activity:</strong> Laugh Club <em>(p. 194 VI.E.1)</em></td>
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</tr>
<tr>
<td>~15 min</td>
<td><strong>Review Changing Emotions homework.</strong></td>
<td></td>
<td></td>
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</tbody>
</table>
| ~10 min  | **Consider how to use Changing Emotions with students.**  
  - Opposite action for participation refusal  
  - Scaffolded problem solving |                           |                          |
| ~5 min   | **L. Overview of distress tolerance skills** *(DTH 1: Goals of Distress Tolerance; p. 420 I)*  
  1. **Survive** (and help your students survive) **crisis situations without making them worse**  
  2. **Accept reality as it is in the moment:**  
     - pain + nonacceptance = suffering and being stuck  
     - pain + acceptance = ordinary pain (can be intense) & possibility of moving forward  
  3. **Become Free:** can be at peace and content with ourselves and our lives, no matter the circumstances |                           |                          |
|          | **M. Overview of radical acceptance skills** *(DTH 10: Overview: Reality Acceptance skills; p. 450-451; notebook p. 105)*  
  1. **What are reality acceptance skills:** accepting life as it is  
  2. **Goals of reality acceptance skills:** reduce suffering, increase freedom  
  3. **Six basic reality acceptance skills:** radical acceptance, turning the mind, willingness, half-smiling, willing hands, allowing the mind: mindfulness of current thoughts |                           |                          |
| ~10 min  | **N. Radical Acceptance** *(DTH 11: Radical Acceptance; p. 451-463 XI)*  
  1. **Isn’t radical acceptance giving up or approving?** Story point  
  2. **What is the difference between acceptance and radical acceptance?**  
     - Acceptance: acknowledging and recognizing facts are true; conceding to facts; letting go on fighting your reality (and throwing tantrums)  
     - Radical acceptance: accepting all the way (mind, heart & soul); from depth of soul; opening self to fully experience reality as it is right now  
       - Without meanness, bitterness, grudge or anger  
       - Not radically accepting or accepting distorted facts (facts not in evidence) - results in despair/passivity, bitterness, resentment, undue shame and guilt  
  3. **What has to be accepted:**  
     a. **Reality is what is:** facts about present/past and reasonable probabilities  
        - Avoid distortions, exaggerations, catastrophes, judgmental assertions, and similar beliefs and assumptions (examples)  
        - Loving Dandelions story  
     b. **Everyone’s future has limitations:** like probabilities; limited by biology, environment (example), past behavior (2 examples), known probabilities (dying, paying taxes; study for exam, hostile job behavior); thoughts about future NOT have to be accepted as high probabilities (example)  
     c. **Everything has a cause:** assume cause and effect; rules of universe are what they are (story point); don’t need to know causes to radically accept  
     d. **Life can be worth living even if it contains pain** (story point) |                           |                          |
4. **Why accept reality?** Rejecting or denying reality doesn’t change it; changing reality requires first accepting it (story point: purple house); pain cannot be avoided; rejecting reality turns pain into suffering

5. **What radical acceptance is NOT** (DTH 11A: Radical Acceptance: Factors that Interfere): not approval, not compassion or love (examples), not passivity, giving up, or giving in; not against change (won’t cause change but is essential to allow for change)

O. **Practicing Radical Acceptance** (DTH 11B: Practicing Radical Acceptance Step by Step; p. 464-466 XI.H)

1. **Observe that you are questioning or fighting reality:** describe factually, without judgment
2. **Remind yourself that reality is just as it is:** accepting statements
3. **Consider the causes of the reality you need to accept:** personal example of sadness/grief
4. **Practice accepting with your whole self (mind, body and spirit):** all the way, let go, (including body)
5. **Practice opposite action:** as if you’ve already accepted
6. **Cope ahead:** imagine
7. **Attend to body sensations**
8. **Allow disappointment, sadness or grief to arise in you**
9. **Acknowledge that life can be worth living even if there is pain**
10. **Do pros and cons**

~7 min

P. **Turning the mind** (DTH 12: Turing the mind; p.466 XII)

1. **What is turning the mind?** Choosing to accept; momentary, have to do over and over (examples)
2. **Turning the mind step by step:** observe (tipoff: anger, bitterness, annoyance, ‘why me?’), make an inner commitment (turn mind toward acceptance), do it again, develop a plan (think through what usually do)

Q. **Willingness** (DTH 13: Willingness; p. 468 XIII) – skip if no time

1. **What is willfulness:** controlling, denying life or being part of it, trying to fix everything, holding a grudge or bitterness, holding onto ‘shoulds’
2. **How to get from willfulness to willingness:**
   a. Observe
   b. Radically accept willfulness
3. **Turn the mind**
4. **Try half-smiling/willing hands**
5. **Ask “what’s the threat?”** if immovable willfulness (example)

~3 min

R. **Half-smiling and willing hands** (DTH 14: Half Smiling & Willing Hands; p.471- 472 XIV)

1. **Why?** Ways to accept with body
   - **How to Practice half-smiling:** directions; not necessary for others to see; practice exercise
   - **How to Practice willing hands:** directions; opposite action for anger; practice exercise

~2 min

K. **Assign homework** (DTWS 10: Turning the Mind, Willingness, Willfulness; DTWS 11: Half-smiling and Willing Hands)

~3 min

L. **Closing observations:** Describe observations from session.

---

*Notes:* DTH = Distress Tolerance Handout; DTWS= Distress Tolerance Worksheet; teaching notes pages and sections are indicated in *italics.*
### Session 8

| ~5 min | Opening Mindfulness Activity: Finding your Lemon with bags (p. 184 IV.D.12.a) |
| ~15 min | Review Reality Acceptance homework. |
| ~10 min | Consider how to use Reality Acceptance with students. |

| ~5 min | S. Overview of crisis survival skills (DTH 2: Overview: Select Crisis Survival Skills; DTH 3: When to use crisis survival skills; p.421 - 424 II-III) |
| | a. **What are crisis survival skills?** tolerating & surviving crisis; go over three of six skills |
| | b. **Effects and Limits of These skills:** not cure to problems; temporary; ways to survive painful emotions; goal is to enable to survive crisis without making things worse |
| | c. **Knowing a crisis when you see one:** short term; pressure for quick resolution |
| | d. **When to use crisis survival skills:** intense pain that can’t be helped quickly; wanting to act from emotion mind when that would make things worse; having extreme arousal and problems that can’t be solved immediately |
| | e. **Are they working?** haven’t done anything to make things worse; more able to tolerate problem while using skills; **might** help feel better – but that is not the point |

| ~5 min | T. Changing body chemistry: (DTH 6: TIP Skills: Changing Your Body Chemistry; p. 431- ??? VI) |
| | a. **What are TIP skills?** skills to quickly change biological response (list them) |
| | b. **Why use TIP skills?** change chemistry to reduce emotional arousal; work fast (seconds or minutes); easy to use – little thinking; can be used in public without others knowing |
| | c. **When are TIP skills useful (for self or students):** in emotion mind, crisis with high urge of destructive behavior; overwhelmed; not processing information effectively; other skills are not feasible; skills breakdown point |
| | d. **How the TIP skills work:** increase activity of parasympathetic nervous system instead of sympathetic (fight or flight) |
| | i. **Temperature:** (dive reflex) hold breath and put water on face (not too cold); ice pack/zip-lock with ice-water/cold wet compress; splash water on face; **CAUTIONS:** heart problems; short lived effects (examples)- When: high emotional arousal, inability to sleep (rumination), dissociation |
| | ii. **Intense exercise:** at least 20 minutes, but works even if just get heart rate up – When: agitated, angry, ruminating won’t stop, bring up mood and willingness in morning |
| | iii. **Paced breathing:** slowing down breathing, from abdomen, breathing out slower/longer than breathing in; (research point [feel pulse] and practice exercise) |
| | iv. **Paired muscle relaxation:** tense breathing in, relax breathing out; notice sensation of tension and then relax (practice/demonstration) |

| ~5 min | U. Distracting with wise mind ACCEPTS (DTH 7: Distracting; p. 439-442 VII) |
| | a. **When distracting is useful?** Can easily be overused; when overwhelmed; |
when problem can’t be solved right away

b. Seven Distracting Skills

i. Activities: neutral or opposite to negative emotions and crisis behaviors; can distract attention by filling working memory with something else; can effect physiological responses and emotional expression; can reduce emotional pain

ii. Contributing: helping someone else can help forget own problems and give sense of meaning or self-respect

iii. Comparisons: to others who are doing as well or more poorly; to past when did more poorly

iv. Emotions: figure out current emotion, seek out activities for generating different emotions (e.g., read a book about friendship and love when feeling lonely)

v. Push away: leaving physically or pushing away mentally (e.g., put it in a box on the shelf for later) – not first to try, in an emergency

vi. Thoughts: fill working memory with other thoughts (e.g., sing a song in your head; counting something)

vii. Sensations: intense, different sensations (e.g., holding ice cubes, Tabasco sauce, lemon wedges, sour candy, headphones with fast, upbeat music)

~5 min  V. Self-soothing (DTH 8: Self-Soothing, p 442- ??? VIII)

a. **What is self-soothing?** Being comforting, nurturing, peacemaking, gentle and mindfully kind to yourself

b. **When to self-soothe?** To reduce vulnerability to emotion mind and acting impulsively; reduce sense of deprivation; to tolerate pain and distress

c. **How to self-soothe:** through five senses (vision, hearing, smell, taste, touch (practice exercise- review handout 8)

d. **Body scan as self-soothing** (short body scan)

~3 min  W. TIP, ACCEPTS and self-soothing for students: keep materials in room (icepack, essential oils, lemon wedges, ice cubes, soft blanket, headphones and music); create individual lists for students to refer to when they’re in crisis (article); practice and explain why works with students

~6 min  K. Looking forward, looking back and closure

a. Hopes and wishes from facilitator to group (continue to develop skills and use them to support self and students).

b. Hopes and wishes for self.


- In- (I am a) flower; out- (I feel) fresh or freshness
- In- (I am a) mountain; out – (I feel) solid or solidity
- In- (I am a) lake; out- (I feel) clear or clarity
- In- (I am the) spacious blue sky; out – (I feel) free or freedom

~2 min  L. Closing observations: Describe observations from session.

*Notes: DTH = Distress Tolerance Handout; DTWS= Distress Tolerance Worksheet; teaching notes pages and sections are indicated in *italics*2*
Appendix C: Demographic Survey

1. What is the id number you were assigned for this study? _____
2. How old are you? ______________
3. Which teacher education program are you accepted into?
   - Elementary Education
   - Secondary Education
   - Special Education
   - Dual Licensure (Elementary/Special)
   - Art Education
   - Health Education
   - Physical Education
   - Other ____________
4. What semester do you expect to graduate?
   - Spring 2018
   - Summer 2018
   - Fall 2018
   - Spring 2019
   - Summer 2019
   - Fall 2019
   - Spring 2020
   - Summer 2020 or later
5. How many days a week are you in the classroom this semester? _________
6. Do you consider yourself (check all that apply)?
   - African-American
   - Native American/Alaska Native
   - Asian/Pacific Islander
   - Caucasian/White
   - Hispanic/Latino
   - Unknown
   - Other ________________
7. Do you consider yourself (check one)?
   - male
   - female
   - transgender
   - undecided
   - other _______________
Appendix D: Daily Diary Survey

State Mindfulness Scale (SMS) Items
Today I:
noticed pleasant and unpleasant emotions
noticed pleasant and unpleasant thoughts
noticed pleasant and unpleasant physical sensations
noticed various sensations caused by my surroundings
(e.g., heat, coolness, the wind on my face)

Cognitive Affective Mindfulness Scale (CAMS-R) Items
Today I:
was preoccupied with the past
was focused on the present moment
was preoccupied with the future
was able to accept the thoughts and feelings I had

PROMIS Anxiety Items
Today I:
felt tense
felt worried
felt anxious
felt nervous

PROMIS Emotional Distress Items
Today I:
felt worthless
felt helpless
felt depressed
felt hopeless

PROMIS Positive Affect Items
Today I:
felt happy
felt great
felt cheerful
felt joyful
Appendix E: Post-training Interview Protocol

**Project:** Teachers’ Perceptions of Professional Practice in a Student-Centered Charter School

**Time of Interview:** __________  **Date:** __________  **Participant ID:** _____

**Interview Procedure:**
You are being asked to participate in a follow-up interview study investigating pre-service teachers’ perceptions of the usefulness and their use of DBT skills as a result of the skills training. During this interview, you will be asked to respond to several open-ended questions. You may choose not to answer any or all of the questions. What you share will be confidential, and you will not be identified by name or with personally identifying information in any reports.

**Informed Consent:**
Go over consent form. Do you have any questions? Answer questions. Please sign the informed consent form signaling your willingness to participate. I will take notes with my computer and you are welcome to look while I’m writing to make sure it is accurate.

**Questions:**
1. Tell me about your experience participating in this training.
2. Tell me about how you used what you learned.
   a. Could you tell me more about how you used or might use this as a teacher?
3. I would be interested to hear about the skills you found confusing or challenging.
   a. What was confusing/challenging about …
4. Thinking about the mindfulness, interpersonal effectiveness, emotion regulation, and distress tolerance skills we went over, what skills were most useful to you?
   a. What skills were most useful to you as a teacher?
5. Thinking about your work with students, what DBT skills do you think would be most useful for students to use or learn?
   a. Can you tell me more about this? How would this be of help to them?
6. How do you think this training could be improved?
7. Is there anything else you would like to tell me about your experience?

**Closing:**
Thank you for participating in this interview. I appreciate you taking the time to do this in addition to participating in the training study.
Figure 1

*SMS Mindfulness scores plotted across time by Participant.*

*Note:* SMS = State Mindfulness Scale; Time is presented in days centered at the first DBT skills training day.
Figure 2

_PROMIS Anxiety scores plotted across time by Participant._

*Note:* Time is presented in days centered at the first DBT skills training day.
Figure 3

*PROMIS Emotional Distress scores plotted across time by Participant.*

*Note:* Time is presented in days centered at the first DBT skills training day.
Figure 4

*PROMIS Positive Affect scores plotted across time by Participant.*

*Note:* Time is presented in days centered at the first DBT skills training day.
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