The Effectiveness of the ACHIEVER Adult Resilience Curriculum in Promoting Teacher Wellbeing

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What an unexpected adventure I have had at the University of Minnesota over the past 10 years, beginning the day I set out on this journey as a naïve graduate student at the prestigious Institute of Child Development (ICD) and now approaching an end, as I complete my dissertation as a graduate student in the equally prestigious School Psychology program. Many people deserve recognition and thanks for encouraging, mentoring, and supporting me over the past decade.

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Abstract

Teaching is a multifaceted profession, capturing a range of experiences that are exciting, rewarding, challenging, frustrating, and exhausting**.** Research has shown that teachers are at high risk of chronic stress and burnout which impacts teacher health, wellbeing, and effectiveness in the classroom. In the present study, the effectiveness of a theoretically based professional development program—the ACHIEVER Resilience Curriculum (ARC)—to increase teacher wellbeing and decrease symptoms of burnout was examined. The ARC training integrates several wellness promotion practices into one comprehensive program. To evaluate the effectiveness of the ARC, a randomized block controlled study with pre-post data collection was performed. The sample included 67 teachers from six schools in one large urban school district. Analyses showed that teachers who received ARC training experienced increased feelings of efficacy, overall subjective wellbeing, and reduced emotional exhaustion compared to an attention control group. In addition, increased feelings of wellbeing and reduced emotional exhaustion were correlated with higher quality teacher-student interactions. Evidence from this study also suggests that demographic variables such as grade level taught or number of years of teaching experience may moderate the effects of the ARC, indicating a need for continued research on the function and effectiveness of this program. Finally, teachers who received the ARC training indicated they found it to be feasible and acceptable for use in schools to promote teachers' wellbeing. The implications of these findings for

teacher training and practice, suggestions for future research, and the limitations of this study are discussed.

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CHAPTER 1: Introduction

Teachers are a vital asset and resource to the development and longevity of society, with teaching recognized as an important occupation in our society (Vesely, Saklofske, & Leschied, 2013). Notwithstanding the importance of teaching, it is regarded as one of the most demanding and highest stress occupations (Kyriacou, 2001; Vesely et al., 2013). Many teachers feel unprepared, unsupported, and unable to meet the demands of their positions (Renard, 2003). Moreover, societal expectations placed on schools, teachers, and students are increasing, with high accountability for outcomes for an ever-changing and increasingly diverse body of students (Emery & Vandenberg, 2010; Gu & Day, 2007; Pillay, Goddard, & Wilss, 2005). This increased pressure combined with ineffective coping mechanisms for dealing with stress can lead to burnout, which has wide-reaching impact on teachers, students, and schools (Burke, Greenglass, & Schwarzer, 1996; Kyriacou, 2001; Pillay et al., 2005). As a result of mounting evidence demonstrating the negative impact of teacher burnout and attrition, recent research has begun to shift away from examining teacher stress and burnout toward a focus on wellness promotion.

Background

Teaching is a multifaceted profession, capturing a range of experiences that are exciting, rewarding, challenging, frustrating, and exhausting. Federal, societal, and local pressure for educational results rests in large part on the shoulders of teachers, who must

constantly adapt to changing initiatives while meeting academic and behavioral challenges in the classroom. Teachers are held to high expectations to help all students succeed academically so that they graduate college or career ready (Kidger, Gunnell, Biddle, Campbell, & Donovan, 2010; U.S. Department of Education, 2016). This expectation requires considerable knowledge and skills to differentiate instruction, as schools serve economically, linguistically, and culturally diverse students (Flanagan & McPhee, 2009; Mulligan, Hastedt, & McCarroll, 2012; Thurlow, 2002; Zill & West, 2001). Teachers are also expected to adopt and implement innovative evidence-based practices shown to be effective, requiring frequent changes to their practice. These challenges will be explored in greater detail below.

In America, there is a long history of legislation to encourage state and local education agencies to promote high academic standards and access to education for all students. In recent years, legislation has included requirements to hold teachers, schools, districts, and states accountable for student progress and outcomes. The Elementary and Secondary Education Act (ESEA) was enacted in 1965 by President Lyndon Johnson with the goal of increasing the equity of educational opportunities by providing financial resources to schools serving children from low-income families (Thomas & Brady, 2005). In 1983, the National Commission on Excellence in Education published *A Nation at Risk*, a document emphasizing the poor academic performance of American students

compared to other nations and calling for increased academic standards and other reforms (Gardner, 1983; Thomas & Brady, 2005).

Reauthorizations of ESEA in 1994 (Improving America's Schools Act-IASA) and 2001 (No Child Left Behind Act-NCLB) called for curriculum content and performance standards, and annual standards-based assessments for students for purposes of accountability with rigorous proficiency requirements (No Child Left Behind Act of 2001; Stedman, 1994; Thurlow, 2002). More recently, President Barack Obama signed a reauthorization of ESEA in 2015 referred to as the Every Student Succeeds Act (ESSA). The ESSA continues the tradition of high standards, equitable opportunities, and accountability, with greater focus placed on student academic growth, college and career readiness, resource reallocation, and targeted interventions for students in need (U.S. Department of Education, 2016).

Federal education reform initially focused on the needs of children from low income backgrounds, but was eventually extended to children from diverse racial and ethnic backgrounds, homeless and highly mobile children, children with limited English proficiency, and children with disabilities (Thurlow, 2002). As education reform has swept the nation, the number of children coming to school with one or more risk factors is slowly increasing. Data from the Early Childhood Longitudinal Study Kindergarten cohorts of 1998-1999 (ECLS-K) and 2010-2011 (ECLS-K:2011), as well as the birth cohort of 2006-2007 (ECLS-B), indicated that the percentage of children from families

living below the poverty line has increased from 18% to 25%, and the percentage of students from non-English speaking homes has increased from 9% to more than 15% (Flanagan & McPhee, 2009; Mulligan, Hastedt, & McCarroll, 2012; Zill & West, 2001). The racial/ethnic diversity of children at kindergarten entry is increasing (Flanagan & McPhee, 2009; Mulligan, et al., 2012), as is the population of students with disabilities served in general education settings with non-disabled peers (National Center for Education Statistics [NCES], 2015).

Reforms to increase the inclusion of and accountability for historically marginalized subgroups, such as students with disabilities, students from low income backgrounds, students with a first language other than English, and students from diverse racial and ethnic backgrounds have undoubtedly benefitted our schools and students in many ways (MetLife, 2008; Thurlow, 2002). However, the inclusion of diverse learners in general education classrooms requires knowledge and skill in differentiating learning materials and accommodating students (Renard, 2003; Thurlow, 2002). Differentiating instruction for these students may be especially difficult and overwhelming for new teachers, as both teachers and education leaders indicate that working with children of varying skill levels is one of the biggest challenges teachers face (MetLife, 2006; MetLife, 2008; MetLife, 2012; Renard, 2003).

In addition to differentiating academic instruction, teachers are increasingly called upon to manage challenging behavior, teach social and emotional skills, promote mental

health, teach health and safety skills, build and maintain connections with families, and implement evidence-based practices in curriculum and interventions with the goal of every student achieving college or career readiness by graduation (Cohen, 2006; Jennings & Greenberg, 2009; Kidger et al., 2010; Pillay et al., 2005). Evidence suggests that many children may not be ready to begin school at kindergarten entry because of behavior and emotion-regulation difficulties (Gilliam, 2005; MetLife, 2008). Students in high needs schools—those most in need of high quality instruction—may be more at risk for exhibiting externalizing behaviors in the classroom (Hoglund, Klingle, & Hosan, 2015). Many teachers report difficulty managing behavior in the classroom, which has been linked to increased job-related stress and decreased job satisfaction (Burke et al., 1996; Chang, 2013; Jennings, 2015; MetLife, 2006). Further, teachers often lack skills to implement evidence-based social and emotional curricula (Kidger et al., 2010; Jennings & Greenberg, 2009). Most educators agree that a 'whole-child' approach to teaching, including supporting students in the development of non-academic skills such as social and emotional skills, is critical (Cohen, 2006; Jennings & Greenberg, 2009; Roffey, 2012). However, increasing administrative and societal expectations to integrate instruction and practice in social and emotional skills, combined with pressure to produce outcomes on large-scale assessments for all students, while differentiating instruction and managing behaviors for an increasingly diverse student body leaves many teachers feeling overwhelmed. Teachers report feeling inadequately prepared to fill each of these

roles in the classroom, and many succumb to stress and burnout (Jennings & Greenberg, 2009). Paradoxically, although teachers are called to support the social emotional functioning of their students, the social emotional functioning and overall wellbeing of teachers is not adequately researched or supported in schools (Kidger et al., 2010, p. 922; Jennings & Greenberg, 2009).

Teacher stress and wellbeing. Teacher wellbeing has often been described in research literature in deficit terms, with the discussion centering on teacher stress and burnout (Howard & Johnson, 2004; Roffey, 2012). Teacher stress and burnout are indeed significant, as recent survey data indicated that teacher reported job satisfaction was at an all-time low in 2012 (MetLife, 2012). Teachers reporting lower satisfaction reported higher levels of occupational stress, and were more likely to indicate that they would leave the teaching profession within five years (MetLife, 2008). Estimates of retention indicate that up to 50% of new teachers leave the profession within five years, with similar percentages observed internationally (Roffey, 2012). In addition to attrition, chronic stress can lead to a host of negative outcomes, both for teachers and the students they serve. Teachers who are stressed and burned out do not function successfully in the classroom, experience more difficulties with classroom management, and deliver lower quality instruction (Oberle & Schonert-Reichl, 2016). Chronic difficulties managing daily stress may lead to a series of experiences referred to as the 'burnout cascade,' characterized by increases in emotional exhaustion, (feeling tired and overextended,

feeling emotionally and physically drained), depersonalization (callous, unfeeling response to students), and job dissatisfaction (Burke et al., 1996; Oberle & Schonert-Reichl, 2016). Chronic stress can also have negative impacts on overall health, with higher rates of depression and illness, decreased hippocampal functioning, and lower perceived personal and professional efficacy (Roffey, 2012; Vesely et al., 2013). Finally, teacher stress and reduced teacher efficacy contribute to lower student achievement, poorer teacher-student interactions and relationships, reduced support of students in the classroom, less positive and more stressful classroom environments, and increased student stress measured by increased cortisol (Hoglund et al., 2015; Howard & Johnson, 2004; Kidger et al., 2010; Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008; Oberle & Schonert-Reichl, 2016). Recent research demonstrated a contagion effect in which burned out teachers were more likely to have students who had higher levels of morning cortisol, indicating that the students in their classes were experiencing higher levels of stress in anticipation of going to school (Oberle & Schonert-Reichl, 2016).

The success of initiatives targeting classroom and school climate, student achievement, and student social and emotional competence (SEC) has been argued to be dependent upon the wellbeing of teachers who are the frontline implementers (Cook et al., 2017; Gu & Day, 2007; Jennings & Greenberg, 2009; Roffey, 2012). Teachers must navigate challenging or emotionally provocative situations on a daily basis, and are limited in their options for self-regulation when they must remain in the classroom while

calming down (Jennings & Greenberg, 2009; McLean & Connor, 2015). Chronic stress and burnout undermine teacher health, wellbeing, and effectiveness in the classroom. In order to function well in schools with accountability requirements and high expectations for student wellbeing and academic outcomes, teachers must be able to manage stress, cope effectively with ongoing change, and seek and provide social support (Cook et al., 2017; Jennings & Greenberg, 2009).

Recently, researchers in the field have shifted their focus from examining the predictors and consequences of teacher stress to focus on programs and strategies to promote stress management and wellbeing. Many of these programs focus on training to develop resilience and mindfulness (Jennings, Frank, Snowberg, Coccia, & Greenberg, 2013), increase emotional intelligence (Chan, 2006), and/or promote protective factors such as support from colleagues and school administrators (Beltman, Mansfield, & Price, 2011; Gu & Day, 2007). The empirical findings obtained from these studies point to the importance and promise of providing teachers with strategic interventions to promote their wellbeing and performance (Cook et al., 2017). Research examining interventions to promote teacher wellbeing is just emerging with considerable room for additional research to develop innovative supports, replicate findings on existing programs, and examine mediators and moderators impacting outcomes.

Rationale

Research demonstrates that training to increase SEC increases resilience and leads to positive outcomes for students and teachers (Jennings & Greenberg, 2009). Several programs have been developed, but research on the effectiveness of training programs to teach social emotional skills and promote resilience in teachers is in its infancy. More experimental research is needed to add to the scientific literature base on effective SEC skills training and resilience promotion programs developed exclusively for teachers. Additional research to examine different modes of implementing SEC training programs (e.g., web-based platform, face-to-face) is also needed. Training programs that can be effectively delivered online may be more accessible, convenient, and cost-effective for schools and individuals (Carter, 2004; Clary & Wandersee, 2009), and may offer consultation opportunities that would not be available in face-to-face only formats. Although some evidence exists to suggest that online professional development in general is equally as effective as face-to-face delivery (Russell, Carey, Kleiman, & Venable, 2009), little data exists to support this assertion related to teacher SEC training and resilience promotion programs. Also needed are replication studies to demonstrate the effectiveness of a specific training program with novel and diverse groups of teachers from different regions of the United States. Finally, teachers are most likely to actively participate in training programs that they feel benefit them and can be incorporated immediately into their practice. Therefore, it is important to conduct research on teachers'

perceptions of the feasibility and acceptability of SEC training programs. This study experimentally examined the novel application of the ACHIEVER Resilience Curriculum (ARC; Cook et al., 2017) with elementary school teachers. The ARC is a teacher wellness promotion training program that integrates elements of several evidence-informed wellbeing promoting practices into one comprehensive program that can be delivered via an online or in-person format.

Purpose

The purpose of the current project was to experimentally examine the effectiveness of the ARC, when delivered via a web-based learning platform with follow-up interactive online support, to promote elementary teacher wellbeing and performance outcomes such as increased subjective wellbeing, increased healthy habits, decreased emotional exhaustion, and increased positive teacher-student interactions. Secondary aims of this project included examining the extent to which elementary teachers found the ARC to be feasible and acceptable and whether demographic factors moderated the effectiveness of ARC on outcomes.

Significance of the study

Results from the current study will add to the knowledge base regarding the effectiveness of professional development programs targeting wellness promotion for teachers. Randomized controlled trials investigating implementation of the ARC with secondary teachers indicated significant impact of the ARC to decrease perceived stress,

and improve self-efficacy and job satisfaction (Cook et al., 2017). The current study is intended to replicate those findings with a novel group of teachers, adding to the external validity of the ARC. The current study also will advance knowledge regarding the impact of wellness promotion programs on the development of positive student-teacher interactions. Positive interactions have been linked to positive relationships between students and teachers, which in turn have been demonstrated in research to improve classroom and student outcomes (Baker, 1999; Downey, 2008; Hamre & Pianta, 2001; Jennings & Greenberg, 2009; Klem & Connell, 2004; Suldo et al., 2009). In addition, teacher opinions on the practices they find acceptable and beneficial provide insight into potential mediators that enable more efficient training programs for use in the school setting. Finally, because the ARC is delivered in an online format, the current study will add to the research base on the effectiveness of SEC training programs delivered in a web-based format, which offers significant promise for increasing the scalability and access of support for teachers.

Research Questions

The following four research questions guided the methods and analyses employed in the current study:

1. Do elementary teachers who receive the ARC demonstrate significantly greater changes in indicators of wellbeing (e.g., increased self-reported school

connectedness, decreased self-reported emotional exhaustion) than those in an attention control group?

2. Do elementary teachers who receive the ARC demonstrate significantly better interactions with students than those in an attention control group?
3. Do teacher demographic variables (e.g., grade level taught and years of teaching experience) moderate the impact of the ARC on outcomes?
4. Do teachers in the intervention condition find the ARC to be acceptable and feasible?

CHAPTER 2. Literature Review

Teacher stress puts teachers at risk for burnout and has been linked to negative outcomes at the personal, classroom, and student levels. Relationships between teacher stress, burnout, and negative outcomes have been well established in the literature (Dick & Wagner, 2001; Howard & Johnson, 2004; Jennings & Greenberg, 2009; Oberle & Schonert-Reichl, 2016; Pillay et al., 2005; Roffey, 2012). Recently, researchers have called for more emphasis on wellness promotion, including training in skills to promote resilience, and explicit teaching of social and emotional skills relevant to the profession. Research on mindfulness-based interventions has also increased in recent years. Mindfulness training aims to aid teachers in increasing their awareness of their own thoughts and behaviors in the present moment. These bodies of research will be examined

in more detail in the following paragraphs to review the background literature that builds the case for this study.

Understanding Physiological, Psychological, and Teacher Stress

Stress is a universal human physiological response that occurs in response to perceived or actual events or situations (Selye, 1973). However, the same event or situation can cause differing amounts of stress in different people. This phenomenon has long posed a challenge to researchers seeking to define and conduct research on stress (Selye, 1973). Hans Selye, who helped coin the term and concept of physiological stress in humans, further illustrated the difficulty with defining stress: although many conditions such as effort, fatigue, pain, fear, loss of blood, or unexpected success can produce stress, none of them are "it" since the word applies equally to all of these conditions (Selye, 1973, p. 692).

The history of the physiological stress response. It is helpful to consider an historical perspective of the development of the concept of stress, in order to better understand its role in the teaching profession. Use of the term in the 17th century by physicist-biologist Robert Hooke referred to the area of a man-made structure that bore a load (Lazarus, 1993). This conceptualization of stress as an external load or demand on a system significantly impacted later physiological, psychological, and sociological models of stress (Lazarus, 1993). As a medical student in the 1920's, and later while working as a biochemist, Hans Selye noted three stereotypical physiological changes—enlarged

adrenal cortex, reduced lymphatic structures, and bleeding ulcers in the gut—in the bodies of rats in response to a wide range of insults (Selye, 1973). Selye (1973) referred to this syndrome as the General Adaptation Syndrome (GAS) or biologic stress syndrome, characterized by the predictable body reaction to any agent toxic to the tissues (Lazarus, 1993). The syndrome was described as a three phase process beginning with an alarm reaction, or a recruitment of the body's defensive forces in the face of significant stressors, followed by stages of resistance to the stressor and exhaustion (Selye, 1975). Discovery of the GAS led Selye to define stress as 'the nonspecific response of the body to any demand made upon it' (Selye, 1973, p. 692). Therefore, the resulting definition of stress intended to convey that the body must constantly readjust itself to adapt to changes or demands placed on it, and a predictable 'syndrome' referred to as the GAS resulted when adaptational systems were overwhelmed (Selye, 1973; 1975).

The hypothesis that humans must constantly adapt to internal or environmental forces in order to maintain balance or equilibrium existed long before Selye's work in the 1930's. In fact, ancient Greek philosophers and physicians were among the first thinkers to propose that a static state was not natural, and that life required the harmonious balance of many elements (Chrousos & Gold, 1992). The physicist Walter Cannon coined the term *homeostasis* in the early 1930's, defined as "the coordinated physiological processes which maintain most of the steady states in the organism" (Chrousos & Gold, 1992; Lazarus, 1993; Selye, 1973, p. 697). Cannon initially described homeostasis as it

applied to physiological states crucial for survival, such as core temperature or blood glucose (Goldstein & Kopin, 2007). Others later applied the idea of homeostasis to emotional and psychological functioning as well (Chrousos & Gold, 1992; Sapolsky, 2004).

Modern definitions of stress, homeostasis, and the stress response.

Researchers have recently conceptualized stress to occur when threats to homeostasis are consciously or unconsciously perceived (Goldstein & Kopin, 2007). Recent definitions of stress also account for differences in the individual's perception of a stressor and their ability to cope (Goldstein & Kopin, 2007; Lazarus, 1993). Definitions of homeostasis have been modernized as well. While the term was traditionally interpreted to refer to a constant value for a given physiological state, use of the term (and a new term: allostasis) now includes recognition of fluctuations in the acceptable value of the state of interest, such as diurnal fluctuation in ideal body temperature or myocardial metabolism, and the required level of activity to "maintain stability through change" (Goldstein & Kopin, 2007, p. 116; Sapolsky, 2004).

Our brains and bodies have become finely tuned to react in the face of threats to homeostasis (Chrousos & Gold, 1992; Sapolsky, 2004). When stressors are perceived, activation of the hypothalamic-pituitary-adrenocortical (HPA) axis, the sympathetic-adrenal-medullary (SAM) system, and the sympathetic nervous system (SNS) occurs (Chrousos & Gold, 1992; Goldstein & Kopin, 2007). These responses confer an

adaptively beneficial reaction that redirects energy to the systems or organs needed to react to the threat (Chrousos & Gold, 1992). Resulting body changes include increased vigilance, arousal, alertness, oxygen flow to the brain, heart rate, and blood pressure, and reduced appetite and digestion (Chrousos & Gold, 1992). Responses by the HPA axis and SAM system include the release of hormones such as epinephrine, norepinephrine, and cortisol into the bloodstream (Chrousos & Gold, 1992; Goldstein & Kopin, 2007; McEwen & Sapolsky, 1995).

Psychological stress and coping. It is clear that brain and body responses to stressors as described above are supremely helpful when responding to a short-term crisis, such as unexpectedly happening upon a snarling dog, or getting out of the way of a speeding vehicle. Many organisms (not just humans) can activate necessary stress-response systems when faced with acute or chronic physical crises, and can turn off those systems when the crisis is over, assuming they survived (Sapolsky, 2004). Human brains are unique in that they also activate the stress response just by thinking about something stressful (Lazarus, 1993; Sapolsky, 2004). Anticipating future occurrences, ruminating on past experiences, or even appraisal of incoming information as threatening, can all activate the same stress response used to respond to physical stressors, even if the event in question never physically occurs (Lazarus, 1993). Frequent activation of the stress-response to psychological stressors is potentially harmful, as decades of research have now shown that when the stress-response is activated repeatedly, or when we experience

difficulty turning it off once the stressful event has ended, our bodies are at greater risk of developing stress-related disease or decreased cognitive functioning over time (McEwen & Sapolsky, 1995; Sapolsky, 1996; Sapolsky, 2004).

The description of stress, the stress-response, and potential long-term health outcomes provided thus far may lead one to believe that stress always has negative impacts on the brain and body. However many researchers, including Hans Selye, account for both good stress (which Selye termed *eustress*) and bad stress (termed *distress* by Selye) (Lazarus, 1993; Selye, 1973). Examples of eustress might include exercise, or participation in a competition. Selye and others argue that experiencing some stress is beneficial. For example, Chrousos and Gold (1992) describe an inverted-U shaped dose-response curve to illustrate the hypothesis that some activation of the stress system results in increased performance or feelings of wellbeing, but those benefits drop off with increased activation over the optimal level. Lazarus's transactional model of stress and coping introduced the importance of cognitive appraisal of an event or stimulus, in order to determine its meaning related to the wellbeing of the appraising organism (Lazarus & Folkman, 1987). Lazarus distinguished between three kinds of psychological stress: harm, threat, and challenge (Lazarus, 1993). Challenge is analogous in Lazarus's model to Selye's concept of eustress; difficult demands are present that activate the stress-response system, but the demand may seem exhilarating and manageable (i.e., going on a first date or running a race) (Lazarus, 1993). In contrast,

when a threat is detected and a person perceives insufficient resources to manage the threat, distress results (Lazarus & Folkman, 1987). When stressed, humans next search for coping strategies, which Lazarus and Folkman (1987) argue function in one of two ways: changing the situation (problem-focused coping) or changing related negative emotions (emotion-focused coping) over time as an ongoing process.

Teacher stress and coping. Teaching can be a socially and emotionally challenging job. Teachers are often expected to assume many roles, including providing academic instruction, managing disruptive behaviors, providing social and emotional skill instruction, supporting student wellbeing, and maintaining relationships and communication with parents, often in addition to expectations for other duties such as serving on committees or supervising students outside of instruction time (Burke et al., 1996; Hamre & Pianta, 2001; Jennings, 2015). Teacher stress has been defined as the experience of negative emotions such as anger, anxiety, tension, frustration, or depression resulting from their work as a teacher, which threaten self-esteem or wellbeing (Kyriacou, 2001, p. 28). It is well documented that many teachers experience very high rates of stress, resulting from sources including unmotivated students, behavior management, time pressure, high workload, relationships with colleagues, bureaucratic red tape, and perceived lack of administrative support (Burke et al., 1996; Howard & Johnson, 2004; Jennings & Greenberg, 2009; Kyriacou, 2001; Oberle & Schonert-Reichl, 2016). As evidenced by a review of common stressors, the work of a teacher cannot be

fully described in physical or cognitive terms alone. Teachers are also involved in emotion work, including managing their own emotions, managing the emotions of others, and engaging in interactions with others in accordance with organizational expectations (Sutton & Wheatley, 2003; Zapf, 2002). Indeed, teachers report that dealing with their own emotions is a significant source of stress, as they are often involved in situations likely to provoke negative emotions such as frustration, anger, or sadness, and are not afforded the opportunities of privacy and downtime to self-regulate emotions (Jennings, 2015; Jennings & Greenberg, 2009).

Teachers cope with stress and negative emotions in a variety of ways. Kyriacou (2001) describes two types of coping techniques: (1) direct action techniques, similar to Lazarus and Folkman's problem-centered coping, that involve working to eliminate the source of stress; and (2) palliative techniques, similar to Lazarus and Folkman's emotion-focused coping, which involve mental or physical strategies to lessen the feelings of stress. Teachers use several common coping actions, including avoiding confrontations, attempting to relax at home, taking action to deal with problems, keeping feelings under control, planning ahead, discussing problems and feelings with others, and trying to keep problems in perspective (Kyriacou, 2001, p. 30-31). When coping systems are overwhelmed, mounting stress and prolonged experience of negative emotions may lead to emotional exhaustion and burnout.

Burnout in the teaching profession. Burnout is a psychological syndrome that can impact individuals who work intensely with other people (Maslach, Jackson, & Leiter, 1996). The cascade of experiences characterizing burnout—emotional exhaustion, depersonalization, and lack of personal accomplishment—are triggered by ongoing levels of high psychological stress which interfere with a teacher's ability to experience meaning and accomplish professional goals at work (Emery & Vandenberg, 2010; Maslach et al., 1996). Burnout results in negative outcomes for the teacher, students, and the school (Jennings & Greenberg, 2009; Maslach et al., 1996). Teachers experiencing burnout are impacted psychologically (i.e., job dissatisfaction, feelings of inadequacy, depression, anger, frustration), physiologically (i.e., increased blood pressure, headaches, illness, heart disease, memory), and behaviorally (i.e., absenteeism, attrition) (Chang, 2013; Dick & Wagner, 2001; Emery & Vandenberg, 2010; Howard & Johnson, 2004; McEwen & Sapolsky, 1995; Roffey, 2012). These outcomes are not surprising given the vast knowledge of the potential negative impact of frequent activation of the stress response over time (McEwen & Sapolsky, 1995; Sapolsky, 1996; Sapolsky, 2004).

Emotional exhaustion, or feeling physically and emotionally drained and overextended, is not analogous to boredom (Emery & Vandenberg, 2010). Rather, emotional exhaustion occurs when teachers are invested in their work, but situational stressors begin to take a toll on their resources and coping mechanisms (Emery & Vandenberg, 2010; Maslach et al., 1996). When emotionally drained, teachers tend to

psychologically distance themselves from people or situations that may place additional emotional demands on them as a method of self-preservation (Emery & Vandenberg, 2010). As a result, teachers experiencing burnout demonstrate less sympathy and caring for their students and have less confidence in their classroom management skills, resulting in increased incidence of student disruptiveness (Oberle & Schonert-Reichl, 2016; Pillay et al., 2005).

Students of teachers experiencing burnout may experience less social, academic, and emotional support, and lower quality teacher-student interactions, resulting in possible feelings of disengagement or alienation (Jennings, 2015; Jennings & Greenberg, 2009; Oberle & Schonert-Reichl, 2016). In a study on the relationship between kindergarten teachers' perceived relationships with students and later outcomes, Hamre & Pianta (2001) found that teacher reports of conflict and dependency predicted later achievement and behavior. The authors suggested that the quality of early teacher-child relationships may be related to the students' engagement in school and academic resources as a whole (Hamre & Pianta, 2001). Teacher burnout has even been associated with students' stress physiology as measured by morning cortisol, with higher cortisol levels measured in students in classrooms with teachers experiencing burnout (Oberle & Schonert-Reichl, 2016). Finally, in a study on the link between teacher depression, classroom environment, and achievement outcomes, McLean and Connor (2015) found that teachers who frequently experience depressive symptoms are less likely to create and

maintain high quality classroom environments. Students in lower quality classroom environments (i.e., less organized and efficient, unclear expectations for behavior, less warmth between teacher and student, less differentiated instruction) demonstrated lower gains on measures of math achievement as compared to students in high quality classroom environments (McLean & Connor, 2015).

Teacher burnout: Individual or situational? Conventional wisdom regarding burnout in any profession is that the problem lies within the individual, who is trying too hard, doing too much, or is weak or incompetent (Maslach, 2003, p. 191). Research suggests that although there are some person variables that may be linked to higher incidence of burnout, the job characteristics of difficult demands, imbalance between demands and resources, and the presence of conflict (relationship, role, or values) are commonly observed in jobs with high burnout rates (Maslach, 2003).

Jennings and Greenberg (2009) argue that person variables such as personality, demographics, health, personal life stress, and SEC (i.e., self-awareness, self-management, social awareness) all impact teacher's skills in coping with emotional demands of the job (p. 496-498). For example, person characteristics may influence how a teacher appraises a situation, which determines whether the event is perceived as stressful (Jennings & Greenberg, 2009; Lazarus and Folkman, 1987). Differential appraisal of the same student misbehavior might lead two teachers to react in very different ways. A teacher who feels self-aware and competent in their behavior

management skills may conclude that a misbehaving child needs a break or special attention, while a teacher who does not feel competent in behavior management may perceive the behavior as a threat to authority and administer punishment. These two actions would likely result in different reactions from the student.

The situational demands that Maslach (2003) describes as potentially more predictive of burnout are present in teaching as well. It is erroneously assumed that teachers enter the profession with adequate skills needed to be emotionally responsive to students, manage challenging student behavior, and manage their own emotions effectively (Jennings & Greenberg, 2009). In fact, many teachers may not have the skills to adequately manage their own negative emotions in the classroom or to set up emotionally supportive environments for students (Jennings & Greenberg, 2009). Teachers who lack problem-solving skills to manage challenging situations in the classroom experience higher levels of anger and frustration (Chang, 2013). Lack of perceived competence, self-awareness, self-esteem, and SEC is one example of a mismatch between the demand for skills needed to perform the job, and availability of resources to do so. Although several professional development programs have been developed to assist teachers in developing skills to manage stress, few programs teach SEC, which may be a necessary skill for successful job performance (Gu & Day, 2007; Jennings & Greenberg, 2009). The teaching profession demands a high level of skill and competence in content knowledge, delivering instruction, classroom management,

relationship management, and SEC, but lack of resources and conflict in roles and relationships are commonly cited issues in schools. As noted by Howard and Johnson (2004), a few studies have investigated the importance of administrative support and school culture for reducing teacher stress, but the majority of studies focus on the coping actions that teachers can use, thus treating stress and burnout as individual deficits, and coping as an individual responsibility.

In sum, when teachers experience chronic stress and negative emotions that overwhelm their capacity to use coping skills and feelings of effectiveness, burnout can result. Burnout has negative impacts on teacher wellbeing and efficacy, the classroom environment they create, and student engagement and academic outcomes. However, teaching can be a fulfilling and exciting profession. Supportive, high-quality teacher-student relationships predict fewer disciplinary problems, higher student interest and motivation, and better social-emotional and academic outcomes (Hamre & Pianta, 2001; Jennings & Greenberg, 2009). Teachers feel competent when they believe they possess the curriculum knowledge and teaching skills needed to teach a subject, combined with knowledge of effective instructional, motivational, and classroom management strategies (Pillay et al., 2005). Some researchers have called for change at the level of the school environment. Others have begun to focus on the teachers who work in stressful environments but do not experience symptoms of psychological burnout, as a

complementary perspective to the stress and burnout so often addressed in research (Beltman et al., 2011; Howard & Johnson, 2004).

Developmental Resilience and Resilience in Teaching

Despite frequent exposure to stressful or emotionally arousing events in the workplace, some teachers manage to cope well and resist burnout, leading researchers to investigate whether the concept of resilience might be applied to teaching (Howard & Johnson, 2004). This new line of inquiry reflects a paradigm shift in the field from problem-centered approaches toward strengths-based approaches that can inform practice and program development (Richardson, 2002). Resilience and its application to the teaching profession are discussed below.

The phenomenon and process of resilience. Resilience is defined as "good outcomes in spite of serious threats to adaptation or development" (Masten, 2001, p. 228). The phenomenon of resilience was initially studied in children who managed to develop well despite exposure to adversity and the presence of multiple risk factors (Howard & Johnson, 2004; Masten, 2001; Werner, 1993). Early research efforts focused on determining what was different about these children that made them appear to be invulnerable or invincible to the frequent stress or adversity they experienced (Masten, 2001; Werner, 1993). Publications in the 1970's and 80's suggested that there may be something special about resilient children, an idea which has persisted (Masten, 2001).

Evidence now suggests that resilience arises from basic human adaptational systems that, when protected, predict positive outcomes even when severe adversity is experienced (Masten, 2001; Richardson, 2002). These adaptational systems include intact brain development and cognitive functioning, effective and supportive parenting or other strong adult-child relationships, emotion and behavior regulation skills, engagement in the environment, and motivation to learn (Masten, 2001, p. 234; Werner, 1993). Emerging research in the field of resilience suggests what researchers have long assumed—that resilience arises in the dynamic interactions within and between individuals and their environments across time (Beltman et al., 2011; Richardson, 2002; Masten, 2001). More specifically, through ongoing dynamic interactions, individuals described as 'resilient' appear to create healthier environments for themselves when choices are available, making future opportunities for positive experiences more likely (Masten, 2001).

Resilience in teaching. Application of the concept of resilience to teaching is still in a relatively early stage as compared to the field of developmental resilience. However, researchers have identified some common themes based on synthesis across several studies, and suggestions of avenues for future research to develop the field have been identified. Beltman, Mansfield, and Price (2011) suggest the following definition of teacher resilience: "a dynamic process or outcome that is the result of interaction over time between a person and the environment" (p. 188). Also key is the *capacity* for

resilience, developed through building personal and contextual resources as well as coping strategies to manage challenging situations (Mansfield, Beltman, Broadley, & Weatherby-Fell, 2016). It is also recognized that any definition of teacher resilience carries an assumption that it exists only in times of risk or adversity; individuals who do not face adversity cannot be described as resilient (Beltman et al., 2011; Masten, 2001). Many of the early studies on teacher resilience were descriptive and qualitative in nature, utilizing interviews, questionnaires, surveys, and rating scales as common data collection tools (Beltman et al., 2011). Conclusions from this body of research are useful for identifying common individual and contextual risk factors, as well as individual and contextual protective factors.

Person-based protective factors that have been identified in the teacher resilience literature include strong intrinsic motivation for teaching, altruistic motives, perseverance, internal locus of control, strong interpersonal skills, and self-efficacy or feeling confident in one's competence as a teacher (Beltman et al., 2011; Howard & Johnson, 2004). Motivation for teaching, or a sense of vocation, appears to be important because it is the driving force behind why teachers enter the profession. Many teachers pursue the career because they enjoy working with, or want to make a difference for, children (Gu & Day, 2007). Related are concepts of altruistic motives, such as working for the love of the job rather than personal recognition or reward, and perseverance (Gu & Day, 2007; Howard & Johnson, 2004). Self-efficacy appears to be important in

overcoming challenges at times when those who doubt their capabilities might give up (Gibbs, 2003; Gu & Day, 2007). Self-efficacy may be a multi-faceted construct; teachers high in self-efficacy believe in their capability to control their behavior, cognitions, and emotions in difficult situations (Gibbs, 2003).

Contextual protective factors that are predictive of teacher resilience include administrative support, support from a mentor, social support from peers and colleagues, and positive teacher-student relationships (Beltman et al., 2011; Gu & Day, 2007). Supportive work environments may promote commitment to the teaching profession by becoming places where teachers can grow intellectually within a collaborative community (Gu & Day, 2007). Although all teachers benefit from positive working environments, several researchers have suggested that the need for administrative support may be especially strong for new teachers (Beltman et al., 2011; Cornu, 2009). The implementation of professional learning communities in schools is one way to create a supportive network and encourage both new and veteran teachers to reflect on their own skills and practices within a collaborative and nurturing environment (Cornu, 2009). In addition to relationships with colleagues, teachers also have a basic need to form strong relationships with students (Beltman et al., 2011; Spilt, Koomen, & Thijs, 2011). Spilt, Koomen, and Thijs (2011) argue that the mental representations teachers form about their relationships with students are also important, as they may influence future appraisals of student behavior and ultimately their own responses and wellbeing.

Research progress in teacher resilience. The identification of individual and contextual protective factors, as discussed above, can be characterized as the first of three waves of resilience inquiry (Richardson, 2002). These three waves detail the metatheory of resiliency inquiry, as described by Richardson (2002). In the first wave of the metatheory, resilience is treated as an outcome and resilient qualities of an individual or an environment are identified (Masten, 2001; Richardson, 2002). In the second wave of the metatheory, the focus is on the process of coping with stressors, adversity, or change, during which individuals acquire the qualities from the first wave (Masten, 2001; Richardson, 2002). In their review of teacher resilience research, Beltman, Mansfield, and Price (2011) noted that researchers attempted to investigate the complex and dynamic relationships between risk and protective factors. For example, Gu and Day (2007) used longitudinal data from the Variations in Teachers' Work, Lives and Effectiveness (VITAE) study to investigate the interactions between relevant risk and resiliency factors at different time periods in teachers' careers. In addition, several researchers have provided recommendations for policy change to provide teachers with skills and resources needed to develop resiliency. Most researchers recommend changes to teacher education programs (i.e., support and training to develop self-reflection and self-regulation skills, social skills training, empathy training) or school systems (i.e., support from administration, adequate resources, strong whole-school behavior management strategies, implementation of professional learning communities) (Beltman et al., 2011;

Cornu, 2009; Howard & Johnson, 2004). Richardson (2002) described the third and final wave of research in the metatheory of resiliency inquiry as research on and implementation of techniques to help teachers discover what drives them toward self-actualization and application of those techniques in their lives to develop inner resilience. Social emotional competence (SEC) as promoted by Jennings and Greenberg (2009), may be a skill set teachers can draw on to embrace growth and change in their practice, as they cultivate resilience.

Social Emotional Competence and Teacher Wellbeing

Social and emotional competence, an outcome of social and emotional learning (SEL), is a set of skills needed to succeed in school, at work, in relationships, and in all other aspects of one's life (Jones & Bouffard, 2012). The Collaborative for Academic, Social, and Emotional Learning (CASEL, 2013) developed and disseminates a definition of SEL based on five competencies: self-awareness (recognizing thoughts and emotions and their influence on behavior, recognizing personal strengths and limitations), self-management (regulating thoughts, emotions, and behaviors, including managing stress, controlling impulses, working toward goals, and self-motivation), social awareness (empathizing and perspective-sharing with individuals from diverse backgrounds), relationship skills (establishing and maintaining healthy relationships with diverse individuals), and responsible decision making (considering consequences, standards, ethics, and others before making decisions about one's own behavior) (p. 9).

Teachers with high levels of SEC possess the qualities identified as necessary for coping with stress and demonstrating trait-level resilience. Teachers who engage in proactive coping, or preparing for future problems in the classroom through recognition of risk, tend to feel less threatened by student misbehavior, and are at lower risk of burnout (Chang, 2013). Skills in SEC may promote proactive coping in teachers, by helping them to become aware of their emotions and the emotions of others, and increasing their ability to regulate negative emotions in challenging situations (Jennings & Greenberg, 2009). Teachers high in SEC recognize their own strengths and weaknesses, and are confident in their capabilities (CASEL, 2013). They use their own positive emotions and strengths to promote healthy and exciting classroom environments (Jennings & Greenberg, 2009).

Teachers high in SEC also possess social awareness, enabling them to gauge how their behavior and emotions will impact their relationships with others (CASEL, 2013). They are able to build strong relationships with others, and consider the diverse perspectives of another when making judgments about their behavior or emotional expressions (CASEL, 2013; Jennings & Greenberg, 2009). Teachers who maintain homogenous high quality relationships with the students in their classroom are less likely to experience depersonalization and emotional exhaustion (Milatz, Lüftenegger, & Schober, 2015). This may be because warm teacher-student relationships may help teachers feel competent, and fulfill their need for relatedness (Milatz et al., 2015).

Evidence suggests that teachers high in SEC find teaching more enjoyable and feel efficacious (Jennings & Greenberg, 2009).

The Impact of Teacher Wellbeing on Student Outcomes

Increases in teacher SEC and overall wellbeing positively impact students in the classroom. Students at-risk for academic failure who nevertheless succeed academically tend to have at least one strong, healthy relationship with a teacher who serves as a mentor and a supporter (Downey, 2008). Supportive, warm, low-conflict relationships may be especially important in the early school years in helping students to adapt to the school environment and prepare for future academic success (Hamre & Pianta, 2001). Close, caring, high quality relationships between students and teachers may increase students' school enjoyment and motivation (Milatz et al., 2015). Researchers have found that when students perceive teachers to be caring, supportive, and fair, with high expectations for student success, they are more likely to report engagement and have higher attendance rates and test scores (Baker, 1999; Jennings & Greenberg, 2009; Klem & Connell, 2004; Roffey, 2012).

Warm, supportive teachers are more likely to create caring, safe, positive classroom environments. These environmental characteristics predict student's school satisfaction and sense of security (Baker, 1999). Evidence suggests that high-quality classroom environments predicted larger gains on math achievement assessments for students with low math scores, while smaller gains were obtained by students

experiencing lower quality classroom environments (McLean & Connor, 2015). Older students perceive teachers as supportive when they connect with students emotionally, take time to help students learn, and provide help when needed (Suldo et al., 2009). Suldo and colleagues (2009) found that teacher support is strongly linked to student wellbeing, while Brewster & Bowen (2004) found that teacher support is important for the school engagement of Latino middle- and high-school students.

Theoretical Basis for Teacher Wellbeing Training Programs

In order to determine whether the results of intervention studies are meaningful, they must be situated in theory (Burns, 2011). Theoretical or conceptual foundations provide structure to guide research advancements, and adaptations to diverse settings (Burns, 2011). Jennings and Greenberg (2009) proposed the prosocial classroom model of teacher SEC and its relationship to classroom and student outcomes (p. 494). The model can be situated in ecological systems theory and prevention science, to serve as a basis for interpretation of investigations of relationships described by the model. A brief description of ecological systems theory and prevention science precedes presentation of the prosocial classroom model below.

Ecological systems theory is defined as the study of the interactions between a human and the changing, multiple environments within which it lives over time (Bronfenbrenner, 1977; Burns, 2011). Ecological systems theory is often illustrated and described as nested systems of immediate and distal environments, and the bidirectional

relationships between them (Bronfenbrenner, 1977). The theory also accounts for the larger social and cultural context within which an individual and related systems are embedded (Bronfenbrenner, 1977). Apter and Conoley outlined four assumptions for the operation of an ecological system as cited in Burns (2011, p. 134): (a) individuals are an inseparable part of a system; (b) disturbance is viewed as discordance in the system rather than a problem centered within the individual; (c) dysfunction is the result of a mismatch between an individual's skills and knowledge and environmental demands; and (d) effective interventions focus on changing the system. Research on the development of wellness promotion and SEC training programs must be situated within an ecological systems theory of development and functioning. Teachers are part of classroom and school systems, influenced by the local and national political climate, as well as relationships within the classroom, school, and community. Research has demonstrated that SEC and resilience can have positive impacts on the individual by changing the way they interact with others, which in turn changes the behavior elicited from the other (Jennings & Greenberg, 2009; Spilt et al., 2011). Classroom systems are dysfunctional when teachers lack skills needed to meet the demands of their positions. Wellness promotion through SEC training is one avenue of investigation into changing elements of the teacher-centered system to improve student outcomes.

An additional theoretical perspective underlying the current project is prevention science. The goal of research in a prevention science perspective is to identify and

prevent or mitigate risk factors for psychological dysfunction before they manifest as disorder, while simultaneously identifying and promoting protective factors (Burns, 2011; Coie et al., 1993). Coie et al. (1993, p. 1014-1015) provide four principles of prevention science: (a) address fundamental causal factors between intervention, risk, and protective factors; (b) address risk factors before they stabilize as predictors of dysfunction; (c) target individuals at highest risk for dysfunctional development; and (d) coordinate action in each domain of functioning. Recent conceptualizations of prevention science have increased the focus on wellness promotion through strengths-based approaches (Burns, 2011). The current research on teacher SEC training as a protective factor for wellness promotion benefits from grounding in the prevention science framework.

Finally, the current research project is guided by the prosocial classroom model presented by Jennings and Greenberg (2009). Within the prosocial classroom model, Jennings and Greenberg (2009) hypothesize that teacher SEC and wellbeing influence the classroom environment and student outcomes in three major ways: first, SEC is an important contributor to developing supportive teacher-student relationships; second, high teacher SEC supports effective classroom management; and third, high teacher SEC influences effective implementation of a social and emotional curriculum. The model also recognizes the influence of contextual factors within the school and community that impact teachers' SEC (Jennings & Greenberg, 2009). Despite the numerous studies

suggesting positive teacher outcomes resulting from high SEC, training and support to develop these skills in teachers is limited (Jennings & Greenberg, 2009; Jones & Bouffard, 2012). Researchers argue that it is nearly impossible for teachers to help students build SEL skills when they themselves do not possess the skills they attempt to teach (Jennings & Greenberg, 2009; Jones & Bouffard, 2012, p. 14). High fidelity implementation of SEL programs in schools is important, as research consistently suggests positive effects of SEL programming on: students' social emotional competencies; attitudes about self, others, and school; prosocial behaviors; and academic performance, as well as reduced conduct and internalizing problems (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Therefore, research on interventions to promote teacher wellness and development of SEC skills grounded in the prosocial classroom model, the prevention science framework, and ecological systems theory is an important undertaking.

Training Programs to Promote Teacher Wellbeing and Resilience

Although the field of teacher wellness and resilience promotion is still in its infancy, several techniques and training programs have been developed, which will be examined briefly below.

Emotional intelligence. Emotional intelligence (EI) can be defined as 'the ability to monitor one's own and other's feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions' (Salovey & Mayer, 1990, p.

189). Researchers in the field have noted that not all individuals have the same EI skills, and have hypothesized that EI may serve as a useful framework for identifying skill needs for emotion understanding (Chan, 2006). Relationships between EI and teacher burnout have been investigated recently. For example, Chan (2006, p. 1047-1048) demonstrated that perception and management of emotions directly impacted emotional exhaustion, sensitivity to others' emotions, and depersonalization, while emotion problem-solving skills directly impacted personal accomplishment.

Mindfulness. The study and practice of mindfulness has experienced an enormous increase in popularity in the past several years (Kabat-Zinn, 2003). Mindfulness may be defined as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (Kabat-Zinn, 2003, p. 145). In its purest form, mindfulness is not outcome-based. Instead, it is practice to increase one's ability to fully experience the present moment (Kabat-Zinn, 2003). Increases in mindfulness have been linked to lower self-report of burnout indicators (Abenavoli, Jennings, Greenberg, Harris, & Katz, 2013).

Mindfulness-based stress reduction. Mindfulness based stress reduction, or MBSR, was originally developed for use in the medical field to complement medical treatment (Kabat-Zinn, 2003). MSBR training included teaching meditative practice to increase individual responsibility for one's own wellbeing, and attentive participation in moving towards healthy outcomes (Kabat-Zinn, 2003). MSBR training in schools

includes training in techniques such as body scan, awareness of breathing, and mindful yoga, among other practices, in programs spanning several weeks (Frank, Reibel, Broderick, Cantrell, & Metz, 2015). Research investigating MSBR with teachers to prevent burnout has demonstrated positive results following training for program acceptability and feasibility, increased mindfulness skills, increased attention and working memory skills, increased emotional self-regulation, increased self-compassion, and lower levels of stress as compared to controls (Fjorback, Arendt, Ornbol, Fink, & Walach, 2011; Frank et al., 2015; Meiklejohn et al., 2012; Roeser et al., 2013). Training in MSBR may also increase teachers' skill in managing student behaviors in the classroom and developing strong teacher-student relationships (Meiklejohn et al., 2012).

Mindfulness-based cognitive therapy. Mindfulness-based cognitive therapy (MBCT) uses elements of cognitive behavioral therapy in combination with mindfulness practices to facilitate a detached view of one's own cognition (Fjorback et al., 2011). Participants gain awareness of their thoughts, and strengthen their skills in recognizing rumination (Fjorback et al., 2011). Following several weeks of training, researchers have found increased attention, decreased anxiety, and decreased problem behavior in students (Meiklejohn, 2012). MBCT has been used frequently with individuals experiencing depression, and has been implemented in schools less frequently. However, elements of both cognitive behavior therapy (CBT) and mindfulness practices may be beneficial for teachers. For clarification, CBT in the absence of a mindfulness focus is an approach that

promotes emotion regulation, cognitive restructuring (changing thought patterns), and problem-solving skills by teaching individuals to examine the convergence of their thoughts, feelings, and behavior (Cook et al., 2017).

Cultivating awareness and resilience in education. Cultivating Awareness and Resilience in Education (CARE) is a teacher professional development program focused on wellness promotion, mindfulness skill building, and stress reduction (Jennings, Snowberg, Coccia, & Greenberg, 2011). The CARE program, like other school-based mindfulness programs, takes place in a several-week training format, with a daily time commitment (Jennings et al., 2013). Pilot studies indicated that high-risk groups may benefit more from CARE than teachers working in low risk areas (Jennings et al., 2011). Randomized controlled trials demonstrated that participants experienced enhanced wellbeing, efficacy, and mindfulness, and reduced stress as compared to controls (Jennings et al., 2013). In addition to these positive results, researchers have found the CARE program to be acceptable, feasible, and effective with teachers (Jennings et al., 2013). Interview data revealed that teachers continued to use mindfulness practices in the classroom after training was completed (Sharp & Jennings, 2016).

Other mindfulness-based training programs for teachers include Stress Management and Relaxation Techniques (SMART), Inner Resilience, Mindful Schools, and Mindfulness, Courage, and Reflection for Educators (Roeser, Skinner, Beers, & Jennings, 2012). Although research on several of these programs is in the early stages,

results obtained thus far are promising, suggesting that mindfulness-based programs may be effective in increasing teacher self-efficacy and wellbeing, and reducing teacher stress and indicators of burnout (Roeser et al., 2012). Research on the effectiveness of mindfulness-based training techniques is based in a logic model which hypothesizes that mindfulness training leads to changes in teachers' habits of mind, which in turn impacts teacher outcomes (health, wellbeing, engagement), classroom outcomes, and student outcomes (Roeser et al., 2012).

Acceptance and commitment therapy. Acceptance and commitment therapy (ACT) emphasizes orienting one's behavior toward values to increase psychological flexibility (Cook et al., 2017; Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Psychological flexibility is defined as the ability to become more aware of the present moment, and to change or persist in behavior as needed to remain aligned to guiding values (Hayes et al., 2006). The 'acceptance' in ACT refers to the active embrace of events, without attempt to change or avoid them (Hayes et al., 2006). Practice in five additional processes, including contact with the present moment, values clarification, committed action, self as context, and defusion promotes psychological flexibility (Hayes et al., 2006). Early evidence suggests that ACT may be effective for treating anxiety disorders. Minimal empirical research has examined the use of ACT with teachers, although it holds promise as a treatment for teachers at risk of burnout because it does not require teachers to deny or attempt to 'fix' their negative thoughts and feelings related to

teaching (Emery & Vandenberg, 2010). In fact, using cognitive and emotional resources to change negative thought patterns to positive ones may continue to deplete teacher's resources and distract them from their professional goals and values (Emery & Vandenberg, 2010). Instead, ACT emphasizes full participation and acceptance of the entire range of experiences in teaching, including painful or uncomfortable experiences, without attempts to change or control them (Emery & Vandenberg, 2010).

Limitations of Existing Programs and Benefits of the ARC

Many of the training programs outlined above offer promising results for increasing teacher mindfulness, SEC, and resilience. However, limitations to existing programs can be identified and will be outlined below. These limitations provide opportunities for the ARC to fill voids left by other programs. The ARC was designed to be a low-cost, feasible, acceptable, convenient, and comprehensive training program to effectively promote resilience and wellbeing.

One limitation of existing teacher mindfulness training programs is the amount of resources needed to implement the program. Some programs require extensive training that may be cost-prohibitive for many schools and individual teachers. For example, CARE is provided as four day-long sessions spread out over four to five weeks, or as an annual five-day summer retreat. The ARC was designed to be cost-effective, both in terms of school financial commitment and teacher time commitment. Teacher ratings of program acceptability and perceived benefit will be investigated in the current study.

These ratings will add to the knowledge base regarding practices teachers view as feasible and beneficial.

An additional limitation of existing interventions is that they each prescribe a specific set of skills that must be practiced in order to gain the benefit of the program. While many teachers may find each individual program acceptable and feasible to fit into their practice, others may not. If adopted school-wide, some teachers may feel alienated by the introduction of practices that feel unnatural to them. Most of the existing programs focus on increasing emotion awareness and managing cognitions. These practices show benefit for many, but may be off-putting for some. A considerable strength of the ARC is that it introduces several unique practices that promote global mind and body wellness, divided into separate modules (Cook et al., 2017). Individuals can gain knowledge of and exposure to multiple evidence-based practices in the course of one intervention, and may choose which of the practices feel good to them and fit into their lifestyle. By providing a comprehensive and holistic approach to increasing personal wellness and resilience, the ARC developers hypothesize that parts of the training will appeal to all teachers.

A unique aspect of the ARC is a focus on physical health and wellness as a component of overall resilience and wellbeing. To the author's knowledge, none of the programs outlined previously include a specific focus on healthy habits. In contrast, the ARC dedicates a full lesson (35 minutes of instruction plus additional discussion and follow-up practice) to exploring the benefits of therapeutic lifestyle choices, including

healthy eating habits, physical activity, healthy sleep routines, time spent in nature, leisure and recreation, and relaxation.

Within the therapeutic lifestyle choices module, special focus is given to the evidence-based benefits of exercise, sleep, and nutrition, as extensive research over the past several decades indicates the importance of these three practices for overall health and wellbeing. Research indicates that physical activity improves overall health by reducing risks for heart disease, stroke, high blood pressure, cartilage and bone degeneration, and some cancers (Centers for Disease Control and Prevention, 2014; U.S. Department of Health and Human Services [HHS], 1996). Physical activity also helps to prevent obesity, increase physical strength, decrease the risk of depression and anxiety, and promote general wellbeing (U.S. Department of Health and Human Services, 1996). Additionally, adequate sleep measured in both quantity and quality has been associated with reduced depression risk, reduced sleepiness, increased capacity for learning and memory, increased physical health, and increased skill in emotion regulation and expression (Pilcher, Ginter, & Sadowsky, 1997; Tononi & Cirelli, 2006; Watson et al., 2015). The National Sleep Foundation, The American Academy of Sleep Medicine, and the Sleep Research Society all agree that adults should regularly sleep 7 or more hours per night (Hirshkowitz, 2015; Watson et al., 2015). Fewer than 7 hours of sleep on a regular basis is associated with increased risk of weight gain, heart disease, depression, decreased immune function, and impaired performance (Watson et al., 2015). Finally,

nutrition has been empirically linked to overall health. Poor nutrition is related to overweight and obesity, heart disease and high blood pressure, type 2 diabetes, and colorectal and breast cancers (U.S. Department of Health and Human Services and U.S. Department of Agriculture [USDA], 2015). To promote optimal health, HHS and the USDA urge Americans to eat a variety of nutrient-dense foods in appropriate amounts, while limiting calories from added sugar, saturated fats, and sodium (HHS & USDA, 2015). From the brief summary above, it is clear that the health benefits of sleep, nutrition, and physical activity intersect to have a profound impact on physical and mental health. For this reason, the ARC deliberately includes these and other lifestyle practices into a module, in order to provide teachers with ideas of cheap, readily available strategies to promote health and wellbeing.

Operating from an ecological systems perspective, in which dysfunction results from a mismatch between the environmental demands and an individual's skills and knowledge, effective interventions focus on changing the system (Apter & Conoley, 2011). The ARC, grounded in the ecological systems perspective, aims to have broad influence on functioning in several domains, so that several facets of wellbeing can be addressed. In addition, prevention science theorists advocate for coordinated action in each domain of functioning (Biglan, Flay, Embry, & Sandler, 2012; Coie et al., 1993). Physiological and psychological problems often co-occur and stem from similar origins, but intervention attempts are fragmented (Biglan et al., 2012). By addressing mental and

physical health, SEC, values clarification, gratitude practices, and relationship management, the ARC attempts to provide training in broad wellbeing using tools and strategies that can be applied easily in all domains of an individual's life. The ARC curriculum will be described in detail in the sections that follow.

The ACHIEVER Resilience Curriculum

The ARC is a training program that promotes teacher wellbeing by training teachers in resilience practices, including skills, habits, and routines (Cook et al., 2017). The ARC was developed to align with the prosocial classroom model proposed by Jennings and Greenberg (2009). The ARC incorporates skill practice elements from three theories of behavior or cognition change: positive psychology, cognitive behavior therapy, and acceptance and commitment therapy. Two meta-practices are introduced early in the curriculum that provide support for the development and use of other practices. These practices are defined by Cook et al. (2017, p. 16) as "(1) values clarification and commitment, and (2) awareness and empowerment through mindfulness-based practices." First, teachers clarify their values as educators, and make commitments to let their values guide their actions and practice as educators. Teachers are also trained in mindfulness-based practices such as mindful breathing, mindful STOP, mindful commute, and mindful breaks with students (Cook et al., 2017). These practices are intended to provide practice for acknowledging thoughts or experiences—especially aversive ones—without judgment (Abenavoli et al., 2013). Mindful practice may be used

throughout a teacher's day, and may help teachers identify triggers for emotion or stress reactions so that coping mechanisms can be used instead (Abenavoli et al., 2013). Values clarification and mindfulness practices were referenced often in ARC training sessions, and in reference to other ACHIEVER wellness practices (Cook et al., 2017).

ARC practice areas. The ARC includes eight distinct practice domains, each focusing on a routine or skill that teachers can learn to integrate into their professional and private lives (Cook et al., 2017). The practice areas were selected with the dual purpose of reducing educator stress and burnout, and increasing subjective feelings of wellbeing (Cook et al., 2017). The title of the curriculum—'ACHIEVER'—is an acronym, with each letter identifying one of the eight practice domains. The eight domains were defined by Cook et al. (2017, p. 18-19):

> (1) *A*wareness and empowerment through mindfulness-based practices; (2) *C*hoosing to pay attention to the positive and practicing gratitude; (3) *H*elping and doing good deeds for others; (4) *I*dentifying unhelpful thoughts and altering them to be more helpful; (5) *E*ngage in good sleep, exercise regularly, and eat well; (6) *V*alues clarification and commitment; (7) *E*stablishing good social support, role model(s), and a mentor (relationships); and (8) *R*ewarding yourself through relaxation and recreation.

The ARC is unique in that the eight practice domains were intended to be used simultaneously to produce the greatest benefit, although each of the eight domains may

also be used and practiced independently (Cook et al., 2017). This feature offers users of the curriculum considerable flexibility, and allows each person to tailor the ARC to fit their lifestyle and preferences, especially at early stages of behavior change and skill development.

The ARC may be situated as an input into the prosocial classroom model proposed by Jennings and Greenberg (2009), as illustrated in Table 1, below. Jennings and Greenberg (2009) developed the prosocial classroom model to illustrate the hypothesis that teacher SEC and wellbeing influence classroom and student outcomes by promoting healthy teacher-student relationships, effective classroom management, and effective implementation of an SEL curriculum. The ARC, consisting of multiple practices to promote wellbeing and resilience, is hypothesized to increase teachers' SEC and wellbeing. In addition to the outcomes of teacher SEC identified by Jennings and Greenberg (2009), it is hypothesized that teachers will experience immediate and long-term health and wellness benefits, and schools will experience reduced teacher attrition.

Table 1.
Inputs and Outcomes of the ACHIEVER Resilience Curriculum for Teachers

Input	Target Population	Intervention	Outcomes		
			Proximal	Intermediate	Distal
ACHIEVER Resilience Curriculum	Teachers: Elementary Middle Secondary	ARC Practices: • Values Clarification • Mindfulness-Based Practices • Cultivating Positive Emotions • Practicing Gratitude • Managing Negative Emotions • Therapeutic Lifestyle Practices • Connecting with Others	Decreased Stress Increased healthy habits Increased subjective wellbeing	Higher quality teacher-student interactions Improved implementation of evidence-based practices Effective classroom management	Teacher retention Increased student achievement and SEL outcomes Improved health

Summary of Literature Review

Teaching is an exciting, rewarding, and challenging job. However, high demands placed on teachers for daily behavior management and instructional differentiation, as well as academic achievement and social/emotional development, causes some teachers to become stressed or emotionally exhausted (Gu & Day, 2007; Pillay et al., 2005; Renard, 2003). When teachers are no longer able to cope, or when daily demands interfere with their professional goals and values, teachers become burned out and may leave the profession (Oberle & Schonert-Reichl, 2016; Roffey, 2012). Alarming teacher attrition rates worldwide point to the importance of continued research to determine what enables some teachers to survive and thrive amid professional challenges (Cornu, 2009; Gu & Day, 2007). Research in the emerging fields of teacher SEC and resilience point to

several traits and contexts that promote overall wellbeing (Beltman et al., 2011). Not only does resilience hold promise for increasing retention of early-career teachers, but it may help all teachers perform more effectively. Social and emotional competence encompasses the trait-level resilience characteristics identified in literature; SEC is necessary if teachers are to be role-models of self-regulation and self-awareness for their students (Cornu, 2009; Gu & Day, 2007; Jennings & Greenberg, 2009; Jones & Bouffard, 2012). Research on the impact of teacher SEC (measured as strong relationships, structured environment, and perceived support) on student outcomes such as engagement, wellbeing, and academic success is promising (Baker, 1999; Brewster & Bowen, 2004; Jennings & Greenberg, 2009; Suldo et al., 2009).

Perhaps the most exciting message to be derived from the teacher resilience literature is that resilience can be learned and fostered in school environments (Beltman et al., 2011). The ARC is proposed as a theoretically-based, comprehensive teacher professional development curriculum that promotes overall wellbeing and reduces emotional exhaustion, an indicator of chronic stress and burnout. It is hypothesized that participation in the ARC will increase teacher's feelings of connectedness and efficacy, practice of personal habits, and quality of teacher-student relationships. In addition, it is hypothesized that the ARC will reduce emotional exhaustion, and that the time commitment and format of the ARC will be acceptable to teachers. Knowledge gained from this study regarding the effectiveness of the ARC for increasing indicators of

teacher's subjective wellbeing, healthy habits, and positive relationships with students, and decreasing emotional exhaustion will add to the research base on interventions to increase teacher wellbeing and resilience.

CHAPTER 3. Method

Data Source

The dataset analyzed in this study was collected in a large urban school district by Dr. Clayton Cook. This dataset is one of a small number of studies performed to evaluate the effectiveness and acceptability of the ARC for promoting teacher wellness. The current study represents the first analysis of this dataset. Dr. Cook designed the study method and procedures, and partnered with staff within the school district to facilitate the collection of all data. The data sample used in this analysis includes demographic information and pre- and post-test data for 67 teachers (n = 33 in the intervention condition and n = 34 in the control condition) in six elementary schools collected using several measures of wellbeing. Teachers in the intervention condition also provided ratings of the acceptability and feasibility of the ARC training.

Analytic Sample

The teachers participating in this study were recruited from six volunteer elementary schools that were each members of a large urban school district in the Western region of the United States. At the time of data collection for the current study,

the school district, including the six elementary schools, was engaged in a consultative partnership with Dr. Cook as part of a district-wide effort to scale-up the implementation of a multi-tiered system of support (MTSS) focused on improving social, emotional, and behavioral outcomes for students. As part of the MTSS implementation process, a readiness assessment was conducted which revealed that stress and burnout among teaching staff was high and would serve as a barrier to the adoption and implementation of evidence-based practices associated with MTSS (e.g., school-wide positive behavior intervention and supports and delivery of a social-emotional learning curriculum). In response to this barrier, a collaborative research project was initiated with district administrators to test the impact of an intervention focused on supporting teachers to acquire skills, habits, and routines that would reduce stress and promote their wellbeing in school. District administrators facilitated contact with elementary school principals, and six elementary schools volunteered to serve as partners for this research project given their interests in promoting teacher wellbeing. Demographic information for each of the six schools can be found in Table 2, below.

Table 2.
Demographics of Participating Schools

	School 1	School 2	School 3	School 4	School 5	School 6
Number of Students	352	314	225	452	306	287
Student Characteristics						
Race/Ethnicity			(%)			
White	18	51	2	20	19	28
Black	16	12	66	16	8	10
Latino/Latina	52	12	15	52	60	42
Asian	10	11	2	10	8	8
Other	1	1	1	1	4	3
Free/Reduced Lunch	69	52	96	73	71	66
Achievement[a]	68	71	24	48	52	66
Special Education	13.8	13	18.4	19	14.6	14.2
Number of Teachers	15	13	11	18	13	12
Annual Teacher Turnover (%)	5.3	6.1	18.8	16.7	5.4	8.3

Note: [a] percent of students meeting or exceeding state standards on large-scale accountability assessments

Participants. Using a nomination form, principals from each of the six schools nominated teachers who were experiencing significant job-related stress and burnout and who could benefit from support and training to develop healthy lifestyle practices and enhance wellbeing. Teachers were contacted individually by research staff following nomination, and were offered the opportunity to participate in a free web-based training program to support the development of stress-management skills and promote overall

wellbeing. School administrators provided incentives and support to teachers who participated in the study. Examples of incentives included providing substitute teacher support on the days teachers attended trainings, and excusal from other responsibilities or time-commitment expectations. Of 82 teachers contacted, 73 teachers initially expressed interest, and 67 provided informed consent to participate in the study.

Sixty seven kindergarten through 5th grade teachers (52 female, mean age = 35.79 years, *SD* age = 8.38 years) participated in this study. The youngest teacher participant was 25 years old, and the oldest was 57. Fifty six were general education teachers and 11 were special education teachers. The teachers had a mean of 12.85 years of teaching experience (*SD* = 8.41, minimum = 2 years, maximum = 35 years), and 28 participants held a Master's degree. The majority of the sample self-identified as white (*n* = 49; 73%), followed by Latino/Latina (*n* = 8; 12%), Black/African American (*n* = 6; 9%), and Asian (*n* = 4; 6%). These percentages roughly match recent U.S. Census Data, although the percentage of Black/African American teachers in this sample is lower than national estimates of representation in the population. See Table 3 below for additional detail on the demographic characteristics of the sample disaggregated by experimental condition.

Table 3.
Demographic Characteristics of the Sample by Condition

	Intervention (*n* = 33)		**Control (*n* = 34)**	
	Mean	*SD*	Mean	*SD*
Age[a]	35.3	8.4	36.2	8.4
Teaching Experience[a]	12.5	8.5	13.2	8.4
	Female	Male	Female	Male
Gender	25	8	28	7
Race/Ethnicity[b]	Number	Percent	Number	Percent
White	24	72.7	25	73.5
Black/African American	3	9.1	3	8.8
Latino/Latina	3	9.1	5	14.7
Asian	3	9.1	1	2.9
TOTAL	33	100.0	34	99.9
Grade taught	Number	Percent	Number	Percent
K	3	9.1	3	8.8
1	3	9.1	3	8.8
2	9	27.3	11	32.4
3	8	24.2	6	17.7
4	7	21.0	7	20.5
5	3	9.1	4	11.8
TOTAL	33	99.8	34	100.0

Note. [a]in years; [b]self-identified.

Procedures

Design. The current study utilized a randomized block controlled design with data collected at pre-intervention and post-intervention. The pre-intervention data were

collected prior to group assignment. Participants within each school were matched on baseline data to create teacher pairs with comparable pre-scores on the Teacher Subjective Wellbeing Questionnaire (TSWQ; see Appendix A). Next, teachers within each pair were randomly assigned to either the ARC intervention condition (n = 33) or a delayed attention control condition (n = 34). Comparisons between the TSWQ baseline scores of the intervention and control groups on the demographic characteristics Years of Experience and Age revealed no significant group differences (Years of Experience: $t(65) = 0.27$, $p = .79$; Age: $t(65) = -0.36$, $p = .73$). Chi-square analyses comparing TSWQ baseline scores of the intervention and control groups on the demographic characteristics Gender, Ethnicity, and Grade-level indicated no relationships between frequency counts of each demographic variable and assigned condition (Gender: $\chi^2(1) = 0.24$, $p = 62$; Ethnicity: $\chi^2(3) = 1.55$, $p = .67$; Grade Level: $\chi^2(5) = 0.21$, $p = .99$).

Teachers in the control condition were offered the opportunity to complete the ARC training program following participation in the control group. Post-intervention data were collected two weeks after the final session for teachers in both conditions. The majority of the data were collected via the Qualtrics web-based platform. Prompts and reminders were sent every three days and teachers were provided with a $20 incentive at each data collection time point as an incentive to complete pre- and post-surveys. Observations of teacher-student interactions were conducted at the same post time point as survey data collection.

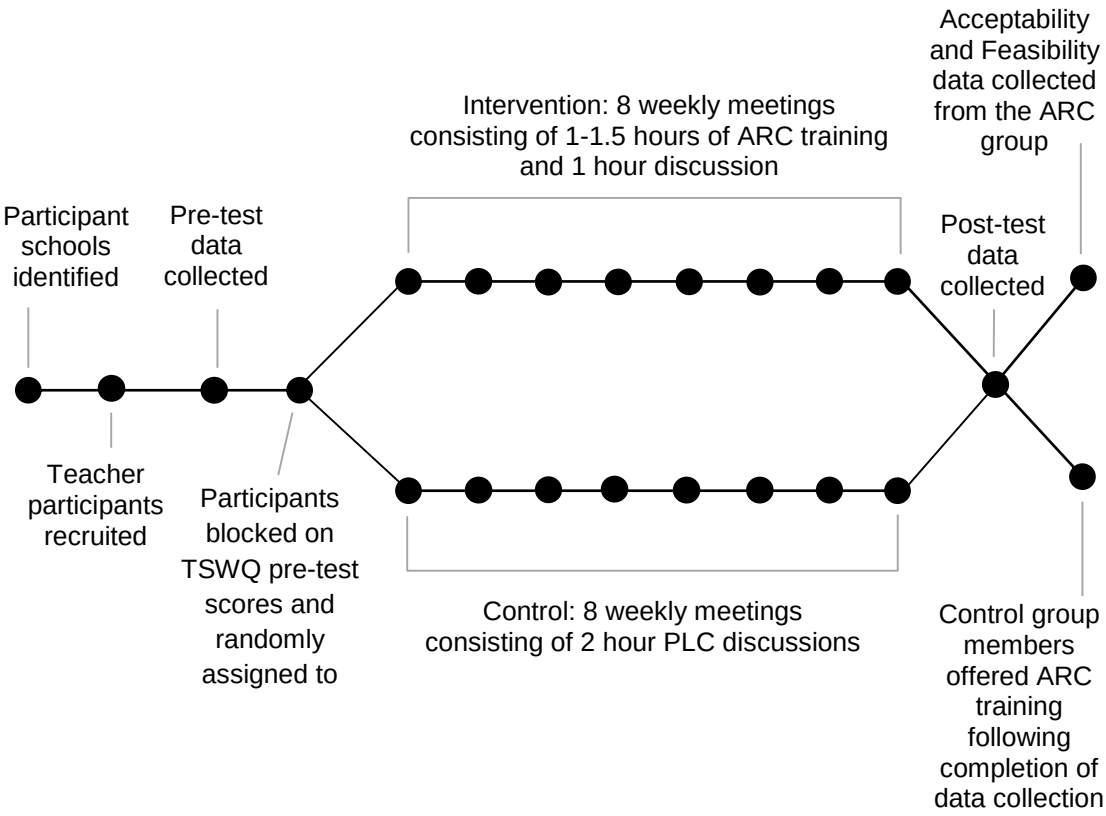

Figure 1. Timeline of activities and data collection.

Control group activities. To account for the potential effect of increased attention to teachers, teachers in the delayed attention control group met as a professional learning community (PLC) to discuss teacher social and emotional functioning, share resources obtained via their own research, and discuss classroom practices focused on improving students' classroom behavior. Teachers in the control group met on the same number of occasions (8) and for approximately the same number of hours (16) as

participants in the treatment group. Teachers in both groups received continuing education hours for their afterschool participation in these activities.

Intervention group activities. The intervention condition involved two components: (1) completion of weekly lessons via a massive open online course (MOOC) and (2) participation in a weekly consultative session to review and plan for applying specific wellbeing promoting practices. Members of the intervention group participated in 8 weekly ARC asynchronous sessions delivered as a MOOC on the *edX* platform titled *Becoming a Resilient Person* (https://www.edx.org/course/becoming-resilient-person-science-stress-uwashingtonx-ecfs311x- 0). This course was developed by Dr. Cook at the University of Washington and includes modules that focus on specific wellbeing promoting practices included in ARC and involves the following learning sequence: (a) pre-lesson readings/videos, (b) pre-lesson quiz, (c) participation in lesson, (d) post-lesson quiz to ensure comprehension, and (e) application exercises (i.e., teach practice accountability partner, apply the practice, and reflect on how it went). Including the readings/videos, lesson, and quizzes, each lesson required roughly 1-1.5 hours per week. Concurrent with completion of the MOOC, intervention group members participated in weekly 1 hour web-based synchronous consultative sessions with the developer of the ARC via the GoToMeeting platform to review MOOC lesson content and plan how to implement the resilience practice. Moreover, this time was used to allow participating teachers to ask questions, receive answers, and provide examples of how to integrate the

resilience practices into their professional and personal lives. Following training each week, participants were encouraged to apply the resilience practices they learned in the weekly session in several ways. First, each member of the intervention group selected a practice accountability partner in the first week, which was someone in the teachers' personal lives who they taught each resilience practice to and also who could hold the teachers accountable to apply the resilience practice. Then, following each weekly training session, participants would teach the skill to their practice partner, apply the resilience skill in their professional and personal lives, and engage in brief interactive reflection with others about applying the resilience practice using a discussion forum embedded in the *edX* MOOC.

The ACHIEVER Adult Resilience Curriculum. The ARC is a theoretically-based wellness promotion training program for teachers. It is unique in that it integrates several practices shown in research to be effective in reducing stress and promoting positive outcomes (e.g., mindfulness, gratitude practices, values clarification, sleep hygiene, healthy eating habits, physical activity) into one comprehensive program (Cook et al., 2017). The ARC was designed to assist teachers in becoming resilient by providing training and support to learn and apply specific wellbeing promoting skills, habits, and routines (Cook et al., 2017). The ARC is conceptually based on the prosocial classroom model, which positions teachers' SEC and wellbeing as key elements in creating a healthy and nurturing classroom environment characterized by student success (Jennings

& Greenberg, 2009). In the prosocial classroom model, it is hypothesized that socially and emotionally competent teachers develop supportive relationships with their students, manage their classrooms efficiently and effectively, and are well-equipped to implement social-emotional learning curriculum for students (Jennings & Greenberg, 2009). The ARC was designed to be delivered using a variety of potential formats, including in-person didactic training, web-based delivery, coaching, or consultation. For the purposes of this study, the ARC was delivered solely by web-based technology but combined didactic and consultative supports.

Measures and Materials

Subjective Wellbeing. Teacher wellbeing was measured using the Teacher Subjective Wellbeing Questionnaire (TSWQ; Renshaw, Long, & Cook, 2016). The TSWQ is an eight item instrument used to assess self-reported wellbeing among teachers. The authors of the TSWQ operationalized teacher subjective wellbeing as "teachers' self-perceptions of healthy and successful functioning at work" (Renshaw et al., 2016, p. 5). The TSWQ consists of two four-item subscales: School Connectedness and Teaching Efficacy. The School Connectedness subscale measures teacher's feelings of support by and relationships with others at school; the Teaching Efficacy subscale measures appraisals of one's teaching behaviors with respect to meeting environmental demands (Renshaw et al., 2016; see Appendix A). Responses to all items are given on a four-point Likert-type scale. Validation studies revealed strong construct validity, structural validity

(internal consistency α = .83; convergent validity between scales and with other measures of perceived school support), and external validity (test-retest reliability r = .89, p < .01; concurrent-discriminant validity with measures of teacher stress and burnout; Renshaw et al., 2016). Both subscales were strong predictors of stress and burnout. Coefficient alphas calculated from the data gathered in this study for the two subscales (school connectedness α = .82; teaching efficacy α = .87) and total scale (α = .85) indicated acceptable internal consistency reliability.

Sleep Habits. Participant's daily hours of sleep were assessed using a one-item questionnaire (see Appendix B). Responses provided were the average number of hours of sleep the participant engaged in nightly over the past week. Sleep was used in the current study as a proxy for healthy habits, and was chosen due to empirical connections between sleep, health, and brain function (Goldstein & Walker, 2014). Specifically, sleep loss results in impaired memory, attention, and alertness, increased stress, anxiety, and emotional reactivity, decreases in positive affect and life satisfaction, and increased sleepiness and physical health complaints (Breslau, Roth, Rosenthal, & Andreski, 1996; Goldstein & Walker, 2014; Pilcher, Ginter, & Sadowsky, 1997). Sleep loss is a significant risk factor for major depression (Breslau, Roth, Rosenthal, & Andreski, 1996; Goldstein & Walker, 2014). Conversely, adequate sleep promotes processing of affective information, optimal emotion reactivity, synaptic downscaling—a weakening of synaptic strength during sleep—to facilitate plasticity (learning and memory formation), and

performance enhancement on cognitive tasks (likely due to increased signal-to-noise ratios in neural circuitry, as weaker synaptic connections contributing to noise disappear during downscaling) (Goldstein & Walker, 2014; Tononi & Cirelli, 2006). The National Sleep Foundation recommends 7-9 hours of sleep each night for adults ages 18-64 (Hirshkowitz, 2015).

Emotional exhaustion. Emotional exhaustion, an indicator of burnout, was measured using the Abbreviated Maslach Burnout Inventory (MBI). The Emotional Exhaustion subscale of the MBI measures feelings of work-related emotion overextension and exhaustion (Maslach et al., 1996; see Appendix C). The full subscale demonstrates good reliability (internal consistency: α = .90, test-retest reliability: r = .82 for a 2-4 week interval, r = .60 for a 1 year interval), convergent validity, and discriminant validity (Maslach et al., 1996). The full Emotional Exhaustion subscale includes nine items. Each item is a statement about the respondent's attitudes or feelings, and answers are given on a 7-point Likert scale describing the frequency of experience with the emotion or attitude in question (Maslach et al., 1996). An abbreviated version of the Emotional Exhaustion subscale consisting of three questions determined to be most pertinent to the educational context were used. Internal consistency estimates indicated acceptable reliability (α = .81) and test-retest reliability computed only for the control group indicated acceptable temporal stability (r = .74).

Teacher-Student Interaction. Interactions between participating teachers and the students they taught were observed and rated post-intervention. The Teacher-Student Interaction Rating was developed based on a direct behavior rating that represents a hybrid assessment approach in which a person observes specific behavior and then completes a rating at the end of a predetermined amount of time. Observations were performed by two school psychology doctoral students who had previous experience conducting classroom observations. These students were trained by the ARC developer using standard procedures for training and calibrating ratings of observers. Observational ratings were not completed until the two observers demonstrated inter-rater reliability (IRR) at an acceptable level (>.80) in response to coding scenarios. After completing observations of teacher behavior, observers rated teachers on two items with a 5-point scale (1 = Not at all to 5 = Very great extent). The first question focused on positive interactions: "Teacher interactions with students were positive (praise statements, calm responses to problem behavior, smiling with students, encouraging statements)." The second question focused on contingent responses to students: "Teacher contingently responded to student statements, questions, and behavior by providing relevant information or asking relevant questions" (see Appendix D). Positive teacher-student interactions represent interactions initiated by teachers to increase students' emotional and affective support and was operationally defined as behaviors initiated by the teacher that involved gestures or statements indicating approval/recognition, expressing interest

or empathy to the student, laughing or having fun with a student, and other teacher behaviors that were positive in nature and intended to make the student feel good. Contingent responding represents interactions to support learning and was operationally defined as teacher behaviors that focus on responding to student needs as they emerge, such as providing specific feedback, asking relevant probing questions, and/or providing relevant examples to enhance understanding. Inter-rater reliability was calculated on 20% of the pre- and post-measures, and results indicated acceptable IRR estimates (pre- r = .81; post- r = .74) according to Nunnally & Bernstein (1994).

Acceptability and Feasibility. Teachers provided agreement ratings in response to three questions related to acceptability of the ARC and three questions related to feasibility of use of the ARC intervention drawn and adapted from the Usage Rating Profile-Intervention (Chafouleas, Briesch, Riley-Tillman, & McCoach, 2009). Ratings were provided on a 6-point Likert scale (1 = Strongly Disagree to 6 = Strongly Agree; see Appendix E). Acceptability and feasibility ratings were provided at post-intervention, from participants in the intervention group only. Table 4 below illustrates all variables and timing of data collection using each of the outcome measures**.**

Table 4.
Variables and Timing of Data Collection

Dependent Variables	Independent Variable = ACHIEVER Adult Resilience Curriculum (ARC)			
	ARC[a]		AC[b]	
	Pre	Post	Pre	Post
TSWQ School Connectedness[c]	X	X	X	X
TSWQ Teaching Efficacy[c]	X	X	X	X
TSWQ Total[c]	X	X	X	X
Sleep Habits[c]	X	X	X	X
Emotional Exhaustion[c]	X	X	X	X
Teacher-Student Interactions[d]		X		X
Acceptability and Feasibility[c]		X		

Note: [a]ACHIEVER Resilience Curriculum; [b]attention control; [c]self-rated; [d]observer-rated

Data Analysis

In recognition of the nested nature of the data in the sample, Hierarchical Linear Modeling (HLM) was thoroughly considered. Although there were only 6 schools at level 2, an investigation was undertaken to determine whether the initial assumptions of HLM were met, and whether HLM was warranted as the most appropriate analysis technique. First, power for determining significance using HLM was calculated using Optimal Design, an online power test for HLM accessed at http://hlmsoft.net/od/. Past literature indicated standardized mean difference effect sizes > 0.6 for decreased perceived stress, increased teacher efficacy, and increased intention to implement practices following ARC

training, and a .57 effect size for increases in ratings of job satisfaction following training (Cook et al., 2017). Using the parameters set by the sample size (n = 6 schools) and hypothesized effect size based on the literature (.5), the power analysis revealed insufficient power to detect an effect.

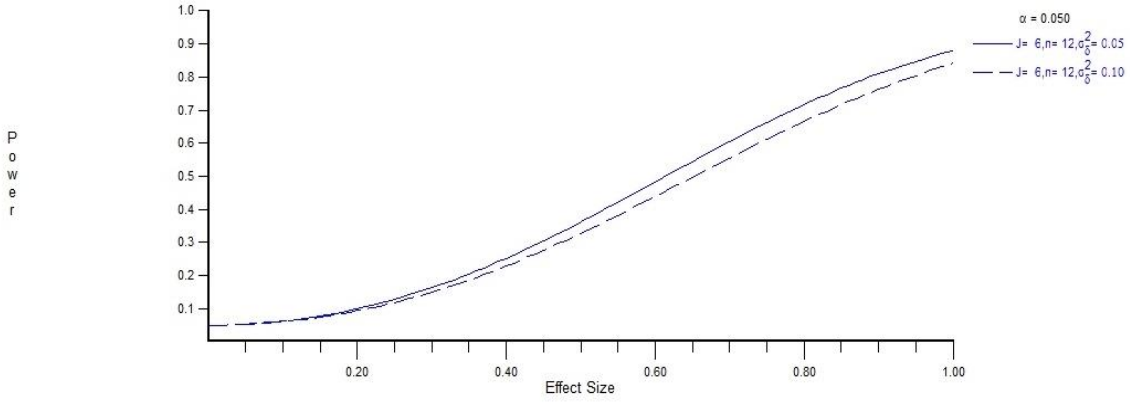

Figure 2. Ad-hoc power test for HLM using Optimal Design

Raudenbush & Bryk (2002) specify that in special cases with completely balanced data, inferences made from HLM analysis using small sample sizes may be valid. However, the data set used in this study does not meet conditions for completely balanced data. The intraclass correlation coefficient, a measure of the proportion of variability in the outcome that is due to differences between schools, was also calculated for each dependent variable at post-test. Obtained intraclass correlation coefficients were small, indicating that very small proportions of variability in each of the dependent variables were due to differences between schools (see Table 5 below). The combined

results of the power test and the obtained ICCs indicate that although data are nested, HLM is not the appropriate analysis for this data sample.

Table 5.
Obtained Intraclass Correlation Coefficients for Each of the Dependent Variables

Outcome	ICC
TSWQ Total	$9.391e^{-15}$
Healthy Habits	0.046
Emotional Exhaustion	$2.843e^{-19}$
Teacher-Student Interaction	0

Descriptive and inferential statistics were used to address each of the four research questions that guided this study. Descriptive statistics (including measures of central tendency and variability) were computed to describe control and treatment group participants' scores on each of the dependent variables at pre- and post-intervention.

Inferential statistics for research questions 1 and 2 included systematic progressions of *t*-tests and analyses of covariance (ANCOVA) to examine the degree to which participants receiving the ARC curriculum demonstrated significant improvements on each of the outcome measures as compared to those who did not receive the curriculum. First, *t*-tests were used to determine whether differences in means existed at baseline (pre-intervention) between intervention and control groups on all dependent variables. Non-significant *t*-tests were followed with *t*-tests comparing differences in change scores between intervention and control conditions. Change scores were calculated by subtracting pre-intervention scores from post-intervention scores. Finally,

ANCOVAs were performed for each dependent variable to control for post-intervention score differences between groups that were attributable to pre-intervention scores.

The sizes of the effects produced by the ARC were estimated using standardized mean difference effect sizes (SMDES). A formula provided by Morris (2008) is appropriate for pretest-posttest-control research designs, and accounts for preexisting differences between treatment and control groups:

$$\text{SMDES} = \left[\frac{(M_{post.T} - M_{pre.T}) - (M_{post.C} - M_{pre.C})}{SD_{pre}}\right] \quad (1)$$

Data for teacher-student interactions were collected at post-intervention only, so change scores were not calculated. For the teacher-student interaction data, a *t*-test was used to examine whether there were differences in group means (intervention vs. control) at post-intervention. Next, correlations between teacher-student interactions and the remaining outcome measures were calculated to further investigate the nature of the relationship between the variables.

To investigate research question 3, two two-way analyses of variance (ANOVAs) were calculated for each of the dependent variables. The first set of ANOVAs were conducted to determine whether the grade level a teacher taught moderated the impact of the ARC curriculum on change scores between pre- and post-intervention. The second set of ANOVAs were conducted to determine whether years of teaching experience moderated the impact of the ARC curriculum on change scores. Grade-level and years of experience were divided into categorical variables and included as between subject

factors in the two-way ANOVAs. Grade-level was dichotomized into early elementary (K-2) and upper elementary (3-5), while a median split was used to dichotomize years of experience into low (10 years and below) and high (11 or more years).

Finally, to address research question 4 regarding teacher ratings of the acceptability and feasibility of the ARC, descriptive statistics (means, standard deviation, and range) were calculated for each of the six acceptability and feasibility items.

CHAPTER 4. Results

Descriptive Statistics

Descriptive statistics were calculated for all outcome measures, and are presented in Table 6. At pre-intervention, means, standard deviations, and range were similar for the ARC and AC conditions on all outcome variables. Means remained generally stable for the AC group across pre- and post-intervention. For the ARC condition, means changed in the hypothesized direction on all outcome measures. The greatest change in means for the ARC condition was observed on the measure TSWQ Total ($\mathbf{\Delta} = 2.27$) and the least amount of change was observed on the measure Sleep Habits ($\mathbf{\Delta} = 0.53$), which is largely due to the scaling format for these variables. Measures of dispersion indicated significant variability on all of the outcome measures. In addition to the descriptive statistics presented below for the outcome measures, descriptive statistics were used to

investigate research question 4. Those data are presented in a separate section, at the end of the chapter.

Table 6.
Means, Standard Deviations, and Ranges for Outcome Measures

	Pre				Post			
Outcome Variables	Mean	SD	Min.	Max.	Mean	SD	Min.	Max.
TSWQ School Connectedness								
Treatment (ARC)	10.45	2.27	6	15	11.30	1.86	7	15
Control (AC)	10.26	2.33	6	15	10.53	2.00	7	15
TSWQ Teaching Efficacy								
Treatment (ARC)	10.15	2.00	7	15	11.58	1.58	9	14
Control (AC)	10.26	1.78	7	14	10.47	1.97	7	15
TSWQ Total								
Treatment (ARC)	20.61	3.73	15	29	22.88	2.75	16	28
Control (AC)	20.53	3.48	15	28	21.00	3.49	14	29
Sleep Habits								
Treatment (ARC)	6.97	1.31	5	9	7.5	0.90	5	9
Control (AC)	6.97	1.42	4	9	7.03	1.03	5	9
Emotional Exhaustion								
Treatment (ARC)	16.42	2.24	11	20	15.21	1.88	10	18
Control (AC)	16.21	2.19	9	20	16.18	1.93	10	20
Teacher-Student Interaction								
Treatment (ARC)					6.69	1.65	3	9
Control (AC)					6.47	1.26	3	9

Note. AC = attention control; ARC = ACHIEVER Resilience Curriculum; max. = maximum; min. = minimum.

Inferential Statistics

All assumptions with regard to performing both *t*-tests and ANOVAs were assessed and met (i.e., normality, sphericity, homogeneity of variance). Results for each of the research questions are presented below.

Indicators of wellbeing. Research question 1 focused on whether elementary teachers in the ARC group demonstrated significantly greater changes in indicators of wellbeing than those in the attention control group. T-tests of baseline differences indicated that there were no significant differences between the intervention and control conditions on each of the dependent variables.

Table 7.
Results of Baseline and Change Score T-Tests, ANCOVAs, and Effect Sizes for Dependent Variables

Dependent Variable	*t*-tests	ANCOVA	SMDES[a]
TSWQ School Connectedness		$F(1, 64) = 4.63$, $p = .035$	.26
Baseline	$t(65) = .34$, $p = .736$		
Change Scores	$t(65) = 1.63$, $p = .107$		
TSWQ Teaching Efficacy		$F(1, 64) = 19.65$, $p < .001$	.65
Baseline	$t(65) = -.25$, $p = .807$		
Change Scores	$t(65) = 4.20$, $p = .000$		
TSWQ Total		$F(1, 64) = 16.19$, $p < .001$	.50
Baseline	$t(65) = .09$, $p = .931$		
Change Scores	$t(65) = 3.47$, $p = .001$		
Sleep Habits		$F(1, 64) = 8.70$, $p = .004$	.29
Baseline	$t(65) = -.00$, $p = .998$		
Change Scores	$t(65) = 2.10$, $p = .040$		
Emotional Exhaustion		$F(1, 64) = 12.04$, $p = .001$	.51
Baseline	$t(65) = .40$, $p = .687$		
Change Scores	$t(65) = -3.20$, $p = .002$		

Note: *t* = t statistic; *df* = degrees of freedom

[a]Standardized mean difference effect size between treatment and control group. Effect size interpretation guide: .00-.29 = negligible, .30-.49 = small, .50-.79 = moderate, .80+ = large (Cohen, 1992).

TSWQ School Connectedness Scale. Results from the *t*-test comparing mean change scores between the ARC and AC conditions indicated no significant differences between groups following intervention, although the ARC condition was associated with

a larger average change score. An ANCOVA was performed to examine whether significant differences existed between conditions on post-intervention TSWQ School Connectedness scores when means were adjusted for differences in pre-intervention School Connectedness scores. Results of the ANCOVA indicated a significant difference in post-intervention TSWQ School Connectedness between the ARC and AC conditions $F(1, 64) = 4.63$, $p = .035$ (see Table 6). Therefore, although no significant differences were found between conditions in change scores on school connectedness measures from pre- to post-intervention, there were significant differences between the conditions on post-intervention school connectedness scores when means were adjusted to account for pre-intervention scores. To determine the size and practical importance of this effect, an effect size was calculated for the TSWQ School Connected Scale. The SMDES was $d = .26$, indicating a small effect according to Cohen's (1992) guidelines.

TSWQ Teaching Efficacy Scale. Results from the *t*-test comparing mean change scores between the ARC and AC conditions indicated significant differences between groups following intervention, $t(65) = 4.20$, $p = .000$. Specifically, participants in the ARC condition evidenced significantly higher mean changes in teaching efficacy ratings following participation in the ARC curriculum as compared to teachers in the AC condition. Results of the ANCOVA were also significant, indicating differences in post-intervention TSWQ Teaching Efficacy mean scores between conditions when post-intervention scores were adjusted for differences on pre-intervention TSWQ Teaching

Efficacy scores $F(1, 64) = 19.65$, $p < .001$ (see Table 6). The effect size associated with intervention effect for the TSWQ Teaching Efficacy Scale was moderate to large (d = .65), indicating potentially observable differences between teachers' self-efficacy across the two conditions.

TSWQ Total Scale. Results from the *t*-test comparing mean change scores between the ARC and AC conditions on the total TSWQ rating scale indicated significant differences between groups following intervention, $t(65) = 3.47$, $p = .001$. These scores indicate that when scores from both scales of the TSWQ were combined, an increase between pre- and post-intervention mean scores was observed for teachers in the ARC condition but not in the control condition. ANCOVA was used to determine whether differences in post-intervention scores existed between conditions once means were adjusted to account for differences on pre-intervention scores on the TSWQ Total. Results of the ANCOVA were significant, indicating differences in post-intervention TSWQ Total mean scores favoring the ARC condition when post-intervention scores were adjusted for differences on pre-intervention TSWQ Total scores $F(1, 64) = 19.65$, $p = <.001$ (see Table 6). These results indicated that teachers in the ARC condition reported increased overall wellbeing following participation in the ARC curriculum and compared to teachers in the control condition. The magnitude of the effect of the ARC on TSWQ Total scores was moderate (d = .50), suggesting that teachers in the ARC group had .5

standard deviation units higher change scores on the outcome variable than teachers in the AC group.

Sleep Habits. Results from the *t*-test comparing mean change scores between the ARC and AC conditions on sleep habits indicated significant differences between groups following intervention, $t(65) = 2.10$, $p = .040$. These scores indicate that teachers in the ARC condition reported higher mean hours of sleep following participation in the ARC curriculum as compared to teachers in the control condition, who did not report significant mean changes in hours of sleep. ANCOVA was used to determine whether differences in post-intervention scores existed between conditions once means were adjusted to account for differences on pre-intervention scores in Sleep Habits. Results of the ANCOVA were significant, indicating differences in post-intervention Sleep Habits mean scores favoring the ARC condition when post-intervention scores were adjusted for differences in pre-intervention reported Sleep Habits $F(1, 64) = 8.70$, $p = .004$ (see Table 6). These results indicate that teachers in the ARC condition reported increased average hours of nightly sleep following participation in the ARC curriculum and compared to teachers in the control condition. Average hours of reported nightly sleep did not increase for teachers in the control condition between pre- and post-intervention. The effect size capturing the magnitude of effect on Sleep Habits was characterized as small ($d = .29$), indicating that teachers in the ARC group demonstrated .3 standard deviation higher change scores than teachers in the AC group. Practically speaking, teachers in the ARC

group were getting roughly 30 minutes more sleep per night than teachers in the AC group.

Emotional Exhaustion. Results from the *t*-test comparing mean change scores between the ARC and AC conditions on ratings of emotional exhaustion indicated significant differences between groups following intervention, $t(65) = -3.20$, $p = .002$. These scores indicate that teachers in the ARC condition reported decreased mean ratings of emotional exhaustion following participation in the ARC curriculum as compared to teachers in the control condition. Results of the ANCOVA were significant, indicating differences in post-intervention Emotional Exhaustion mean scores favoring the ARC condition when post-intervention scores were adjusted for differences in pre-intervention Emotional Exhaustion scores $F(1, 64) = 12.04$, $p = .001$ (see Table 6). These results indicate that teachers in the ARC condition reported decreased average ratings on the Emotional Exhaustion scale following participation in the ARC curriculum. The effect size for this outcome was moderate ($d = .51$), indicating that teachers in the ARC group reported .5 standard deviation units greater reduction in emotional exhaustion than those in the AC group.

Teacher-student interactions. Research question 2 focused on examining whether teachers in the ARC group demonstrated significantly better interactions with their students than those in the AC group. A *t*-test was used to determine whether differences existed between teachers in the ARC and AC conditions with respect to mean

quality of observed teacher-student interactions. Results from the *t*-test indicated no significant differences in mean teacher-student interaction quality ratings for teachers between conditions, $t(65) = .633$, $p = .529$. Next, correlations between teacher-student interaction ratings and post-intervention scores from each of the other dependent variables were calculated. Correlations are presented in Table 8, below.

Table 8.
Correlations Between Teacher-Student Interaction Quality and Post-Scores on all Dependent Variables for N = 67 Teacher Participants

	TSWQ School Connectedness	TSWQ Teaching Efficacy	TSWQ Total	Sleep Habits	Emotional Exhaustion
Teacher-Student Interactions	.326*	.354*	.398*	.156	-.358*

Note: *p < .05

Correlations between teacher-student interactions and the Teacher Subjective Wellbeing Questionnaire individual and total scales were positive, indicating that higher scores on measures of teacher-student interaction quality were associated with higher ratings of overall wellbeing. In addition, higher scores on measures of teacher-student interaction quality were associated with lower ratings of emotional exhaustion. In general, teachers reporting higher wellbeing and lower emotional exhaustion were observed to have higher quality interactions with their students. The correlation between teacher-student interactions and reported sleep habits was small and non-significant.

Potential moderator effects. Research question 3 focused on examining putative moderators of the effectiveness of ARC. Namely, teacher demographic variables

consisting of grade level taught and years of teaching experience were examined using two-way ANOVAs to determine whether the effects of the ARC (measured as change scores on each dependent variable) depended on the grade-level being taught or the amount of years of teaching experience. To prepare for analysis, dummy variables were coded to indicate membership in dichotomous groups for both grade level taught and years of experience. Teachers of grades K-5 were included in this study; grades K-2 were classified as 'early elementary,' while grades 3-5 were classified as 'upper elementary.' To determine groups for fewer and greater levels of teaching experience, a median split for the entire sample was used. The median of the sample was 10; groups were defined as 10 or fewer years of experience and 11 or more years of experience. Table 9 below illustrates the cell sizes for teachers in the dichotomous groups.

Table 9.
Cell Sizes for Dichotomous Teacher Groups used to Analyze Moderator Effects

	Grade Level Taught		Years Teaching Experience	
	K-2	3-5	0-10	11+
ARC	15	18	17	16
AC	17	17	19	15
Total	32	35	36	31

To examine the moderating effect of the variables, the interaction effect between condition (ARC vs. AC) and the moderator variable was inspected. A significant interaction effect suggests that the effect of condition depends on the level of another

between-subjects variable included in the model (e.g., grade level taught). Interaction effects from each of the 2x2 ANOVA analyses is presented in Table 10, below. None of the interactions were statistically significant; because the sample size was relatively small, statistical power was sub-optimal to detect a significant interaction effect. Effect sizes for the interaction effects for each of the dependent variables were calculated, and are reported with confidence intervals in Table 10 as well. The effect sizes indicate the effect of the moderator on amount of change in the dependent variables produced by the ARC. The results displayed in Table 10 are discussed in the sections below.

Table 10.
Interaction Effects for Possible Moderator Variables

	Interaction	Effect Size[a] (CI)[b]
TSWQ School Connectedness		
Condition*Grade Level Taught	$F(1, 63) = 2.381$, $p = .128$	0.38 (-0.10–0.86)
Condition*Years Teaching Experience	$F(1, 63) = 1.467$, $p = .230$	0.30 (-0.18–0.78)
TSWQ Teaching Efficacy		
Condition*Grade Level Taught	$F(1, 63) = 0.131$, $p = .719$	0.08 (-0.39–0.57)
Condition*Years Teaching Experience	$F(1, 63) = 2.922$, $p = .092$	0.42 (-0.08–0.90)
TSWQ Total		
Condition*Grade Level Taught	$F(1, 63) = 1.603$, $p = .210$	0.31 (-0.17–0.79)
Condition*Years Teaching Experience	$F(1, 63) = 3.285$, $p = .075$	0.47 (-0.02–0.96)
Sleep Habits		
Condition*Grade Level Taught	$F(1, 63) = 0.276$, $p = .601$	0.13 (-0.35–0.60)
Condition*Years Teaching Experience	$F(1, 63) = 3.116$, $p = .082$	0.43 (-0.05–0.92)
Emotional Exhaustion		
Condition*Grade Level Taught	$F(1, 63) = 3.164$, $p = .080$	0.44 (-0.03–0.96)
Condition*Years Teaching Experience	$F(1, 63) = 0.849$, $p = .360$	0.23 (-0.26–0.71)

Note: [a]Standardized mean difference effect size between treatment and control group. Effect size interpretation guide: .00-.29 = negligible, .30-.49 = small, .50-.79 = moderate, .80+ = large (Cohen, 1992); [b]95% confidence interval for the calculated effect size

Grade level taught as a moderator. ANOVA analyses revealed no statistically significant interactions between condition (ARC vs. AC) and grade level taught (early vs. upper elementary) on change scores for any of the dependent variables.

Visual inspection of interaction plots and examination of obtained effect sizes revealed potential moderating effects for some of the variables (see Appendix F). Specifically, it appeared that grade level taught may moderate the effects of the ARC on the TSWQ School Connectedness scale, such that teachers of early elementary grades evidenced similar change scores on measures of school connectedness, regardless of condition, with an average of about .6 point gain for both groups on the scale. However, teachers of upper elementary grades in the ARC condition experienced larger gains on the TSWQ School Connectedness scale relative to the teachers of early elementary grades in the ARC condition, and compared to teachers of upper elementary grades in the control group, who averaged a negative change or a slight decrease in school connectedness at post-intervention. The effect size associated with TSWQ School Connectedness scale was small (d = .38), indicating a small change in the dependent variable that can be attributed to the grade level taught.

The demographic variable grade level taught also appeared to influence the effects of the ARC on emotional exhaustion. Visual inspection of the plot of change scores on the Emotional Exhaustion scale by condition revealed that early elementary teachers experienced the greatest amount of change following participation in the ARC, while teachers of upper elementary grades showed somewhat similar change regardless of condition. Scores for early elementary teachers in the control group demonstrated gains in emotional exhaustion, indicating higher average levels of exhaustion at post-

intervention than they reported at baseline. The effect size associated with Emotional Exhaustion was small (d = .44), but at the high end of Cohen's (1992) specified range, indicating a small effect of grade level on change in the dependent variable.

Effect sizes were also calculated for TSWQ Teaching Efficacy, TSWQ Total, and Sleep Habits. All were negligible to small, indicating very small effects of grade level taught on changes in those outcome variables.

Years of teaching experience as a moderator. ANOVA analyses revealed no statistically significant interactions between condition (ARC vs. AC) and years of teaching experience (low – 10 or fewer years vs. high – 11 or more years) on change scores for any of the dependent variables. However, inspection of the marginal means and plots demonstrated potentially moderating effects of years of teaching experience on the outcomes associated with ARC. For example, when examining plots of change scores on the TSWQ Teaching Effectiveness, TSWQ Total, and Sleep Habits scales by treatment condition, teachers with 10 or fewer years of teaching experience demonstrated some improvements on average, regardless of condition. Average gains were larger for the ARC group by a small amount on all dependent variables. However, veteran teachers with 11 or more years of experience in the ARC condition made much larger gains on measures of teaching efficacy, overall subjective wellbeing, and sleep than all other groups, while veteran teachers in the control group demonstrated smaller gains than all other groups. Effect sizes associated with the interactions described above were small (*d*

= .42-.47), indicating that there was an effect—albeit small—of the moderator years of teaching experience on changes in the dependent variable. A similar pattern was observed for school connectedness (veteran teachers made differentially large gains if they received the ARC, but minimal gain if they did not), although the associated effect size was smaller (d = .30).

For emotional exhaustion, the ARC group evidenced larger reductions in emotional exhaustion in both conditions, although the reductions were greater for teachers with more years of experience. Conversely, in the control group, small reductions of emotional exhaustion were observed for less experienced teachers, but emotional exhaustion increased slightly for more experienced teachers. The effect size associated with the interaction was negligible (d = .23), indicating that additional research is needed to determine whether years of teaching experience meaningfully moderates the effects of the ARC on emotional exhaustion.

Acceptability and Feasibility. Research question 4 was concerned with whether teachers in the intervention condition found the ARC to be acceptable and feasible. Teachers in the treatment group completed acceptability and feasibility ratings following participation in the intervention. Item-level results were aggregated at each individual site and summed across the six schools. Overall, teachers rated the ARC intervention as effective, acceptable, manageable, and feasible for promoting teacher wellbeing. The

average rating for each of the six items appears in Table 11, below. Items were rated on a six-point Likert scale (1 = Strongly Disagree to 6 = Strongly Agree).

Table 11.
Item-Level Descriptive Statistics for Acceptability and Feasibility Teacher Ratings from Teachers in the ARC Condition (N = 33)

Item	Mean (SD)	Item	Mean (SD)
Acceptability		Feasibility	
The ARC includes practices that are an effective choice to promote aspects of teacher well-being.	5.2 (1.3)	Preparation and background knowledge needed for the ARC is minimal.	5.2 (1.4)
The ARC is an acceptable and fair way to support teacher well-being.	5.3 (1.2)	The total time required to implement the ARC practices was manageable.	4.9 (1.4)
I had positive attitudes about participating in receiving the ARC training	5.0 (1.3)	I was able to allocate my time to implement the ARC practices during and after school.	5.1 (1.2)
AVERAGE	5.2 (1.3)	AVERAGE	5.1 (1.4)

CHAPTER 5. Discussion

Teaching is a rewarding yet stressful profession. Many teachers experience significant stressors that may impact their professional wellbeing, health, and effectiveness. They must continuously strive to meet accountability expectations, differentiate instruction for diverse learners, maintain connections with families, serve on committees, and manage challenging behaviors that interfere with learning, among other responsibilities (Cohen, 2006; Jennings & Greenberg, 2009; Kidger et al., 2010). Recently, teachers have also been expected to teach social emotional skills, although

research suggests that minimal training is provided for SEL program implementation (Jones & Bouffard, 2012). In addition, teachers themselves are rarely trained in SEC and are given little room for self-regulation, as they must remain in the classroom or even in front of students, while dealing with emotionally challenging situations (Jennings & Greenberg, 2009). Most teachers agree that SEC skills should be taught to students in schools, but simultaneously feel overwhelmed and unprepared to fulfill that role (Jennings & Greenberg, 2009; Kidger et al., 2010, Roffey, 2012).

When teachers are unable to cope with high levels of occupational stress, they are at-risk for burnout, characterized by increases in emotional exhaustion, depersonalization, and job dissatisfaction (Burke et al., 1996; Oberle & Schonert-Reichl, 2016). Teacher burnout has been well-researched, revealing evidence of associations with increases in attrition, as well as several negative outcomes for those teachers who remain in the classroom (Oberle & Schonert-Reichl, 2016). For example, teachers experiencing chronic stress and burnout experience more difficulties with classroom management, deliver lower quality instruction, create more stressful classroom environments, experience lower-quality teacher-student relationships, and their students experience increased stress (Hoglund et al., 2015; Kidger et al., 2010; Oberle & Schonert-Reichl, 2016).

Recently, the conversation around teacher stress has shifted to a focus on resilience and wellness promotion, as it has been hypothesized that implementation fidelity for SEL programs and other evidence-based practices to promote student

academic and behavioral outcomes is dependent upon teacher wellness (Cook et al., 2017). The current project was conducted to add to the literature on the utility and effectiveness of interventions to promote teacher wellness and resilience. The purpose of this project was twofold: to experimentally examine the effectiveness of an online wellbeing and resilience promotion training program for teachers, the ACHIEVER Adult Resilience Curriculum, and to determine the extent to which teachers found the ARC to be an acceptable and feasible program to promote wellness practices and resilience. The ARC aims to help teachers reduce work-related stress and symptoms of burnout by teaching and promoting several skills and routines, including values clarification, alignment of behavior with values, mindfulness practices, SEC skills and practices, and therapeutic lifestyle practices.

Hypothesized outcomes of the program were increases in wellbeing, healthy habits, and the quality of teacher-student interactions, as well as decreases in emotional exhaustion, a component of and precursor for burnout. In addition, it was hypothesized that teachers would find the ARC to be an acceptable and feasible way to increase SEC skills and overall wellbeing. These outcomes were measured using several rating scales to assess subjective wellbeing, sleep habits, and stress. The quality of interactions between teachers and students was also assessed by an observer in the classroom. Finally, teachers provided ratings of the acceptability and feasibility of the ARC curriculum. The ARC has previously been examined experimentally with a group of secondary teachers

located in the Midwest (Cook et al., 2017). The current study sought to expand upon previous research by examining the benefit, acceptability, and feasibility of the ARC with elementary teachers in a different geographical region.

The current study used a randomized block controlled design with pre-post data collection on the outcome measures listed above. Four research questions guided data collection and analysis, and an overview of the findings from each one are discussed below.

Research Question 1

Research question 1 was concerned with whether teachers receiving the ARC would demonstrate significantly greater changes in indicators of wellbeing than those not receiving the ARC. Given the design employed in this study, relatively straightforward statistical tests (*t*-tests and ANCOVAs) were used to evaluate the impact of the ARC for increasing indicators of wellbeing and decreasing emotional exhaustion. Findings demonstrated that teachers engaging in the ARC training and practices evidenced higher teaching efficacy, higher overall subjective wellbeing, increased average hours of nightly sleep, and lower levels of emotional exhaustion after completing the program, while a comparable group of teachers in the attention control condition did not demonstrate changes. These results indicate that training and practice with mindfulness and SEC skills produces an immediate change in indicators of wellbeing for elementary school teachers. This evidence adds to a growing set of studies supporting the development and

implementation of theoretically based teacher training to promote resilience and wellbeing (Cook et al., 2017; Sharp & Jennings, 2015).

Standardized mean difference effect sizes were calculated to illustrate the magnitude of the effect of the ARC on each of the dependent variables. Effect sizes for the TSWQ School Connectedness Scale and the Sleep Habits scale were small, indicating that the ARC curriculum produced one third standard deviation units greater change in these outcomes than the control condition. Moderate effect sizes were obtained for the Emotional Exhaustion scale, and the TSWQ Total scale. The effect size for Emotional Exhaustion was based on average reductions in self-reported symptoms, indicating that participation in the ARC resulted in reduced feelings of fatigue, strain, and emotional drain related to working with students. Symptoms of emotional exhaustion have been empirically linked to burnout (Jennings & Greenberg, 2009; Maslach et al., 1996). The reductions in emotional exhaustion observed for this sample provide evidence that participation in the ARC resulted in significant reductions in self-reported stress for the current sample of teachers. Given that recent research has indicated higher cortisol levels for students in the classrooms of teachers experiencing higher levels of stress and emotional exhaustion, the results obtained in the current study are promising to suggest the ARC as a possible intervention to combat teacher stress and promote positive outcomes for teachers and students.

The highest effect size was observed for the TSWQ Teaching Efficacy scale. The combined *t*-test, ANCOVA, and effect size results all revealed that the ARC was associated with a significant, positive effect on teachers' feelings of efficacy. The effect size was in the moderate to large range (d = .65), indicating that teachers in the ARC group demonstrated over a half standard deviation greater change on this measure than those in the control group. Evidence from previous research suggests that decreases in efficacy occur when teachers are under chronic stress, resulting in negative impact on the classroom environment teachers create, the relationships between teachers and students, and the academic outcomes achieved by students (Hoglund et al., 2015; Howard & Johnson, 2004; Kidger et al., 2010; Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008). Conversely, increases in teachers' feelings of efficacy have been linked to increases in feelings of control over one's emotions, cognitions, and behavior, and increases in feelings of confidence to overcome challenges (Gibbs, 2003; Gu & Day, 2007). Previous research also suggests moderate positive effects of the ARC on teacher efficacy using a different scale. Evidence from the current study replicates these results using the TSWQ and with a different sample of teachers, indicating preliminary external validity evidence for the use of the ARC for increasing teacher efficacy.

T-test and ANCOVA results, as well as effect sizes indicate that the ARC curriculum resulted in significant increases in self-reported feelings of overall wellbeing, specifically efficacy, and reductions in emotional exhaustion. Previous research results

have connected increased teacher efficacy and decreased emotional exhaustion and burnout to positive student outcomes (Cook et al., 2017; Gibbs, 2003; Gu & Day, 2007). Future investigations of the ARC should build on current findings by including teacher behavior change data and student outcome data, as current results suggest the effectiveness of the ARC for increasing self-reported efficacy, sense of connectedness, and health outcomes, and decreasing self-reported emotional exhaustion.

Research Question 2

Research Question 2 focused on examining whether ARC was associated with significantly better interactions with students than those in an attention control group. Teachers in both conditions were observed post-intervention, and elements of interaction quality were rated. Ratings of teacher-student interactions at post-intervention did not reveal significant differences between teachers in the two conditions. The failure to include a pre- measure on this dependent variable precluded an analysis of change over time. It is possible that the groups were different at baseline and the post-data do not adequately capture change over time. Additional follow-up correlational analyses were performed between teacher-student interaction ratings and each of the dependent variables, and results revealed significant relationships between the variables. Specifically, teacher-student interaction quality was positively associated with ratings of subjective wellbeing. In addition, teacher-student interaction quality was negatively associated with self-reported emotional exhaustion, with better teacher-student

interactions being associated with lower levels of emotional exhaustion. Overall, although no conclusions can be made regarding the direct impact of ARC training and outcomes on increased teacher-student interaction quality, data indicates that teachers scoring higher on measures of SEC (as measured by increased connectedness and efficacy) and lower on measures of stress/burnout (decreased emotional exhaustion) are likely to be rated as engaging in higher quality teacher-student interactions.

Teachers experiencing burnout often experience depersonalization, in which they feel callous toward or disconnected from students (Burke et al., 1996; Emery & Vandenberg, 2010). However, teachers who maintain high quality relationships with the students in their classrooms are less likely to experience depersonalization (Milatz et al., 2015). Increased positive academic, social, emotional, and behavioral outcomes for students should be included as a major outcome for any wellbeing and resilience promotion training program for teachers. Research has shown that increases in the quality of teacher-student interactions are associated with stronger teacher-student relationships, and improved classroom and student outcomes have been demonstrated empirically (Baker, 1999; Downey, 2008; Hamre & Pianta, 2001; Jennings & Greenberg, 2009; Klem & Connell, 2004; Suldo et al., 2009). Additional investigation is needed regarding the impact of the ARC on teacher-student interaction quality. However, the preliminary correlational evidence from this study appears promising. Though significant direct effects of the ARC on teacher-student interaction quality was not observed, the ARC was

shown to increase subjective wellbeing and decrease emotional exhaustion. Both these factors were correlated with teacher-student interaction quality. Future research should continue to explore the effects of the ARC on teacher-student interaction quality, as well as resulting student outcomes.

Research Question 3

Research question 3 explored whether the teacher-level demographic variables grade level taught or years of teaching experience moderated the effects of the ARC on change scores for each of the outcome variables. Results from two-way ANOVAs for each combination of demographic and outcome variables did not reveal statistically significant interaction effects. However, when marginal means were plotted and examined visually, possible interactions for grade level taught and condition were observed for the outcome variables TSWQ School Connectedness and Emotional Exhaustion. Possible interactions were also observed between years of teaching experience and condition for the outcome variables TSWQ Teaching Efficacy, TSWQ Total, and Sleep Habits.

Investigation of teachers' reported school connectedness following participation in the ARC, as measured by a subscale of the TSWQ was not found to be significantly different from teachers in a control group. However, when the potential moderator variables grade level taught and years of teaching experience were examined, visual analysis indicated possible interactions that were not statistically significant in the current

sample. The effect sizes associated with both interactions were small, although small sample size likely impacted effect sizes and power. Moderated effects were such that teachers of upper elementary grades and teachers with more years of teaching experience benefitted differentially from the ARC. Previous research has suggested that school connectedness, as a component of overall subjective wellbeing, is strongly influenced by contextual factors within the school such as leadership and relationships with staff (Renshaw et al., 2015). In the current study, it could be the case that teachers of older students, and those with more experience noticed positive changes in relationships with their colleagues following participation in the ARC. In contrast, teachers of younger students and those with less experience often work closely with colleagues and may have benefitted less. Both ARC training and participation in a PLC group resulted in low levels of positive change for teachers of younger students and those with less experience, however they may have entered the study with higher baseline levels of school connectedness. Additional investigation is needed to determine the true nature of these relationships.

Marginal means and effect sizes indicated that years of teaching experience also potentially moderated the effect of the ARC on measures of teaching efficacy, overall subjective wellbeing, and sleep. In all cases, teachers with more years of experience made differentially larger gains following ARC training than teachers with fewer years of experience. Teachers with fewer years of experience in the control group made some

gains following participation in a PLC, while teachers with more experience made minimal or even negative gains. These results may indicate that teachers with more years of teaching experience benefit substantially from a targeted intervention focused on increasing resilience and wellbeing, but they do not increase resilience skills from participation in a PLC alone. Because they have had fewer years of experience, newer teachers may be less burned out at the outset, and may still be benefitting from their own coping mechanisms.

Finally, it appears that grade level taught may moderate the impact of the ARC on the dependent variable emotional exhaustion such that teachers of early elementary grades in the ARC group evidenced the largest reductions in self-reported emotional exhaustion, while teachers of early elementary grades in the control group evidenced very slight increases. Teachers of very young students may feel physically and emotionally exhausted because their students have especially high needs of a wide variety. These teachers may show large benefits when offered the opportunity to learn skills to manage these feelings.

Research Question 4

Research question 4 focused on examining teachers' perceptions of the social validity of the ARC. Descriptive statistics indicated that teachers found the ARC to be both acceptable and feasible, with high mean ratings on each of the items included on the measure. Mean calculations revealed that teachers generally agreed with all statements,

indicating that they viewed the ARC to be an effective and enjoyable way to promote teacher wellbeing. Teachers also agreed that the program was feasible for promoting teacher wellbeing, requiring minimal background knowledge for participation and a manageable time commitment. These findings expand upon those obtained by Cook et al. (2017), who also noted social validity findings following ARC implementation with a group of secondary teachers. Since changes in teachers' beliefs and attitudes are one component of teacher change, it is important that teachers consider a program worthy of their time and efforts (Guskey, 2002).

Overall, the ARC was viewed by teachers as a reasonable and enjoyable way to learn and practice SEC and resilience skills. Results reported here suggest that the ARC had significant positive effects on teachers' feelings of efficacy and hours of nightly sleep. Teachers receiving the ARC also demonstrated significantly higher school connectedness scores following participation in the curriculum than control teachers, as well as decreased emotional exhaustion. These findings are important, as loss of feelings of efficacy and increased emotional exhaustion are linked to burnout and a host of negative outcomes for teachers and students (Jennings & Greenberg, 2009; Maslach et al., 1996). Results indicated that teachers in the sample reported less frequent symptoms of stress and more frequent indicators of resilience, such as increased sleep, and increased feelings of efficacy and connectedness. Teachers with higher ratings of wellbeing and those experiencing fewer symptoms of stress and emotional exhaustion were more likely

to engage in high-quality interactions with their students. Finally, results indicated that the ARC may function differently for teachers of students at different ages, or teachers with more or less experience teaching. These results taken together indicate that the ARC is a feasible and effective program for increasing teacher wellbeing, and may be a cost-effective method for promoting wellness and resilience and combating burnout. Continued research on the ARC may help researchers determine how to best situate the ARC in teacher training and professional development programs, and could lead to refinements to improve the effectiveness and relevance of the curriculum.

Implications for Research and Practice

The results of this study suggest several implications for research and practice. First, the findings from this study indicate the utility of the ARC for promoting wellness practices. Results from the current and contemporary studies supporting the benefits of wellness training programs indicate that educational leaders designing teacher training programs, as well as school administrators who employ teachers, should consider implementing practices that target the promotion of resilience and wellbeing among educators. In schools, many educators and education policy makers have called for the importance of SEC, and mounting evidence demonstrates that increases in SEC leads to increased resilience and positive outcomes for students (Jennings & Greenberg, 2009). However, teachers currently receive little training to develop their own SEC, skills which may be necessary in order for them to teach SEC to students (Jones & Bouffard, 2012).

Most teacher preparation programs do not include courses on wellbeing, resilience, self-regulation, or stress management (Cook et al., 2017). Researchers have recommended changes to teacher education programs to include training and practice to develop self-reflection, self-regulation, social, and empathy skills, as well as changes to school systems to include administrative support for overall teacher wellness, and school wide systems of behavior management (Beltman et al., 2011; Howard & Johnson, 2004). The current research results demonstrate the immediate effectiveness of the ARC in wellness promotion and stress reduction, lending support to the recommendation for inclusion of skills training in and administrative support for teacher wellbeing training programs. Findings from this study, combined with previous studies indicate the need for promotion of teacher wellbeing to become a valued aspect of supporting a socially and emotionally well and stable workforce.

A second implication of this research is that the ARC may reduce teacher stress and burnout, which may save district resources over time. For example, teachers experiencing burnout may experience increased health problems and corresponding absenteeism. Teachers experiencing chronic stress and burnout may even leave the profession. Research in other fields, such as workplace health and medicine, also indicates that mental health related factors are associated with significant loss in resources due to absences, lack of productivity, and increased likelihood for remediation to address professional behavior (Goetzel et al., 2004; Loeppke et al., 2009; Perry,

Lamont, Brunero, Gallagher, & Duffield, 2015). However, reductions in stress combined with increases in SEC and resilience predict better outcomes for teachers and the students they serve. Although schools are under pressure to increase academic proficiency, school administrators are encouraged to offer opportunities for teachers to intentionally focus on their own SEC, resilience, and stress management skills, as well as continuing support to engage in related practices.

Third, in addition to the long-term health benefits that may result from stress reduction, the findings in this study point to the utility of the ARC for improving the healthy lifestyle practices of teachers. Small changes in hours of nightly sleep were observed for teachers who participated in ARC training, but the therapeutic lifestyle practices module emphasized the importance of other healthy practices as well. Included in the module is information on healthy habits in the areas of nutrition, exercise, recreation, and leisure. Data indicates that the ARC produces improvements in sleep, and it is possible that positive changes would be observed for other healthy practices as well. In this way, the ARC may provide both immediate and long-term health benefits to teachers.

Fourth, results from the current study indicate that teacher wellness and resilience training delivered via an online platform can produce significant increases in wellbeing and significant decreases in emotional exhaustion. Previous research on platforms for teacher training indicate that online professional development is cost-effective,

accessible, convenient, and flexible (Clary & Wandersee, 2009). More importantly, online professional development has been empirically demonstrated to be as effective as face-to-face courses, with the best outcomes observed for hybrid courses that combine online and face-to-face components (U.S. Department of Education, 2010). The ARC is an example of a hybrid course, that includes online lesson modules and in person consultation sessions. This delivery format is significantly more cost-effective than other current wellbeing promotion training programs for teachers, saving time and monetary resources for schools and teachers without sacrificing effectiveness. The ARC is also convenient. Teachers who experienced the ARC indicated that the time required to complete the training was manageable, and that the program was a reasonable way to improve teacher wellbeing and resilience. Overall, results indicate that the ARC is a balanced and effective program that may offer significant benefits over other programs in terms of cost, convenience, accessibility, acceptability, and flexibility.

Finally, the findings presented in this study have implications for teachers working in high-needs schools. Schools with high levels of racial, ethnic, linguistic, economic, and disability diversity are often described as high-needs, and present stress-inducing challenges to teachers such as differentiation of instruction for varying skill levels and behavior management difficulties (Burke et al., 1996; Chang, 2013; Jennings, 2015; MetLife, 2006; MetLife, 2012; Renard, 2003). Students in high-needs schools may be at greater risk for externalizing behaviors in the classroom, which creates more teacher

stress (Hoglund et al., 2015). However, students in high-risk settings are most in need of high-quality instruction and resilient teachers who possess the SEC skills necessary to work continuously in high-needs schools with students who are at risk of school failure due to social, cultural, or economic factors. Emery and Vandenberg (2010) indicate that special education teachers are another high-risk population that are in need of increased skills in protecting and promoting their own wellbeing and resilience. The sample of schools included in this study was drawn from a large urban school district serving economically and ethnically diverse populations of students. Positive results obtained in this study indicate that the ARC may provide the skills needed for teachers to function in high-needs roles. Because of the flexibility and cost-effectiveness of the ARC, it may be especially suited for use in high-needs schools with limited resources.

Limitations

The findings presented here should be interpreted in light of study limitations. First, the results are based on a relatively small sample of participants. The sample size limited the statistical power to detect moderator effects. In addition, although the structure of the dataset is inherently nested—teachers within schools—the number of schools was insufficient for use of HLM. Hierarchical Linear Modeling may be better suited to multi-level data because it considers relationships between variables across levels (Woltman, Feldstain, MacKay, & Rocchi, 2012).

Second, teacher participants were volunteers, and may represent a group of teachers who were open to wellness practices and resilience training. Therefore, the sample may be limited with respect to external validity. Similarly, the administrators from the participating schools provided considerable support for teachers to give them permission and protect the time to participate in this study. The external validity of the study is therefore limited to schools with supportive and invested administrators.

Third, the majority of the measures used in the study were perceptual measures, except the Sleep Habit questionnaire and teacher-student interactions rating. Perceptual measures could be influenced by participation in the ARC and may not accurately reflect true behavior change. Future research should continue to incorporate multiple sources of data to determine the impact of the ARC on teachers' subjective experiences and objective behaviors. Similarly, no follow-up data was collected during this study. Follow-up data is crucial for determining whether the positive effects of training sustain into the future following completion of the intervention. Future investigations should incorporate the collection of follow-up data to determine whether improvements in outcomes maintain after the completion of the intervention.

Fourth, the current study demonstrated positive impacts of the ARC on teachers' sleep habits, but sleep data alone do not capture a complete picture of an individual's healthy habits. Future research should include more indicators of healthy habits and practices, including indicators related to diet and exercise.

Fifth, resource limitations only allowed for teacher-student interactions to be observed at post-intervention, so no change scores could be calculated. Future research on the ARC should include diverse measures of teacher-student interaction quality, given the evidence-based connections between wellbeing, efficacy, teacher-student relationships, and student outcomes.

Sixth, a major goal of teacher wellbeing and resilience training programs is positive outcomes for students. Although improvements on measures of teacher's wellbeing should be considered meaningful outcomes in and of themselves, future research should examine the degree to which changes in teacher wellbeing correspond to changes in relevant student academic, behavioral, and emotional outcomes.

Seventh, moderator analyses included dichotomized variables, which reduces the variability in the data and makes it potentially more challenging to detect an effect. Moreover, although plots of marginal means demonstrated potential moderating effects, no statistically significant findings were uncovered. Future investigations examining teacher-level moderators should include larger samples and additional statistical analyses to examine possible moderators of ARC effectiveness to better examine "with whom" it works.

Finally, the current study focused mainly on individual skills rather than on the entire system of the school. The ARC is theoretically-based, and informed by ecological systems theory, which specifies that individuals operate within nested systems.

According to ecological systems theory, interventions are most effective when they target the system and the individual. A balanced approach to the promotion of wellbeing and resilience would include individual skill training combined with environmental changes to promote and support wellbeing. Future studies should consider contextual factors that may impact teachers' ability to benefit from ARC training.

Directions for Future Research

In addition to the suggestions listed in the preceding sections, additional directions for future research can be identified in light of the current findings. First, it is important to reiterate the importance of situating the current research study within a larger model that considers both personal and situational factors related to stress, burnout, wellness, and resilience (Maslach, 2003). The ARC focuses on promoting resilience and wellbeing from within, by supporting teachers to acquire and apply wellbeing promoting skills, habits, and routines. However, there are organizational and cultural factors that can be addressed at the system level to further promote teacher wellbeing, effectiveness, and retention. A systems perspective will likely be critical in schools operating in economically disadvantaged contexts, as they may need to address greater risk factors as part of the educational process for both students and teachers.

Second, prevention science theory promotes addressing risk factors before they stabilize as predictors of dysfunction. Future research could investigate the utility of implementing the ARC as part of pre-service training for teachers as compared to a more

reactive approach as in-service professional development once teachers are on-the-job. Such research would help determine whether earlier intervention with teachers produces superior outcomes compared to later intervention (Coie et al., 1993).

Additional investigation of the moderating effect of various demographic variables, including years of teaching experience, will add to the knowledge base regarding those teachers who are most likely to gain significant benefit from the ARC. Alternatively, future research could be conducted to determine whether wellbeing and resilience skill training such as the ARC should be provided universally for teachers, much like a 'tier 1' practice in a multi-tiered system of support.

Finally, future research on the ARC or any related program should include measures of student outcomes. Most teachers measure their success by the outcomes they produce in students, and increased student success is the ultimate goal of any educational reform movement. Although research suggests associations between teacher wellbeing and positive student outcomes, the field of research on teacher training programs to promote wellbeing and resilience is new (Jennings & Greenberg, 2009; Kabat-Zinn, 2003). As the field progresses, it is crucial to seek evidence that newly developed teacher training programs result in meaningful change for students. Researchers who seek to expand upon the current evidence base are urged to link effectiveness to student outcomes. Guskey (2002) presents a model of professional development by which student learning outcomes are impacted by changes in teachers' classroom practices. Only after

increases in student outcomes are observed are teachers' beliefs and attitudes changed (Guskey, 2002). In light of this, perhaps a reasonable goal for research on resilience and wellbeing promotion training programs is to include measures of change in teachers' actual behavior within the classroom in addition to measures of wellbeing.

Conclusion

Teachers have one of the most meaningful and important professions in our society. However, the profession has long been rated as highly stressful (Kyriacou, 2001; MetLife, 2012; Roffey, 2012). Each year, schools and districts lose large percentages of teachers to attrition, including new teachers who have the greatest potential for longevity, and veteran teachers who have the most experience (Emery & Vandenberg, 2010). Until recently, researchers and policymakers have not considered teacher wellbeing as a critical component for building effective schools (Howard & Johnson, 2004; Jennings & Greenberg, 2009). Emerging research on the importance of teacher wellbeing and resilience indicates that training in necessary to equip teachers with the skills they need to function most effectively (Jennings & Greenberg, 2009). Research that focuses on developing and evaluating teacher wellbeing programs is critical to preventing and addressing the burnout cascade. Several programs have shown promise for effectively reducing teacher stress and increasing wellbeing, especially those that include mindfulness as a component. Evidence from the current study builds on previous evidence presented by Cook et al. (2017) to indicate that the ARC is an effective

wellbeing and resilience promotion training program for teachers. Continued research on wellness promotion teacher training programs will also be necessary to create a stable workforce of teachers who are able to create equitable, positive outcomes for students.

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APPENDIX A

Teacher Subjective Wellbeing Questionnaire

TSWQ

Name:	Age:	Gender:
Date:	Grade(s):	Race/ethnicity:
Years teaching:	Type: General / Special Ed.	Highest degree:

Below are some questions about your experiences as a teacher.

Read each item carefully and then circle the response that is most applicable to you.

		Almost Never	Some-times	Often	Almost Always
1.	I feel like I belong at this school.	1	2	3	4
2.	I am a successful teacher.	1	2	3	4
3.	I can really be myself at this school.	1	2	3	4
4.	I am good at helping students learn new things.	1	2	3	4
5.	I feel like people at this school care about me.	1	2	3	4
6.	I have accomplished a lot as a teacher.	1	2	3	4
7.	I am treated with respect at this school.	1	2	3	4
8.	I feel like my teaching is effective and helpful.	1	2	3	4

Teacher Subjective Wellbeing Questionnaire (TSWQ)

Scoring and Interpretation Guide

- Create the Total Teacher Wellbeing Scale score by summing all 8 items.
- Create subscale scores by summing items as follows:
    - School Connectedness Scale: items 1, 3, 5, 7
    - Teaching Efficacy Scale: items 2, 4, 6, 8
- No reverse-scoring necessary.
- Higher scale scores represent greater levels of teacher wellbeing.
- No large-scale normative data available.
- For more information visit: www.tylerrenshaw.com/tswq

APPENDIX B

Sleep Habits

	1	2	3	4	5	6	7	8	9	10	10+
Average nightly hours of sleep over the past week											

APPENDIX C

Maslach Abbreviated Burnout Inventory (Emotional Exhaustion)

	Everyday	A few times a week	Once a week	A few times a month	Once a month	A few times per year	Never
1. I feel emotionally drained from my work	1	2	3	4	5	6	7
2. I feel fatigued when I get up in the morning and have to face another day on the job	1	2	3	4	5	6	7
3. Working with students all day is really a strain for me	1	2	3	4	5	6	7

APPENDIX D

Teacher-Student Interactions Observer Rating Form

	Not at all	Slight extent	Moderate extent	Great extent	Very great extent
1. Teacher interactions with students are positive (praise statements, calm responses to problem behavior, smiling with students, encouraging statements)	1	2	3	4	5
2. Teacher contingently responds to student statements, questions, and behavior by providing relevant information or asking relevant questions	1	2	3	4	5

APPENDIX E

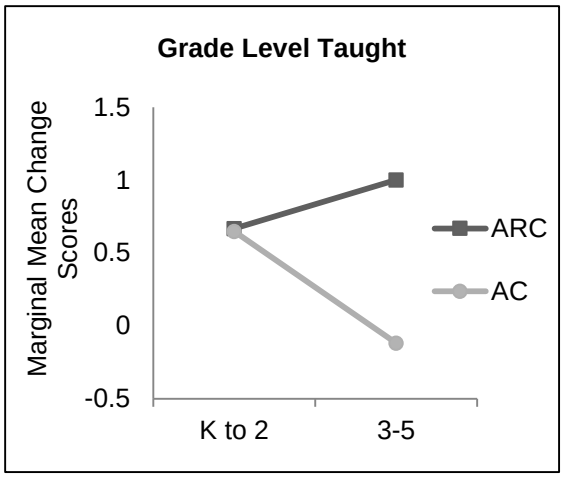
Acceptability and Feasibility Items

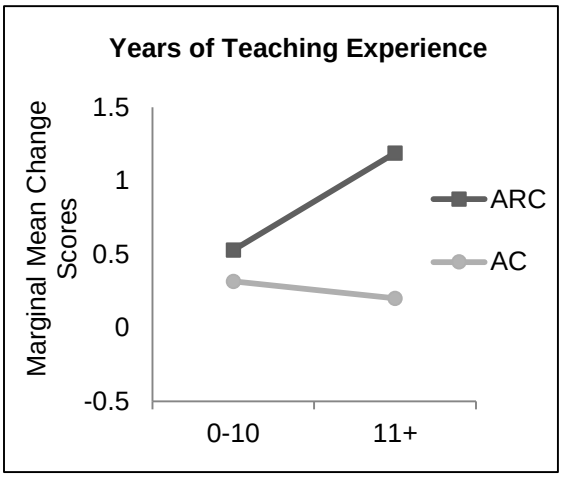
	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Acceptability						
The ARC includes practices that are an effective choice to promote aspects of teacher wellbeing.	1	2	3	4	5	6
The ARC is an acceptable and fair way to support teacher wellbeing.	1	2	3	4	5	6
I had positive attitudes about participating in receiving the ARC training.	1	2	3	4	5	6
Feasibility						
Preparation and background knowledge needed for the ARC is minimal.	1	2	3	4	5	6
The total time required to implement the ARC practices was manageable.	1	2	3	4	5	6
I was able to allocate my time to implement the ARC practices during and after school.	1	2	3	4	5	6

APPENDIX F

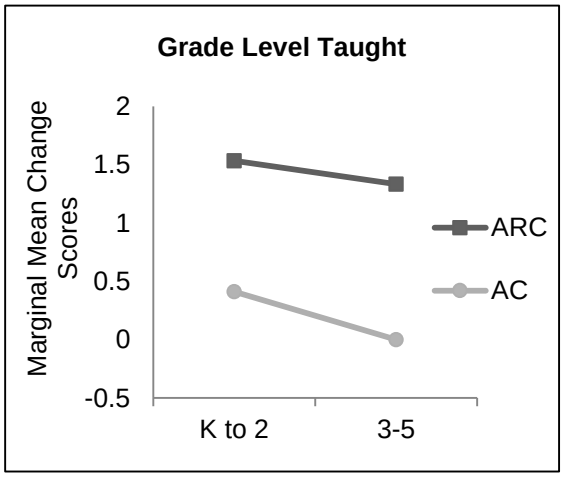
Interaction plots of potential moderators by intervention condition for each of the dependent variables.

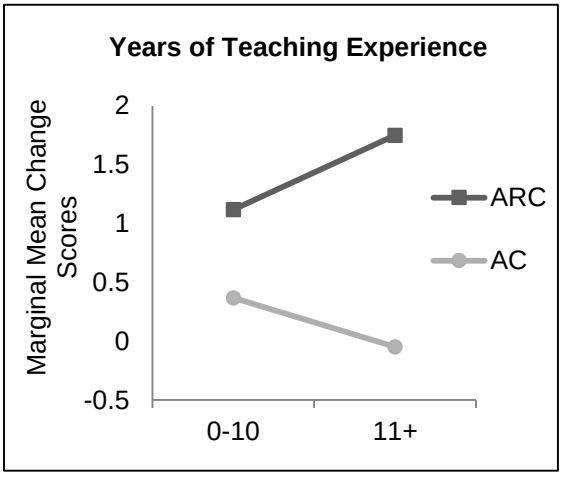
TSWQ School Connectedness



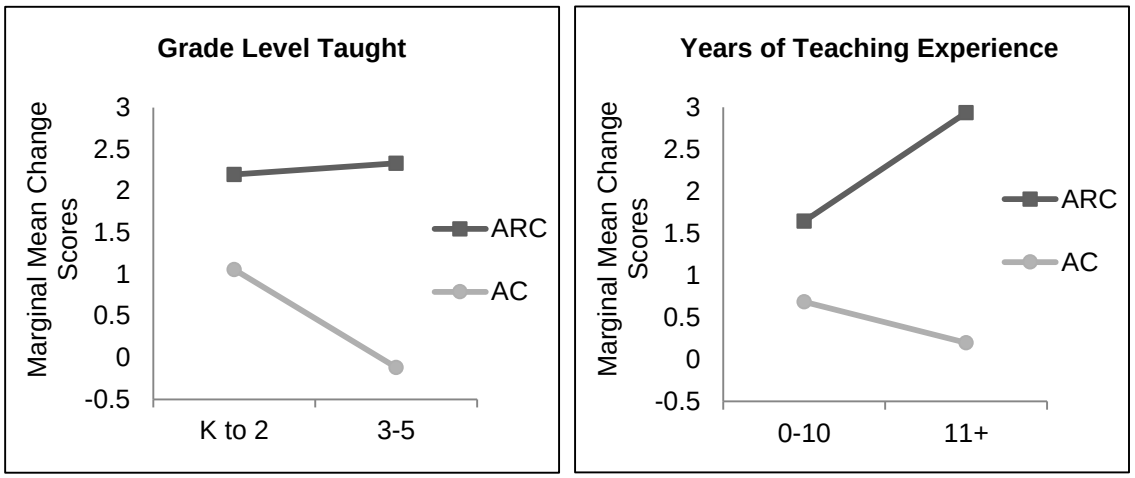


TSWQ Teaching Efficacy

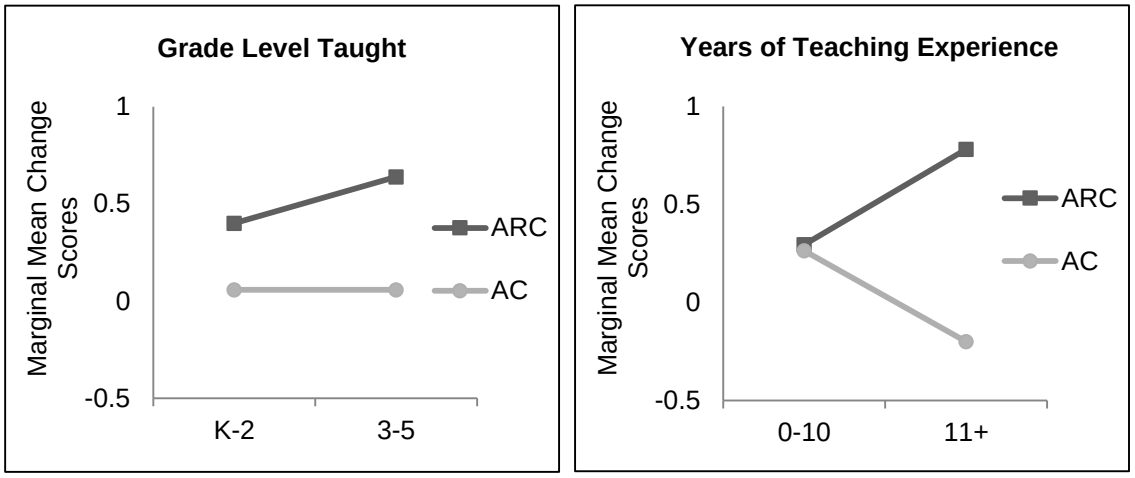
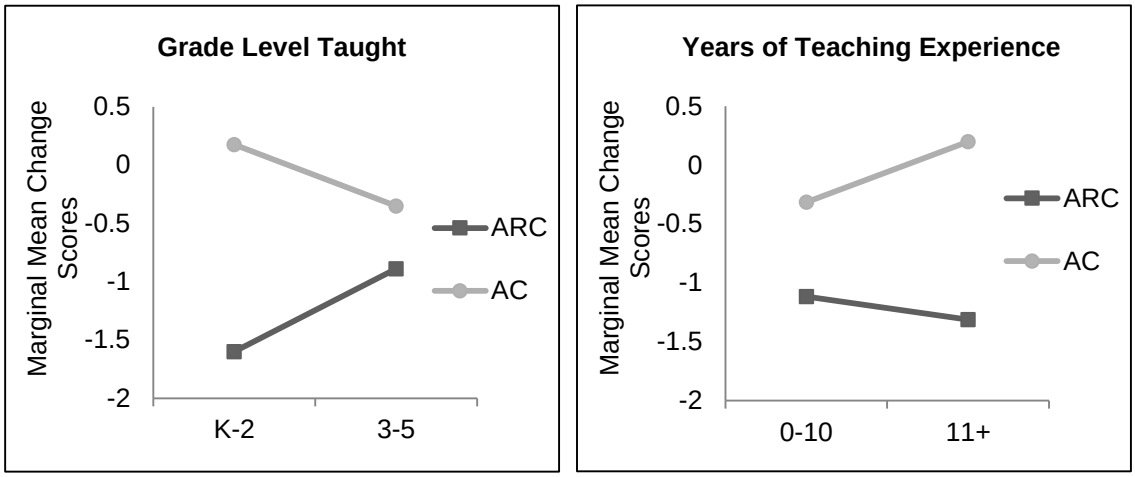




TSWQ Total



Sleep Habits



Emotional Exhaustion