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Relationship Between Prekindergarten to Grade 12 Teachers' Mindfulness and Self-Efficacy

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Walden University
2018

Abstract

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by

Ketra Dee Gardner

MA, University of Nevada, Reno, 2004

BS, Mankato State University, 1986

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Leadership, Policy, and Change in Education

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Abstract

Teachers throughout the United States show low levels of self-efficacy which not only affects their own well-being in the profession but also their students' opportunity to learn. The gap in the literature addressed by this study is the relationship between self-efficacy and mindfulness. Grounded in Shapiro's model of mindfulness and Bandura's theory of self-efficacy, the purpose of this study was to explore the relationship between prekindergarten to grade 12 teachers' 5 facets of mindfulness scores and their perceived level of self-efficacy score at Regional School District (RSD, a pseudonym). The study is a nonexperiemental correlational design for which 130 prekindergarten to grade 12 teachers from a total of 633 teachers (40% response rate) completed an online-administered survey called the Five Facets of Mindfulness Questionnaire (FFMQ) and the Teachers' Sense of Self-Efficacy Scale (TSES). The Pearson correlation coefficients showed significant relationships between self-efficacy scores and the overall mindfulness score (p = .000) as well as in the 4 facets describing (p = .007*)*, acting with awareness (p = .002), nonjudging of inner experience (p = .000), and nonreactivity to inner experience (p = .000). Observing (p = .295) was the only facet where a significant relationship with self-efficacy was not found. When teachers use some of the 5 facets of mindfulness consistently, a potential positive social change benefit may be increased self-efficacy, which might lead to increased teacher satisfaction, lower attrition rates, and may affect positive social change in students meeting their learning goals.

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Dedication

"Drink your tea slowly and reverently, as if it is the axis on which the world earth revolves—slowly, evenly, without rushing toward the future; live the actual moment. Only this moment is life."

—Thich Nhất Hạnh

"All you need to do is follow the instructions: Sit down, shut up, watch, and don't get involved. Gradually, the meditation experience will open up all by itself."

—Ajahn Brahm

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Chapter 1: Introduction to the Study

Teachers encounter many stressful challenges in their classrooms, not all of which are related to pedagogy. Rigorous content standards implemented through educator performance standards, student testing, time constraints, and accountability can lead to pedagogical stress (Jennings, 2015). Teachers must interact with families and students who are in crisis, manage student behavioral concerns, and teach students who have come to school without adequate preparation for learning (Jennings, Lantieri, & Roeser, 2012). Teachers who feel high stress can develop lower levels of self-efficacy (Skaalvik, & Skaalvik, 2016; Yu, Wang, Zhai, Dai, & Yang, 2015). Mindfulness is a form of meditation and is a technique of present-moment awareness that provides a sense of clarity and acceptance of present-moment reality (Kabat-Zinn, 1994). A variety of options are used to practice mindfulness in formal and informal ways. In a formal sitting mindfulness meditation, a person sits for a specific amount of time with the intent of focusing attention nonjudgmentally (Jennings, 2015; Kabat-Zinn, 2013). In informal mindfulness practice, a person completes any task at hand while holding attention to the moment and the actual task, without judgment (Kabat-Zinn, 2013). Walking, eating, household chores, or any work tasks can be used for informal mindfulness practice (Jennings, 2015; Kabat-Zinn, 2013; Thich, 1975). Teachers can informally practice mindfulness while teaching a lesson, facilitating a discussion, or engaging in one-on-one interactions with students. Mindful teaching might not look different to an observer, but the teacher would notice alert awareness of each moment, with intention, nonjudgmentally. Both the formal sitting meditation practice and the informal daily

activity practices of mindfulness include focused attention and allowing one's thoughts to come and go without lingering on them or assigning a value judgment to them (Brahm, 2006). Practitioners often comment that the concept of mindfulness is simple to understand but not easy to implement (Kabat-Zinn, 1994). Mindful teaching is not an additional chore to accomplish; it is paying attention to what is occurring during each teaching moment.

Self-efficacy is a person's belief in his or her ability to deal with complex tasks (Bandura, 1977a). Tschannen-Moran and Hoy (2001) indicated that a teacher's self-efficacy is related to a belief that one's teaching capabilities can bring about student learning. Self-efficacy has often been noted in the literature as a component of teacher competencies (Bermejo-Toro, Prieto-Ursúa, & Hernández, 2016; Dixon, Yssel, McConnell, & Hardin, 2014; Klassen, Tze, Betts, & Gordon, 2011). Teachers with higher levels of self-efficacy have higher levels of instructional quality (Holzberger, Philipp, & Kunter, 2013). Self-efficacy beliefs might affect teachers' job stress and commitment to the profession (Klassen et al., 2013), and increasing self-efficacy is relevant for teachers.

Informal mindfulness practices could allow teachers to work toward the goal of decreasing stress without taking up more of their limited time. This study explored the relationship between prekindergarten (pre-K) to Grade 12 teachers' mindfulness and their perceived self-efficacy.

In this chapter, I explore how mindfulness is related to teachers' sense of self-efficacy. I explore the background of the study, address the problem of teacher stress, and explain the purpose and conceptual framework of the study. I discuss the nature of the

study and the definitions of terms and assumptions. Finally, I discuss the scope and delimitations, limitations, and significance of the study.

Background

Kabat-Zinn (1994) defined mindfulness as a way of nonjudgmentally paying attention in the present moment. Baer, Smith, Hopkins, Krietemeyer, and Toney (2006) identified five specific facets of mindfulness, which are observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience. The following are brief summaries of the facets:

- *Facet 1—Observing*: "noticing or attending to internal and external experiences";
- *Facet 2—Describing*: "labeling internal experiences with words";
- *Facet 3—Acting with awareness*: "attending to one's activities of the moment";
- *Facet 4—Nonjudging of inner experience*: "taking a nonevaluative stance toward thoughts and feelings"; and
- *Facet 5—Nonreactivity to inner experience*: "tendency to allow thoughts and feelings to come and go" (Baer et al., 2008, p. 330).

Some well-being benefits of mindfulness include neuroplasticity, the ability of the brain to change (Davidson & Lutz, 2008), and improved attention and working memory (Jha, Krompinger, & Baime, 2007). Neuroplasticity and improved attention and memory are also of benefit in a classroom. Other well-being attributes of mindfulness include positive mood and immune response (Davidson et al., 2003) as well as emotional

regulation and reduced stress (Eberth & Sedlmeier, 2012). Mindfulness provides benefits to teachers in classrooms, including more effective teaching behavior (Flook, Goldberg, Pinger, Bonus, & Davidson, 2013) and increased self-efficacy (Crain, Schonert-Reichl, & Roeser, 2017). High stress levels in teachers are related to lower levels of self-efficacy (Dicke et al., 2014); mindfulness can decrease stress and possibly increase self-efficacy (Gouda, Luong, Schmidt, & Bauer, 2016).

An example of the concept of mindfulness may be seen in the following scenario: If a student acts out by throwing a pencil, a teacher could react from inner experience in anger and assume that the student threw the pencil to cause harm. A judgmental response to this incident would be to declare the child naughty. In contrast, practicing mindfulness could lead the teacher to observe the thrown pencil without judgment, considering an appropriate response. An observant teacher might notice that the child came to school upset, possibly from a distressing event with a parent or sibling prior to arriving at school. Observing and describing the incident nonjudgmentally help the teacher to pause before reacting with awareness. Mindfulness provides space between the event and the teacher's reaction to the event. This space allows for clear understanding of each moment and allows teachers to select their response based on that improved understanding. Mindful people have options when they respond—they respond not on autopilot or out of habit and pattern, but with thought and care. This increased awareness could lead to long-term change in how they respond to everyday situations. Changing responses could lead to noticing the effect of each response. Mindfully noticing the effect of a response or

interaction could lead to a greater sense of self-efficacy, much like Bandura's (1977b) performance accomplishments.

Although there is an abundance of literature about mindfulness and its benefits, few researchers have examined the five facets of mindfulness and self-efficacy. Jennings, Frank, Snowberg, Coccia, and Greenberg (2013) implemented a mindfulness intervention and examined the five facets of mindfulness and teachers' sense of self-efficacy, noting increases in both teacher mindfulness and efficacy. However, no attempt was made to examine the relationship of the facets to self-efficacy. This study was needed to specifically explore the relationship between Regional School District (RSD, a pseudonym) pre-K to Grade 12 teachers' five facets of mindfulness and their perceived self-efficacy.

Problem Statement

Recent literature has indicated that many teachers report feelings of high stress (MetLife, 2012). There are many causes of teacher stress. In a study across several states, test-based accountability policies were strongly linked to teacher stress and burnout, leading to high turnover of teachers, which causes a constant drain on school resources (Ryan et al., 2017). Moreover, teachers have felt the added stress of high-stakes testing, regardless of whether the subject matter they taught was tested or untested (Gonzalez, Peters, Orange, & Grigsby, 2017). Test stress may even be present throughout the year (von der Embse, Sandilos, Pendergast, & Mankin, 2016). As test-based accountability policies become widespread, many more teachers may experience this stress.

In addition, teachers have indicated both high workload and severe time pressure as causes of stress (Skaalvik & Skaalvik, 2015). Teachers in this study specified a high level of job satisfaction, which came from working with children, but this job satisfaction was not enough to counteract physical and emotional exhaustion occurring over time. Constant drain can lead to teacher burnout.

Teacher stress has many different causes, and teachers are searching for coping mechanisms (Shumba, Maphosa, Rembe, Okeke, & Drake, 2016). An examination of special education teachers found many causes of stress and indicated that stressed teachers demonstrated less student engagement and reduced teaching outcomes (Wong, Ruble, Yu, & McGrew, 2017). Furthermore, high levels of stress can lead to a lower sense of self-efficacy (Dicke et al., 2014; Klassen & Chiu, 2010; Skaalvik & Skaalvik, 2016; Yu et al., 2015). Teachers' stress not only affects their health, but also contributes to burnout, high turnover, and lower self-efficacy.

Teachers at RSD stated that they were not immune to experiencing stress and a lower sense of self-efficacy. In addition to identifying teacher stress, recent literature has called for support for teachers in coping with stress (Gonzalez et al., 2017; Shumba et al., 2016; Skaalvik & Skaalvik, 2016; von der Embse et al., 2016; Wong et al., 2017). Teachers may benefit from mindfulness as a coping strategy to help them relieve stress and possibly improve self-efficacy.

A gap in the literature exists as to whether there is a relationship between the five facets of mindfulness and self-efficacy. This analysis adds to the body of knowledge needed to address the problem of teacher stress by determining whether there is a

relationship between any of the five facets of mindfulness and teachers' sense of self-efficacy.

Purpose of the Study

The purpose of this quantitative study was to determine the relationship between pre-K to Grade 12 teachers' five facets of mindfulness and their perceived self-efficacy in RSD. The independent variables were the five facets of mindfulness, which were measured using the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006). Each facet was a subscale in the FFMQ. The dependent variable was teachers' sense of self-efficacy and was measured using the Teachers' Sense of Efficacy Scale (TSES; Tschannen-Moran & Hoy, 2001).

Research Questions and Hypotheses

The research questions and hypotheses were as follows:

Research Question 1 (RQ1): What is the relationship between pre-K to Grade 12 teachers' mindfulness scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$1: There is no statistically significant relationship between pre-K to Grade 12 teachers' FFMQ and TSES scores.

H_a1: There is a statistically significant relationship between pre-K to Grade 12 teachers' FFMQ and TSES scores.

Research Question 2 (RQ2): What is the relationship between pre-K to Grade 12 teachers' observing scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$2: There is no statistically significant relationship between pre-K to Grade 12 teachers' observing FFMQ and TSES scores.

H_a2: There is a statistically significant relationship between pre-K to Grade 12 teachers' observing FFMQ and TSES scores.

Research Question 3 (RQ3): What is the relationship between pre-K to Grade 12 teachers' describing scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$3: There is no statistically significant relationship between pre-K to Grade 12 teachers' describing FFMQ and TSES scores.

H_a3: There is a statistically significant relationship between pre-K to Grade 12 teachers' describing FFMQ and TSES scores.

Research Question 4 (RQ4): What is the relationship between pre-K to Grade 12 teachers' acting with awareness scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$4: There is no statistically significant relationship between pre-K to Grade 12 teachers' acting with awareness FFMQ and TSES scores.

H_a4: There is a statistically significant relationship between pre-K to Grade 12 teachers' acting with awareness FFMQ and TSES scores.

Research Question 5 (RQ5): What is the relationship between pre-K to Grade 12 teachers' nonjudging of inner experience scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$5: There is no statistically significant relationship between pre-K to Grade 12 teachers' nonjudging of inner experience FFMQ and TSES scores.

H_a5: There is a statistically significant relationship between pre-K to Grade 12 teachers' nonjudging of inner experience FFMQ and TSES scores.

Research Question 6 (RQ6): What is the relationship between pre-K to Grade 12 teachers' nonreactivity to inner experience scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$6: There is no statistically significant relationship between pre-K to Grade 12 teachers' nonreactivity to inner experience FFMQ and TSES scores.

H_a6: There is a statistically significant relationship between pre-K to Grade 12 teachers' nonreactivity to inner experience FFMQ and TSES scores.

Theoretical Framework

The theoretical foundations for this study were Shapiro, Carlson, Astin, and Freedman's (2006) model of mindfulness and Bandura's theory of self-efficacy (1977b). Mindfulness can increase one's self-regulation, or one's ability to control oneself (Shapiro et al., 2006). Self-regulation could then lead to greater stability and control of one's actions. Shapiro et al.'s model of mindfulness indicates that intention, attitude, and attention are fundamental to mindfulness, which then develops into "reperceiving" (p. 377). Shapiro et al. defined *reperceiving* as movement toward positive outcomes including "self-regulation, values clarification, cognitive, emotional, and behavioral flexibility, and exposure" (p. 377). Shapiro's model indicates that mindfulness changes how people react.

The theory I used in this study for teachers' sense of self-efficacy came from the social learning theory developed by Bandura (1977b). Specifically, self-efficacy theory indicates that expectations of efficacy are resultant from performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal (Bandura, 1977a). Shapiro et al. (2006) discussed self-regulation as related to feedback loops, ending with adaptability to change and stability of functioning. Reperceiving is the link between self-regulation and self-efficacy. In Chapter 2, I expand on these theories and discuss their part in the development of this study.

Nature of the Study

In this quantitative study I sought to explore the relationship between pre-K to Grade 12 teachers' mindfulness and their perceived self-efficacy in RSD. The correlational design was selected because this study aimed to explore an initial understanding of whether there is a relationship between the dependent and independent variables. The study was conducted at RSD and included teachers employed at RSD in the 2016-2017 academic year. Teachers were asked to participate by completing the online survey. A Pearson product-moment correlation coefficient was computed.

Definitions

Terms used in this study include the following:

Acting with awareness: Attending to one's activities of the moment; contrasted with "automatic pilot," or behaving mechanically while attention is focused elsewhere (Baer et al., 2008, p. 330).

Describing: Labeling internal experiences with words (Baer et al., 2008, p. 330).

Mindfulness: Paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally (Kabat-Zinn, 1994, p. 4).

Nonjudging of inner experience: Taking a nonevaluative stance toward thoughts and feelings (Baer et al., 2008, p. 330).

Nonreactivity to inner experience: The tendency to allow thoughts and feelings to come and go, without getting caught up in or carried away by them (Baer et al., 2008, p. 330).

Observing: Noticing and attending to sensations, perceptions, thoughts, and feelings (FFMQ; Baer et al., 2006, p. 1).

Reperceiving: A shift in perspective brought about by intentionally attending with openness and without judgement (Shapiro et al., 2006).

Self-efficacy: The conviction that one can successfully execute the behavior required to produce outcomes (Bandura, 1977a).

Teachers' sense of self-efficacy: A teacher's sense of self-efficacy is a belief in his or her capabilities to bring about desired outcomes of student engagement and learning (Tschannen-Moran & Hoy, 2001, p. 783).

Assumptions

It was assumed that the respondents provided honest responses to the questionnaires by accurately reflecting on their daily practice to determine their perceived levels of mindfulness and self-efficacy.

Scope and Delimitations

The scope of this study encompassed an exploration of the relationship between mindfulness and self-efficacy. I decided to specifically explore the relationship between the FFMQ scores and TSES score because I wanted to know how each of the facets related to self-efficacy. This study included only pre-K to Grade 12 teachers at RSD, which decreases the generalizability of the study. I excluded school administrators from the sample population, even though school leaders practicing mindfulness experienced many benefits to their leadership (Frizzell, Hoon, & Banner, 2016). Also excluded from the study was the Buddhist framework for mindfulness meditation (Chadha, 2015). To increase acceptance in public schools, I focused on a secular framework for mindfulness.

Limitations

A limitation of this study was the survey design. Administering questionnaires has disadvantages. Questionnaires require simple questions with no opportunity for follow-up. The response rate was 40%, which is acceptable and expected in the social sciences. The response rate indicates that the population of teachers might not be appropriately presented in this sample because there is no control over who fills out the questionnaire. Teachers who are interested in mindfulness practices may have completed the survey while others did not.

Other limitations could be confounding variables. Perhaps the levels of stress, burnout, gender (Aziz & Quraishi, 2017; Klassen & Chiu, 2010; Tran, 2015), years of teaching experience (Kyung & Eun, 2018; Wolters & Daugherty, 2007), or job

satisfaction (Emin Türkoğlu, Cansoy, & Parlar, 2017) of participants directly influenced mindfulness or their sense of self-efficacy.

Another limitation of this study was one of bias. I was a teacher in this pre-K to Grade 12 school district. It is unlikely, but possible, that some teachers had heard me espouse the benefits of mindfulness, and that this exposure had potentially increased their likelihood of being mindful or practicing mindfulness in their daily lives. I addressed this by removing my home school from the study to minimize the possibility of bias, as discussed in Chapter 3. I had minimal contact with teachers outside my home school. I also opted to randomize the sample to decrease the possibility of this bias. The results collected were anonymous in a further effort to minimize personal bias.

Significance

The significance of this study is in its contribution to contemplative research for teachers. Mindfulness could benefit teachers at a personal level through improved well-being, efficacy, and reduced stress (Jennings, Frank, Snowberg, Coccia, & Greenberg, 2013; Schonert-Reichl, 2017; Taylor et al., 2016), as well as through enhanced cognitive regulation (Kerr, Sacchet, Lazar, Moore, & Jones, 2013). Teachers with a greater sense of self-efficacy could provide students with increased achievement (Bruce, Esmonde, Ross, Dookie, & Beatty, 2010; Mojavezi & Tamiz, 2012). Increased teacher self-efficacy could also promote increased student self-efficacy (Miller, Ramirez, & Murdock, 2017) and possibly stronger literacy skills (Guo, Piasta, Justice, & Kaderavek, 2010).

Finding a relationship between one or more of the FFMQ scores and the TSES score could influence teacher education programs. Future teacher education programs

could introduce mindfulness training to new teachers, providing them with another tool as they enter a classroom for the first time. Such programs could be tailored to focus on the facet of mindfulness with the greatest relationship to teachers' sense of self-efficacy. Existing professional development programs could also incorporate mindfulness training for teachers already in the field with this same focus. Teachers are likely to be interested in this type of training because of its possible personal and professional benefits. Teachers might feel more inclined to participate in training aimed at their personal growth and well-being. Mindfulness flows seamlessly into any daily routine while providing many beneficial results. Jennings and Greenberg (2009) noted that self-awareness may help teachers cope. Reducing levels of stress benefits teachers, making mindfulness training a desirable professional development opportunity for teachers.

Positive social change could result through knowing the relationship between the FFMQ scores and the TSES score. Teachers who are modeling mindfulness and have reduced stress in their classrooms serve as examples to students, parents, and other teachers. Kabat-Zinn (2012) extolled the benefits of mindfulness to help individuals live wise and happy lives. Mindful teachers could then share their skills and knowledge of mindfulness, either formally through professional development training or informally through small group discussions and conversations with other teachers. Students benefit from firsthand observation of the model of their teacher's mindfulness and reduced stress and have the potential to learn and practice while spreading the positive benefits of mindfulness into their own families, and even the world.

Summary

In this chapter, I briefly summarized the literature, provided the background of the study, addressed the problem of teacher inefficacy, and offered the purpose and conceptual framework of the study. The nature of the study was specified, and definitions of terms and assumptions were provided. The scope and delimitations, limitations, and significance of the study were also discussed.

In Chapter 2, I address the literature search strategy and offer a detailed analysis of the theoretical foundations briefly mentioned in Chapter 1. Also, in Chapter 2, I provide an overview of the theoretical foundations of mindfulness and self-efficacy. The current literature on mindfulness and self-efficacy is described in the literature review, along with how it relates to the current study. I conclude Chapter 2 with what is known and not known about mindfulness and teachers' sense of self-efficacy.

Chapter 2: Literature Review

Introduction

Research has shown that stressed teachers have low self-efficacy (Gonzalez et al., 2017; von der Embse et al., 2016). Recent research on mindfulness-based methods may provide a benefit for teachers and possibly affect efficacy (Gouda et al., 2016). The purpose of this study was to explore the relationship between pre-K to Grade 12 teachers' mindfulness and their perceived self-efficacy at RSD.

In this chapter, I provide the literature search strategy and a theoretical foundation of both self-efficacy and mindfulness, as well as a thorough review of current literature related to these concepts. The literature review section offers a thorough review of current literature related to teachers' sense of self-efficacy, mindfulness, and the five facets of mindfulness. Included in the summary is a discussion of how this study fills a gap in the research as well as how the gap is connected to the methods described in Chapter 3.

Literature Search Strategy

Literature searches were conducted online through the Walden University Library. Most searches were conducted through EBSCOhost Advanced Search. Education databases within EBSCOhost Advanced included Education Research Complete, ERIC, Primary Search, and Teacher Reference Center. Multidisciplinary databases included ProQuest Central, Academic Search Complete, PsycARTICLES, PsycINFO, PsycTESTS, and Mental Measurements Yearbook with Tests in Print. Doctoral resources searched included Dissertations and Theses, Tests and Measures

databases, and Google Scholar. Search terms used separately and in combinations included, but were not limited to, *mindfulness, mindfulness meditation, mindfulness-based stress reduction, mindfulness benefits, mindfulness in the workplace, five facets of mindfulness, self-efficacy, teachers' sense of self-efficacy, teacher self-efficacy, professional learning and efficacy, gender and efficacy, experience and efficacy, stress, classroom management, comprehensive classroom management, contemplative education, prosocial education, educators,* and *teachers*. An effort was made to stay within the year range of 2010 to 2018. However, some foundational works that fell outside that range were considered essential to include based on their importance in laying the groundwork for this study. For example, seminal theoretical works by Bandura (1977a, 1977b, 1986, 1994) were included as part of the theoretical framework.

Theoretical Foundation

This study relies on two theories. The first theory, Bandura's (1977b) theory of self-efficacy, provides the basis for an examination and discussion of self-efficacy and teachers' sense of self-efficacy. Second, for mindfulness, Shapiro et al.'s (2006) model of mindfulness is discussed and examined. Consideration of these theories provides the study's foundation and leads the way into Chapter 3 and the methods used for this exploration.

Self-Efficacy

Self-efficacy has its roots in Bandura's (1977b) social learning theory, later renamed *social cognitive theory* (Bandura, 1986). This theory explains the processes of human learning and functioning. Bandura's theory presents three basic tenets. The first is

that people can learn through observation. The next is that internal mental states such as intrinsic reinforcement are also important to learning. Finally, learning does not necessarily lead to a change in behavior. Bandura (1977a) claimed that changes occur either through cognitive processes or performance-based procedures, with both processes being driven, in part, by self-efficacy.

According to Bandura, self-efficacy is defined as one's personal belief in an ability to perform a task. Bandura's view of self-efficacy includes four efficacy expectations: performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal. Bandura (1977b) considered performance accomplishments as the most dependable of the four expectations. This source of self-efficacy is simply based on one's own experiences. Repeated successes and even occasional failures increase one's sense of self-efficacy. Vicarious experience includes both live and symbolic modeling. Watching others modeling the behavior to be accomplished increases one's own sense of self-efficacy. Verbal persuasion is easy to employ, with less effective results. Verbal persuasion is leading others through experiences while persuading them that they possess the efficacy to accomplish the task. Bandura described this source of self-efficacy as weaker than the others. Emotional arousal influences efficacy expectations, with high arousal debilitating performance. These four sources of self-efficacy outline the groundwork of Bandura's self-efficacy theory.

There are postulates that were considered in the application of this theory. Bandura's (1977b) third tenet of social learning theory, that learning does not necessarily lead to change in behavior, could have influenced the results of this study. It is possible

that teachers have observed or been taught a certain level of mindfulness or self-efficacy and have chosen not to use this learning to change their behavior. In this case, the teachers' responses to the questionnaire could indicate a high level of mindfulness with no relationship to their level of self-efficacy, with the underlying reason being that not all learning leads to change. This assumption was considered and is discussed in Chapter 4 in relation to the results of the study.

Another assumption to be considered is the fourth efficacy expectation, emotional arousal, sometimes called *physiological response* (Bandura, 1977a, 1977b). This expectation describes high levels of arousal as weakening (1977b) individuals' self-efficacy, whereas reducing this arousal may increase individuals' feeling of efficacy. Because mindfulness has been found to reduce stress (Grossman, Niemann, Schmidt, & Walach, 2004; Kabat-Zinn, 2013; Khoury, Sharma, Rush, & Fournier, 2015), it is possible that increased mindfulness could lead to decreased emotional arousal, leading to a positive relationship between mindfulness and self-efficacy. This assumption was considered and is addressed in Chapter 4, in the results of the study.

Previous Application of Self-Efficacy in Education

Self-efficacy has been examined by researchers for more than 30 years since Bandura's (1977a) early work on the subject, yet many questions remain. Klassen, Tze, Betts, and Gordon (2011) provided a meta-analysis of self-efficacy research from the years 1998-2009 to track developments. In their overview, they noted research growth in methodological diversity, domain specificity, internationalization, and a focus on collective efficacy. However, this meta-analysis revealed a lack of research attention to

sources of teacher efficacy, the link between teacher efficacy and student outcomes, measurement problems, and relevance to educational practice. More recent works by Bermejo-Toro, Prieto-Ursúa, and Hernández (2016) and Dixon, Yssel, McConnell, and Hardin (2014) addressed the importance of self-efficacy in teachers. Of interest to the current study is the area of teacher efficacy as well as self-efficacy measurement.

Rationale for Current Study

While questions remain regarding self-efficacy and self-efficacy research, it is beneficial to address the areas of concern noted by Klassen et al. (2011). Very little research has examined the sources of self-efficacy, relying on Bandura's (1977a) four expectations, and it appears that a gap exists in this area. Further exploration of mindfulness is warranted to determine a possible source of, or a relationship to, self-efficacy. Klassen et al. also noted self-efficacy measurement as an area lacking in research. This was a concern for the current study, as I attempted to accurately measure teachers' levels of self-efficacy. Klassen et al. recommended the assessment created by Tschannen-Moran and Hoy (2001) as an assessment more closely related to self-efficacy theory than other assessments examined. I selected this assessment for the current study based on this recommendation and judged it to be well suited to the research questions.

Self-Efficacy and the Present Study

Bandura's (1977b) social learning theory—more precisely, self-efficacy theory (Bandura, 1977a)—was chosen as the vehicle to examine teachers' sense of self-efficacy because this theory explains human learning processes as well as human functioning. Unlike early behaviorists, Bandura (1977a) included cognitive processes in acquiring and

learning new behaviors. Bandura (1994) claimed that efficacy beliefs were a substantial part of human functioning. The role that efficacy beliefs have in teacher performance has been tied to education research for many years, with the first attempt at measuring teacher efficacy in the RAND report (Armor et al., 1976). Bandura's (1986) work aligns to the present study, specifically, the aspect of physiological response as it relates to emotional arousal because of the link between mindfulness and arousal reduction. Bandura (1986) also claimed that some behaviors limited emotional arousal while also increasing efficacy. Mindfulness would be such a treatment that could affect emotional arousal. Davidson et al. (2003) noted the effect of mindfulness on positive mood and immune response while Eberth and Sedlmeier (2012) noted the effect of mindfulness on emotion regulation and reduced stress. Bandura (1986) also noted the widespread effect of mood on efficacy. These connections made Bandura's self-efficacy theory the perfect groundwork to examine a possible relationship between mindfulness and teachers' sense of self-efficacy.

Mindfulness

The second theory was Shapiro et al.'s (2006) mechanisms of mindfulness. Mindfulness has its origins in Buddhist spiritual traditions (Thich, 1975) and has been described as a metacognitive process (Bishop et al., 2004) and a state of consciousness (Brown & Ryan, 2003). Gunaratana (2011) noted that even though mindfulness can be experienced easily, it can be difficult to describe with symbolic words and may be thought of as presymbolic. Shapiro et al. provided a theory of how mindfulness works.

Shapiro et al. (2006) proposed a model of mindfulness akin to Kabat-Zinn's (1994) definition of mindfulness. Shapiro et al. (2006) constructed a threefold model including intention, attention, and attitude (IAA) to specifically represent the three-part definition. Shapiro et al. visualized the three parts as "interwoven aspects of a single cyclic process [that] occur simultaneously. Mindfulness is this moment-to-moment process." (p. 375). The three axioms of intention, attention, and attitude can be visualized with the metaphor of a three-legged stool, with each leg providing the necessary strength, balance, and stabilization.

Axiom 1: Intention

Intention refers to a focused reason for the practice, one that can be dynamic and evolving (Shapiro et al., 2006). An intention can be as simple as the desire of the person setting it—perhaps the desire to focus on remaining calm throughout the workday—with the option of this intention remaining the same or evolving as desired.

Axiom 2: Attention

Attention refers to paying attention to each moment flowing into the next, being aware of inner and external experience (Shapiro et al., 2006). An analogy from Thich (1975) could explain mindful attention. If one washes the dishes in a hurry while thinking about having a cup of tea, one has not washed the dishes. If one is completely aware of washing the dishes, while following one's breath, being aware of one's thoughts and actions, and being mindful of one's presence, one has mindfully washed the dishes. This analogy demonstrates the attention aspect of the mindfulness model.

Axiom 3: Attitude

Attitude is the final aspect of the model, and Shapiro et al. (2006) noted the essential quality of attitude that one brings to mindfulness. A cold, heartless attitude would be the exact opposite of the type of attitude needed when practicing mindfulness. An attitude of patience, kindness, and openness can help to develop an ability to accept unpleasant and neutral experiences as they come, not striving for pleasure or gain, but acceptance of the moment as it is. Bishop et al. (2004) likewise included attitude into his operational definition of mindfulness, describing it as the "orientation to experience" (p. 233) and characterizing it as openness, curiosity, and acceptance.

The three components, when practiced together, can lead to changes in perspective. Shapiro et al. (2006) coined the term *reperceiving* (p. 377) to describe this shift in perspective and maintain four further components of this meta-mechanism. They include "self-regulation; values clarification; cognitive, emotional, and behavioral flexibility; and exposure" (Shapiro et al., 2006, p. 377). These additional components can be seen as specific outcomes or potential springboards to other outcomes. Shapiro et al. further described reperceiving as the ability to impartially and neutrally observe the happenings of one's mind. Closer examination of the meta-mechanism of reperceiving follows.

The components contained in reperceiving call for closer scrutiny and examination for assumptions appropriate to the application of the theory. Shapiro et al. (2006) described *self-regulation* as being able to remove oneself from patterns in behavior that occur almost subconsciously or on autopilot. Self-regulation can be seen as

gaining the ability to see stressful situations more clearly, without reacting thoughtlessly. Self-regulation can be useful when remembering Bandura's (1977a) four sources of efficacy: performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal. If one could increase self-regulation and an overall reduction of automatic responses to these expectations, the result could be increased efficacy. A possible assumption here is that self-regulation effectively increases levels of self-efficacy. Further research would be needed to determine any possible relationship between the two concepts. This study's analysis of the relationship between mindfulness and self-efficacy could add to this research.

Values clarification may be described as being given the opportunity to reveal those values that are most important, instead of values that have been imposed or conditioned. Shapiro et al. (2006) suggested that when given the opportunity to observe moments without automatic responses, one can embody the values selected. A possible assumption related to the current study is based on the participants' values. Values will differ from person to person and were not included in the breadth of this study.

Cognitive, emotional, and behavioral flexibility enable one to respond without the rigid, automatic response one has been conditioned to use. Shapiro et al. (2006) saw this flexibility as an opportunity for learning and found that it is dependent on one's capacity to disengage from previous patterns and positions. This flexibility to learn reminds one of Bandura's (1977b) social learning theory, in which not all new learning leads to a change in behavior. It is possible that a lack of flexibility about learning could be the reason Bandura (1977b) noted that not all learning leads to change. Perhaps the flexibility gained

through mindfulness could enable self-awareness for change to occur. This study's analysis of a potential relationship between mindfulness and self-efficacy could lead to further research about resistance to change. The assumption of a connection between flexibility and resistance to change in learning was not addressed within the context of this study but bears further examination.

Exposure describes the accessibility of all emotions and experiences. Instead of resisting and avoiding specific experiences and emotions, reperceiving enables one to observe them, thus increasing one's exposure to these experiences. Shapiro et al. (2006) noted that through increased exposure, one can observe that one's thoughts, feelings, and sensations are not as daunting as they might have originally thought. Exposure and mindfulness have been used therapeutically as a technique for treating psychological disorders (Baer, 2006). Mindfulness in a clinical setting has been shown to alleviate pain (Kabat-Zinn, 2013), providing another link to Bandura's (1977a) theory of self-efficacy, specifically the expectation of emotional arousal and performance accomplishments. Bandura noted the mode of induction for emotional arousal as "attribution, relaxation, symbolic desensitization, and symbolic exposure" (p. 195) and for performance accomplishments as "participant modeling, performance desensitization, performance exposure, and self-instructed performance" (p. 195). It is possible that the exposure component of reperceiving has a relationship to both of these aspects of self-efficacy (emotional arousal and performance accomplishment). Through mindfulness, exposure is increased, and two of Bandura's efficacy expectations could be affected, thus improving

efficacy. The assumption of this connection between exposure and self-efficacy was not addressed in the current study, but it could lead to future research.

Previous Application

The study of mindfulness has increased in recent years, but there is a paucity of research regarding a relationship between mindfulness and self-efficacy. Meiklejohn et al. (2012) examined current research on mindfulness training programs with kindergarten to Grade 12 education, for both teachers and students. Potential benefits identified from the training programs studied included impulse control, improved stress, and physical and emotional well-being. Found missing from the three indirect approaches (mindful teaching as opposed to instructing students in mindfulness) considered by Meiklejohn et al. were specific findings related to climate, teaching style, and efficacy. Meiklejohn et al. did not examine the relationship between mindfulness and self-efficacy.

Many researchers have examined self-efficacy and variables that might affect efficacy. The influence of gender on self-efficacy has had varying results. Klassen and Chiu (2010) noted males as more efficacious in classroom management with no gender differences noted in instructional methodology and student engagement. Likewise, Tran (2015) noted gender differences between school environment and self-efficacy as well as stress and self-efficacy. Aziz and Quraishi (2017) noted results different from those suggested by both Klassen and Chiu and Tran. Aziz and Quraishi found no significant influence of gender on self-efficacy of secondary teachers. The influence of years of experience on self-efficacy has had more consistent results. Both Wolters and Daugherty (2007) and Aziz and Quraishi indicated more experienced teachers had a higher sense of

self-efficacy. Klassen and Chiu's results aligned with those of Wolters and Daugherty and Aziz and Quraishi, and also noted a change in self-efficacy over the course of a teacher's career. Klassen and Chiu found less efficacy in the early years, more efficacy in the middle years, and less again as teachers approached the end of their career. Kyung and Eun's (2018) meta-analysis noted years of experience matter for teacher efficacy and academic achievement.

Rationale for Current Study

Choosing a theory and definition of mindfulness was an integral part of the current study that was met with many challenges. While mindfulness has experienced an increased flow of interest and research in the past few decades, no one theory stands out among the others as universally accepted. Beginning with Buddhist origins of mindfulness more than 2,500 years ago (Gunaratana, 2011) and continuing to today, definitions and theories abound. Brown and Ryan (2003) favor a construct where attention and emotive factors cannot be disentangled. Bishop et al.'s (2004) construct has two parts, self-regulation of immediate experience, and an emotion regulation factor characterized by openness, curiosity, and acceptance. While all these paradigms share pieces and parts, it seems that what is most needed is consensus on what the construct of mindfulness entails (Brown, Ryan, & Creswell, 2007; Keng, Smoski, Robins, & 2011). Shapiro et al.'s (2006) theory provided an attempt at conceptualizing this complex psychological construct and was ideally suited for the current study through its many connections with Bandura's (1977a) self-efficacy theory.

Mindfulness and the Present Study

Shapiro et al.'s (2006) mechanisms of mindfulness related to the present study because, in order to search for a relationship between the FFMQ score and TSES score, one must understand not only self-efficacy but also mindfulness. Shapiro et al.'s theory not only provided the mechanisms of mindfulness but provided the foundation for relating mindfulness directly to self-efficacy. Using this foundation as a theoretical starting point, I attempted to answer the research question, which examines the relationship between RSD pre-K to grade 12 teachers' FFMQ scores and their TSES score.

Literature Review Related to Key Variables and Concepts

The purpose of this quantitative study was to explore the relationship between pre-K to Grade 12 teachers' mindfulness and their perceived self-efficacy. Researchers investigated the effects of mindfulness on stress and burnout (Hartwick & Kang, 2013; Newsome, Waldo, & Gruszka, 2012; Sarotar-Zizek, Treven, & Cancer, 2013). Thus, mindfulness could provide benefits to those suffering from stress and burnout. Likewise, researchers explored the effects of mindfulness and self-efficacy (Crain et al., 2017; Gouda et al., 2016; Schonert-Reichl, 2017). Mindfulness is one way to increase one's sense of self-efficacy. However, mindfulness is not the only way to improve levels of stress and sense of self-efficacy, and researchers have examined the effect of professional learning on self-efficacy (Hoffman & Cummings, 2016; Katz & Stupel, 2016; Seals, Mehta, Berzina-Pitcher, & Graves-Wolf, 2017; Telese, 2016). Overall, the literature showed that mindfulness improves levels of stress, burnout, and efficacy, but it is not the

only way to increase efficacy. Nonetheless, there was a scarcity of studies specifically looking at the relationship between the facets of mindfulness and self-efficacy. This review examined research for similar constructs of interest, approaches to the problem of stress, studies related to the facets of mindfulness and self-efficacy as well as looking at what other factors influence self-efficacy.

Self-reporting is common for assessing levels of mindfulness. Many researchers used self-reporting to assess levels of mindfulness (Flook et al., 2013; Gold et al., 2010; Hülsheger, Alberts, Feinholdt, & Lang, 2013; Jennings et al., 2017). Flook et al. measured mindfulness with the FFMQ (Baer et al., 2006) and used cortisol levels to measure teachers' levels of stress. Likewise, Jennings et al. used the FFMQ to measure teachers' levels of mindfulness. Hülsheger, Alberts, Feinholdt, and Lang (2013) used the Mindful Attention and Awareness Scale (MAAS; Brown & Ryan, 2003), while Gold et al. used Baer, Smith, and Allen's (2004) Kentucky Inventory of Mindfulness (KIMS) both are self-reporting. Self-report measures of mindfulness are widespread and used extensively throughout current research, much as was done with the FFMQ (Baer et al., 2006) in the current study.

Self-reporting is common for assessing levels of self-efficacy. Bruce, Esmonde, Ross, Dookie, and Beatty (2010), Guo, Piasta, Justice, and Kaderavek (2010), Jennings et al. (2017), and Sezgin and Erdogan (2015) all used the self-report TSES (Tschannen-Moran & Hoy, 2001) to assess self-efficacy. In contrast, Flook, Goldberg, Pinger, Bonus and Davidson (2013) used the self-report Classroom Assessment Scoring System (CLASS). Equally important, Klassen et al. (2011) noted the TSES as the best available

measure of self-efficacy and recommends it in particular because it was most closely related to self-efficacy theory. The literature demonstrated many examples of teachers self-reporting their levels of mindfulness and self-efficacy. I selected the FFMQ and the TSES as the leading self-report assessments for this study because of their extensive usage established in previous studies.

Approaching the Problem

Teachers reported feelings of high stress. Some teacher stress is related to test-based accountability (Ryan et al., 2017). State policies often require multiple student tests of learning progress throughout the school-year which can lead to higher stress for teachers when deficiencies are noted. Test-based accountability is only one source of teacher stress. Shumba, Maphosa, Rembe, Okeke, and Drake (2016) noted many causes of work-related stress for teachers including burnout, difficult student behavior, and classroom climate. Skaalvik and Skaalvik (2015) linked job satisfaction to teacher stress and many teachers noted an accumulation of factors contributed to feelings of stress. Tran (2015) noted school environment influences teacher levels of stress, although results differed by gender. Teacher stress could lead to burnout and attrition of special education teachers as well as to poorer teaching quality (Wong et al., 2017). Overall, the literature demonstrated that stress in teachers is a widespread problem.

Stress plays a role in teacher self-efficacy. As Yu, Wang, Zhai, Dai, and Yang, (2015) explained, teachers with high levels of stress developed lower levels of self-efficacy. Similarly, Dicke et al. (2014) noted the relationship between high levels of stress and lower levels of self-efficacy. Correspondingly, Holzberger, Philipp, and Kunter

(2013) noted teachers with higher self-efficacy beliefs exhibited higher levels of instructional quality. Thus, teacher stress can affect teachers' sense of self-efficacy. Furthermore, Skaalvik and Skaalvik (2016) noted value conflict, low student motivation, and lack of supervisory support negatively affected self-efficacy. Gonzalez et al. (2017) result aligned with von der Embse et al. (2016) with both noting stress negatively affecting self-efficacy but added test stress as a source of teacher stress, similar to Ryan et al. (2017) as noted above. Overall, the literature showed that stress influences teachers' sense of self-efficacy.

Teachers need help managing stress. As Shumba et al. (2016) explained, teachers need coping mechanisms to deal with stress. Gonzalez, Peters, Orange, and Grigsby (2017) noted that school leaders should try to minimize teacher stress, although they provided no suggestions as to what strategies could be employed to do so. In the same way, Wong, Ruble, Yu, and McGrew (2017) indicated the need for interventions to be in place to help teachers with stress. Skaalvik and Skaalvik (2016) suggested time pressures contributing to stress could be reduced for teachers by working fewer hours or by decreasing class sizes. Reducing hours or class sizes is, generally speaking, economically impossible in many areas. Additionally, von der Embse, Sandilos, Pendergast, and Mankin (2016) argued that strengthening efficacy may be necessary for teachers. Researchers in the literature presented a need for strategies for teachers to manage or minimize their levels of stress, while potentially increasing their sense of self-efficacy.

The Literature and the Variables

In this section I examine the literature surrounding mindfulness, the five facets of mindfulness, and self-efficacy. While much is known about mindfulness, there is a relatively large area of controversy surrounding a working definition. Goldberg et al. (2015) noted the lack of a definition. An operational definition is not the only area of controversy surrounding mindfulness. The lack of specific definition also causes difficulty with measurement, as noted by Grossman (2011). The combination of these factors forms a genuine concern for moving forward in mindfulness research. This dilemma very clearly delineates what remains to be studied; an agreed upon operational definition, followed by specific measures based on the definition. With such a definitive foundation in mindfulness, research could continue in the numerous opportunities offered in stress reduction, self-efficacy, sources of mindfulness, student achievement, education, and learning. An operational definition for mindfulness is needed but will not be addressed in the current study.

Mindfulness can be difficult concept to understand. Grossman (2011) noted an overall lack of congruence of concepts within the leading research and measures of mindfulness. His thinking was that Western researchers had stepped so far from the Buddhist meaning of mindfulness that most of the measures merely measure psychological traits as opposed to measuring mindfulness. Further specific examination of the FFMQ (Baer et al., 2006) was provided by Goldberg et al. (2015). The researchers noticed the lack of a definition. In contrast, Bishop et al.'s (2004) definition of mindfulness provided two parts; the attentive factor is focusing on the present moment,

and the emotion regulation factor characterized by openness, curiosity, and acceptance. The difficulty of the research community to solve the problem of definition and understanding is vexing and leads to ample avenues for future research and investigation.

Self-efficacy is important for teachers (Bermejo-Toro et al., 2016; Zee & Koomen, 2016). It affects many aspects of teaching including instructional quality (Künsting, Neuber, & Lipowsky, 2016), academic achievement (Kyung & Eun, 2018), and student and teacher interactions (Sehgal, Nambudiri, & Mishra, 2017). High levels of stress cause lower levels of self-efficacy (Dicke et al., 2014; Gonzalez et al., 2017; Skaalvik & Skaalvik, 2016; Yu et al., 2015). In like manner, Zee and Koomen (2016) noted higher levels of self-efficacy corresponded to lower levels of stress. Overall, the literature demonstrated the importance of self-efficacy for teachers, making self-efficacy an essential variable to examine in this study.

Review and Synthesis of Related Studies

Mindfulness can provide benefits for teachers. Consistent with the findings of Gold et al. (2010), Flook et al. (2013), Beshai, McAlpine, Weare, and Kuyken (2016), Taylor et al. (2016), and Kerr et al. (2017) all of whom noted reductions in stress for teachers following mindfulness training. Therefore, mindfulness can be a beneficial option for teachers with high levels of stress. Mindfulness has other benefits for teachers. Crain, Schonert-Reichl, and Roeser (2017) noted that following mindfulness training, teachers reported reductions in stress and improved sleep. Frank, Reibel, Broderick, Cantrell, and Metz (2015) and Jennings et al. (2017) results aligned with Crain et al. noting similar improvement in sleep quality and mindfulness. Unexpectedly in Frank et

al.'s result was a lack of an excepted improvement to symptoms of depression or anxiety. As noted by Desrosiers, Klemanski, and Nolen-Hoeksema (2013), Desrosiers, Vine, Curtiss, and Klemanski, (2014), and Raphiphatthana, Jose, and Kielpikowski (2016), mindfulness affects both depression and anxiety. Frank et al. suggested that perhaps the depression and anxiety symptoms of the group were already quite low, explaining this unexpected finding. Teachers with different starting levels of depression and anxiety may have a different result following training. Gouda, Luong, Schmidt, and Bauer's (2016) teachers made a note of improvement in anxiety. Perhaps more research in the area of teachers' levels of depression and anxiety and mindfulness training is needed before a definitive answer is known. On the other hand, mindfulness could be seen as self-differentiating, providing what is needed for the individual specific to their needs. Jennings et al. (2017) results diverged from their previous research (Jennings et al., 2013), finding no increase in teachers' sense of self-efficacy. No increase in self-efficacy was an unexpected result as teacher efficacy improved in the Jennings et al. (2013) research. Jennings et al. (2017) noted a higher baseline of efficacy (one standard deviation) than the earlier group, possibly explaining the unexpected result. In conclusion, the literature showed mindfulness benefits for teachers' levels of stress and sleep, with differing results for depression, anxiety, and efficacy.

Mindfulness practices in the workplace can have benefits. Mindfulness in the workplace was examined by Aikens et al. (2014). Participants were recruited from the Dow Chemical Company and provided an online mindfulness intervention. They were administered the FFMQ (Baer et al., 2006) along with scales measuring stress, resilience,

vigor, and lifestyles. Results indicated reduced stress and improved resiliency and mindfulness. Similarly, Schroeder et al. (2016) provided a mindfulness-based intervention for primary care physicians. Physician participants were provided with Mindful Medicine Curriculum (MMC) and followed with mindfulness and stress measurements as well as patient self-reported satisfaction with said physicians. Physicians were trained to practice mindfulness techniques throughout their workday. Schroeder et al. results aligned with Aikens et al., both found reduction in stress after implementing mindfulness, similarly to the literature about mindfulness and teachers. Mindfulness can benefit stress in the workplace. Carlson et al. (2015) studied mindfulness-based cancer recovery and supportive-expressive group therapy and telomere length. The researchers noted telomere length was associated with prognosis. Participants were breast cancer survivors. They participated in mindfulness-based cancer recovery and supportive-expressive group therapy. Data collected included a mood profile, stress inventory, blood samples, and measurement of telomere length. Results indicated a "trend toward decreases in relative TL" (telomere length, p. 481). The researchers suggested it might be possible to "influence TL in cancer survivors through the use of psychosocial interventions involving group support, emotional expression, stress reduction, and mindfulness meditation" (p. 483). In this case, mindfulness changes were noted with physical measurements in addition to the stress and emotional benefits. Accordingly, mindfulness can result in physical and emotional change for some people; the literature showed many benefits to implementing mindfulness.

Mindfulness is not the only way to increase efficacy. Professional learning can also increase teacher efficacy. Telese (2016) discussed a positive effect on teacher efficacy after professional learning aligned with Katz and Stupel's (2016) discussion of increased teacher efficacy following math profession learning. Katz and Stupel focused on mastery learning and emotional states (weekly 2-hour workshops over seven months) while Telese's professional learning was in the form of graduate-level coursework, with results significant after two semesters. Significant increases in efficacy could be a result of the extended duration of this professional learning. McKinnon and Lamberts (2014) examined teacher efficacy before and after hands-on science professional learning and noted an increase in efficacy. Tzivinikou (2015) provided professional learning for general education and special education teacher pairs and found an increase in efficacy, noting a positive influence on lesson planning, methods, cooperation, planning and implementing interventions for students. Thus, professional learning can have more than a single benefit. Comparatively, McKinnon and Lamberts (2014) found that positive learning experiences in science led to increased efficacy for teachers of science. Conversely, Seals, Mehta, Berzina-Pitcher, and Graves-Wolf (2017) found that teacher efficacy was not affected following professional learning about Science, Technology, Engineering, and Math (STEM). Seals et al. (2017) specifically examined whether or not the type of urban challenge faced by teachers made a difference in their efficacy and unexpectedly found that it did not. The researchers theorized that the teachers selected for the STEM training might have had higher baseline efficacy. Consequently, individual teacher characteristics determine the outcome of professional learning. As shown by the

literature, professional learning can affect teacher efficacy, although not in all instances. In another observation, Emin Türkoğlu, Cansoy, and Parlar (2017) examined the relationship between efficacy and job satisfaction. Researchers noted an increase in efficacy resulted in increased job satisfaction. Overall, the literature showed that many variables could affect efficacy, and likewise, efficacy can affect variables.

Gender may affect one's self-efficacy. Tran's (2015) results aligned with Klassen and Chiu (2010) who found that gender played a role in self-efficacy. Klassen and Chiu (2010) noted females experienced higher levels of workload and classroom stress, in addition to lower levels of self-efficacy. Comparatively, Tran (2015) noted school environment influenced stress differently for gender, finding that females had more stress. Stress can be affected by many variables. Aziz and Quraishi (2017) result diverged from both Klassen and Chiu (2010) and Tran. Aziz and Quraishi noted no influence of gender on efficacy. However, Aziz and Quraishi (2017) did not specifically examine stress levels between genders as their examination pertained to qualifications and experience. The link between gender and efficacy is not clear. The literature showed that gender may or may not affect efficacy, dependent on other variables.

Years of teaching experience may affect efficacy. Kyung and Eun (2018) results aligned with Wolters and Daugherty (2007) and found a significant influence between years of experience and efficacy. Notably, more experienced teachers had a higher sense of efficacy. While this may be true, more experience does not guarantee efficacy. As noted above, Klassen and Chiu (2010) results indicated that teachers who were approaching the end of their career indicated a decline in efficacy. Numerous variables

affect teacher efficacy. The literature showed that years of experience teaching might affect efficacy, which was not examined is this study.

Summary and Conclusions

Mindfulness is a concept that has been around for a long time, though much remains to be explored with no agreed upon operational definition. Mindfulness has many benefits including mindfulness-based professional learning for teachers which had varying results on stress and efficacy (Beshai et al., 2016; Crain et al., 2017; Flook et al., 2013; Frank, Reibel, Broderick, Cantrell, & Metz, 2015; Gouda et al., 2016; Jennings et al., 2017; Kerr et al., 2017; Roeser et al., 2013; Taylor et al., 2016). The literature showed that mindfulness could provide stress reduction for teachers. Mindfulness use is expanding into numerous professions and is implemented with varying results (Aikens et al., 2014; Carlson et al., 2015; Schroeder et al., 2016). Professional learning can affect teacher efficacy (Bruce et al., 2010; Dixon et al., 2014; Katz & Stupel, 2016; McKinnon & Lamberts, 2014; Seals et al., 2017; Telese, 2016; Tzivinikou, 2015). Not all professional learning strengthens efficacy. Many variables can play a part. Gender (Aziz & Quraishi, 2017; Klassen & Chiu, 2010; Tran, 2015) and experience (Aziz & Quraishi, 2017; Kyung & Eun, 2018; Wolters & Daugherty, 2007) can affect teacher efficacy in varying ways. Overall, the literature showed that mindfulness, professional learning, gender, and years of experience could affect stress and efficacy for teachers.

What Is Known and Not Known

Teachers suffering from high levels of stress have less self-efficacy (Dicke et al., 2014; Gonzalez et al., 2017; Klassen & Chiu, 2010; Skaalvik & Skaalvik, 2016; Yu et al.,

2015). Efficacy is important for teachers (Bermejo-Toro et al., 2016; Künsting, Neuber, & Lipowsky, 2016; Kyung & Eun, 2018; Sehgal et al., 2017; Zee & Koomen, 2016). Teachers need coping strategies (Gonzalez et al., 2017; Shumba et al., 2016; Skaalvik & Skaalvik, 2016; Wong et al., 2017). What is not known is what coping strategies might be most efficient for teachers dealing with stress.

Possibly what is most significantly needed in the study of mindfulness is a clear and agreed upon operational definition (Goldberg et al., 2015; Grossman, 2011). Mindfulness-based approaches to teaching may support teachers and mitigate the recurring problem of teacher stress and reduced self-efficacy (Dicke et al., 2014; Flook et al., 2013; Jennings et al., 2012; Jennings et al., 2013; Meiklejohn et al., 2012; Roeser et al., 2013). As noted in the literature review, many researchers have documented the benefits of mindfulness including general health and well-being (Greeson, 2009); improved emotional exhaustion and job satisfaction (Hülsheger et al., 2013); adaptive functioning (Lykins & Baer, 2009); neuroplasticity (Davidson & Lutz, 2008); attention and working memory (Jha et al., 2007); positive mood and immune response (Davidson et al., 2003); emotion regulation and reduced stress (Eberth & Sedlmeier, 2012); and social emotional competencies (Jennings et al., 2013). Much remains to be examined in the field of mindfulness and teachers, specifically if there is a relationship between the FFMA score and TSES score.

Extending Knowledge in the Discipline

Teacher stress is a problem, and coping strategies are needed for teachers (Gonzalez et al., 2017; Shumba et al., 2016; Skaalvik & Skaalvik, 2016; Wong et al.,

2017). Mindfulness could be a coping strategy that reduces stress as well as possibly affecting self-efficacy. Mindfulness research has shown positive health, wellness, emotional, and attentional benefits; more research is needed to examine the connection between mindfulness and self-efficacy. Research has indicated mindfulness affected self-efficacy (Gouda et al., 2016). Mindfulness has been effective at reducing stress for teachers (Beshai et al., 2016; Crain et al., 2017; Gouda et al., 2016; Jennings et al., 2017; Kerr et al., 2017) but, as yet, no literature has examined the relationship between FFMQ scores and TSES scores. My analysis of a relationship between the FFMQ subscale scores and TSES scores could fill this gap and extend what is known about the FFMQ scores and TSES score.

In Chapter 3, I address the research design and rationale, methodology, including population, sampling procedures, and instrumentation. Also, in Chapter 3, I discuss threats to validity and ethical procedures. I examined data from teachers in RSD in 2016-2017 for a possible relationship between FFMQ subscale scores and TSES scores. I computed Pearson product-moment correlation coefficient to examine the relationship between a dependent variable (TSES score) and independent variables (the FFMQ scores). Chapter 3 will provide analysis and understanding about the relationship between the FFMQ scores and TSES score.

Chapter 3: Research Method

Introduction

The purpose of this quantitative study was to explore the relationship between pre-K to Grade 12 teachers' mindfulness and their perceived self-efficacy in RSD. In this chapter, I outline the research design and rationale, methodology, and threats to validity. Additionally, in this chapter I provide the research design and rationale, including variable elaboration and connection of the design to the chosen quantitative method. I then describe the methods for collecting and analyzing data as well as the materials and procedures used in the study. I continue with an examination of threats to validity, including internal, external, and construct validity, as well as ethical concerns for participants. I conclude the chapter with a brief synopsis of the design and methodology of the method of inquiry, leading to a transition to results in Chapter 4.

Research Design and Rationale

The study investigated the scores of an independent variable and subsequent five subscales and one dependent variable. The independent variables in this study were the scores of the FFMQ (Baer et al., 2006), including observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience. The dependent variable was the score of the TSES (Tschannen-Moran & Hoy, 2001).

For this study, I used a quantitative paradigm and a nonexperimental research design. The variables in the current study were not manipulated through an experiment but used as they occurred in a natural setting (Belli, 2009). Johnson (2001) characterized nonexperimental research as having two dimensions, one of purpose and one of time.

Purposes of nonexperimental research include descriptive, predictive, and explanatory, whereas the time component included cross-sectional, prospective/longitudinal, or retrospective research. I used a cross-sectional online survey aimed at collecting data about a possible relationship between the score of the FFMQ and subscales and the score of TSES (Frankfort-Nachmias & Nachmias, 2008).

A survey allows for collecting a broad number of responses, thus providing an understanding of any possible relationship between the score of the FFMQ and the score of the TSES. Many participants can provide information about their levels of mindfulness and sense of self-efficacy through survey responses. The literature review supported the need for exploring the relationship to advance knowledge in the discipline.

Methodology

Population

The population for this study consisted of teachers from one school district, RSD. The accessible population included the 633 teachers at RSD excluding the teachers from my own school, which I excluded as a cautionary measure even though I collected anonymous data. I served as a professional development facilitator, instructional coach, and teacher for 19 years at this school site. To maintain research integrity, my home-based school site with 51 instructional staff was not included in this study.

Sampling and Sampling Procedures

From the population of 633 teachers, I used a random sample of 330 teachers. I used Excel with the function RANDBETWEEN (1,330) to determine the 330 teachers in the sample. The sampling frame for the current study listed all of the pre-K to Grade 12

educators in RSD. This sampling frame was current at the time of the study, though employment within the school district sometimes changes as instructional staff leave the district or new staff are hired. A district email address determined when new hires were viable to the research population. Those leaving the district were deemed to be viable as long as their email addresses remained active.

Sample Size G*Power Analysis

To establish the necessary sample size, a power of .80 is generally recommended (Field, 2013). Trochim and Donnelly (2008) recommended an alpha level of .05, which I selected for this study. The alpha level of .05 is the standard in social sciences. I selected a medium effect size of .30. Using G*Power 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009), I calculated a minimum sample size of 110. Survey method response rates were not guaranteed. Researchers have noted low response rates with online or email surveys (Pedersen & Nielsen, 2016; Stern, Bilgen, & Dillman, 2014). With this response rate information in the forefront, I roughly tripled the number of teachers recruited for participation.

Procedures for Recruitment, Participation, and Data Collection

The pre-K to Grade 12 RSD selected for the current study is in a southwestern state. Most communities in this state are small towns with vast distances to the next town. There are 22 total educational sites in the sample area: seven elementary schools, three middle schools, three high schools (including one adult high school), and five combined elementary/middle/high schools. There are four one-room schools in this district. The size and geographical location of the district led to selecting the online survey methods to

administer the questionnaires. The teachers in this district all had access to the Internet. Email access provided ease of large group contact, which has been noted as beneficial to the survey process (Schonlau, Fricker, & Elliott, 2002). Due to the rural nature of the district, teachers were accustomed to completing online activities as part of their professional duties or daily communications. The online survey approach worked well for the research questions and rural geographical nature of the population. The questionnaires addressed general demographic information, including gender, grade level taught (elementary, middle school, high school), and total years of teaching experience.

After securing Institutional Review Board (IRB) approval from Walden University and approval from the district partner, I emailed participation invitation letters (see Appendix A). Implied consent was obtained when participants clicked on the link within the email. Participants were provided background, procedures, an explanation of the voluntary nature of the study, risks and benefits, payment, privacy, and contact information.

I collected data in SurveyMonkey (2016). Options in this format allowed anonymous data collection. SurveyMonkey excluded all respondent IP addresses. The data were exported to SPSS and analyzed. Participants exited the study through completion of the questionnaire or as nonresponders. A reminder email was sent after 1 week to increase the response rate.

Instrumentation

In this study, I used two published instruments. The FFMQ, developed by Baer et al. (2006), is a self-measurement tool that can be completed without any prior knowledge

of mindfulness or meditation. Baer et al. (2006) explored the existing mindfulness instruments and the facets of mindfulness measured within each instrument. The FFMQ is a unification of these instruments and breaks mindfulness into the five facets described earlier: observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience.

The questionnaire and scoring instructions are part of the public domain and were available for download on the author's website. I contacted Dr. Baer by email (per Walden University requirement) to provide the professional courtesy of notification of the primary author of my plan to use the FFMQ tool in my research. The FFMQ has been validated through comparisons between meditating and nonmeditating groups (Baer et al., 2008) and possesses adequate to good internal reliability for all five subscales with Cronbach's alphas: "nonreactivity = .75, observing = .83, acting with awareness = .87, describing = .91, and nonjudging = .87" (Baer et al., 2006, p. 36).

The FFMQ (see Appendix B) has been used in multiple studies to measure mindfulness with a teacher population. Roeser et al. (2013) examined mindfulness training and reductions in teacher stress and burnout and noted that "total mindfulness scales were statistically reliable at each time point in the study (Cronbach's alphas > .90)" (p. 791). Jennings et al. (2013) implemented an awareness and resilience-controlled trial and found significant effects for observing, and nonreactive subscales of the FFMQ as well as for the summary mindfulness score. Flook et al.'s (2013) pilot study assessed effects of stress, burnout, and teaching efficacy and used Cohen's *d* to provide a metric

for between-group comparisons as well as Pearson's product-moment correlations to examine relationships between changes across various measures.

TSES was developed by Tschannen-Moran and Hoy (2001). Tschannen-Moran and Hoy analyzed existing efficacy measures and compiled the TSES and described it as "a promising tool for capturing this powerful construct and putting it to constructive use" (p. 803). This instrument was appropriate to the current study because it provided a specific tool with "recognized acceptance within the field" (Putman, 2012), and, because of its close alignment with self-efficacy theory, it is considered "superior to previous measures of teacher efficacy" (Hoy & Spero, 2005, p. 354). Permission to use the instrument can be found in Appendix C. Tschannen-Moran and Hoy examined construct validity of the TSES by assessing the correlation of this measure and other existing measures and found reasonable validity with either the long (24-item) or the short (12-item) forms. I selected the short form of the TSES to keep the overall survey including both instruments to a reasonable length. Reliability was determined using Cronbach's alpha and found overall = .90 and subscales: instruction = .86, management = .86, and engagement = .81 (p. 800).

The TSES has been used numerous times by researchers to measure teachers' sense of self-efficacy. Wolters and Daugherty (2007) reported Cronbach's alpha coefficients above .80 in their examination of teaching experience and academic levels taught (elementary, middle, high school). Bruce et al. (2010) examined the effects of sustained classroom-embedded professional learning on teacher efficacy and found Cronbach's alpha of the short version = .70+. Similarly, Mojavezi and Tamiz (2012)

analyzed teachers' sense of self-efficacy and students' motivation and achievement using the long form of the TSES and calculated Cronbach's alpha = .76. Tschannen-Moran and Johnson (2011) explored literacy teachers' self-efficacy beliefs with the short form of the TSES and noted Cronbach's alpha =.75+ on the subscales.

Operationalization

The variables in the current study included the mindfulness variables of observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience. The FFMQ uses a 5-point Likert-type scale for scoring with 1 = *never or rarely true,* 2 = *rarely true,* 3 = *sometimes true,* 4 = *often true,* and 5 = *very often or always true*.

The mindfulness variable observing is defined as "noticing or attending to internal and external experiences" (Baer et al., 2008, p. 330). The scoring for this subscale has eight items addressing observing, and the sum is found. This score represents a quantitative measure of how well a participant performs in observing. One example is "I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing."

The mindfulness variable describing is defined as "labeling internal experiences with words" (Baer et al., 2008, p. 330). The scoring for this subscale has three of eight items reversed. The three reversed items are first reversed as discussed, and then a sum is found. The score represents a quantitative measure of describing. One example of a nonreversed item is "I can easily put my beliefs, opinions, and expectations into words."

The mindfulness variable acting with awareness is defined as "attending to one's activities of the moment" (Baer et al., 2008, p. 330). The scoring for this subscale is

reversed, and eight items within the questionnaire address acting with awareness. In scoring, the scale is reversed, meaning that one would change a score of 5 to 1, 2 to 4, 4 to 2, and 1 to 5, while 3 would stay the same. Then the sum is found for the eight items. The score represents a quantitative measure of acting with awareness. One example is "I rush through activities without being really attentive to them."

The mindfulness variable nonjudging of inner experience is defined as "taking a nonevaluative stance toward thought and feelings" (Baer et al., 2008, p. 330). The scoring for this subscale is reversed, with eight items addressing nonjudgement. In scoring, the scale is reversed, and then the sum is found for the eight items. The score represents a quantitative measure of nonjudgment. One example is "I criticize myself for having irrational or inappropriate emotions."

The mindfulness variable nonreactivity to inner experience is defined as "tendency to allow thought and feelings to come and go" (Baer et al., 2008, p. 330). The scoring for this subscale has seven items addressing nonreactivity to inner experience, and the sum is found. The score represents a quantitative measure of nonreactivity to inner experience. One example is "When I have distressing thoughts or images, I just notice them and let them go."

Scoring instructions for the FFMQ include reversing the score for specific items marked "R." When scoring, one changes 1 to 5, 2 to 4, 4 to 2, and 5 to 1 (3 stays unchanged). Subscale scoring is as follows: Observing: 1, 6, 11, 15, 20, 26, 31, 36; Describing: 2, 7, 12R, 16R, 22R, 27, 32, 37; Acting with awareness: 5R, 8R, 13R, 18R, 23R, 28R, 34R, 38R; Nonjudging of inner experience: 3R, 10R, 14R, 17R, 25R, 30R,

35R, 39R; Nonreactivity to inner experience: 4, 9, 19, 21, 24, 29, 33. Then one sums the scores for each subscale. The instrument provides scores across the subscales and an overall mindfulness score. There is no cut-off in the scoring that indicates that someone is or is not mindful; the scores represent a range of mindfulness. Scores closer to 5 indicate more mindfulness than scores closer to 1.

The teachers' sense of self-efficacy variable is defined as teachers' judgment of their capabilities to bring about desired outcomes of student engagement and learning (Tschannen-Moran & Hoy, 2001, p. 783). The TSES short form has a total of 12 items and is scored with a 9-point Likert-type scale, with 1 = *nothing,* 3 = *very little,* 5 = *some influence,* 7 = *quite a bit,* and 9 = *a great deal.* There are four items each in three subscales, but the current study examined only the overall self-efficacy score. The score represents a quantitative measure of teachers' sense of efficacy. No final cut-off score indicates a high sense of self-efficacy. The score represents a range of self-efficacy, with scores closer to 9 indicating a higher sense of self-efficacy and scores closer to 1 indicating a lower sense of self-efficacy. One example item is "How much can you do to help your students value learning?"

Scoring instructions for the TSES include combining the three subscales (Efficacy in Student Engagement, Efficacy in Instructional Practice, and Efficacy in Classroom Management) to generate a TSES total score.

Data Cleaning and Assumptions

Data from pre-K to Grade 12 teachers in RSD were analyzed for a possible relationship between the FFMQ scores and TSES score through a Pearson product-

moment correlation coefficient using SPSS (23) software. Data cleaning included examining the data for outliers, normality, missing data, linearity, and homoscedasticity (Pallant, 2007). The FFMQ and the TSES both have minimum and maximum scores possible. The variables were examined for normality. I ran histograms of the variables and visually checked for the bell-shaped curve. Additionally, the values of skewness and kurtosis were checked for the variables. The data also were inspected for missing responses to questions. If a participant had missing data for any variable, that participant was excluded from the analysis.

Research Questions and Hypotheses

The research questions and hypotheses were as follows:

RQ1: What is the relationship between pre-K to Grade 12 teachers' mindfulness scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$1: There is no statistically significant relationship between pre-K to Grade 12 teachers' FFMQ and TSES scores.

H_a1: There is a statistically significant relationship between pre-K to Grade 12 teachers' FFMQ and TSES scores.

RQ2: What is the relationship between pre-K to Grade 12 teachers' observing scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$2: There is no statistically significant relationship between pre-K to Grade 12 teachers' observing FFMQ and TSES scores.

H_a2: There is a statistically significant relationship between pre-K to Grade 12 teachers' observing FFMQ and TSES scores.

RQ3: What is the relationship between pre-K to Grade 12 teachers' describing scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$3: There is no statistically significant relationship between pre-K to Grade 12 teachers' describing FFMQ and TSES scores.

H_a3: There is a statistically significant relationship between pre-K to Grade 12 teachers' describing FFMQ and TSES scores.

RQ4: What is the relationship between pre-K to Grade 12 teachers' acting with awareness scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$4: There is no statistically significant relationship between pre-K to Grade 12 teachers' acting with awareness FFMQ and TSES scores.

H_a4: There is a statistically significant relationship between pre-K to Grade 12 teachers' acting with awareness FFMQ and TSES scores.

RQ5: What is the relationship between pre-K to Grade 12 teachers' nonjudging of inner experience scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$5: There is no statistically significant relationship between pre-K to Grade 12 teachers' nonjudging of inner experience FFMQ and TSES scores.

H_a5: There is a statistically significant relationship between pre-K to Grade 12 teachers' nonjudging of inner experience FFMQ and TSES scores.

RQ6: What is the relationship between pre-K to Grade 12 teachers' nonreactivity to inner experience scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$6: There is no statistically significant relationship between pre-K to Grade 12 teachers' nonreactivity to inner experience FFMQ and TSES scores.

H_a6: There is a statistically significant relationship between pre-K to Grade 12 teachers' nonreactivity to inner experience FFMQ and TSES scores.

Data Analysis Plan

First, I computed a Pearson product-moment correlation on the total scores of the FFMQ and the TSES. A relationship was found between the score of mindfulness and the score of teachers' senses of self-efficacy. Pearson product-moment correlation coefficients were then computed on each subscale individually (RQ 2 – RQ 6).

For correlation, Pallant (2007) recommended that data analysis begin with a scatterplot to check for outliers, inspection of data points, and to determine the direction of the relationship between the variables. The variables TSES and overall FFMQ were defined with the dependent variable in the Y-axis box and the independent variable in the X-axis box in SPSS. Following a visual inspection of the scatterplot generated, and noting no violated assumptions, then a correlation was conducted. The resulting correlation table was analyzed for the number of cases (missing data), whether the relationship was positive or negative (direction of relationship), and the size of the correlation coefficient (strength of the relationship). The guidelines used are Cohen's *r* suggested correlation sizes of .10 - .29 = small correlation, .30 - .49 = medium

correlation, and .50 - 1.0 = large correlation. Next, the coefficient of determination was computed to see how much variance the two variables shared. The *r* value was squared, then multiplied by 100 (shift the decimal place two columns to the right) for a percent of variance. Finally, the significance level was considered (Sig. 2 tailed) significant at $p < .05$ level. The same SPSS method was then used for each of the subscales.

There were potential confounding variables for the current study. Job satisfaction could be related to self-efficacy (Bruce et al., 2010; Hülsheger et al., 2013) and could affect mindfulness, self-efficacy, or both. Thus, job satisfaction at RSD could have been examined. I decided that job satisfaction might best be considered in a school by school basis and not an entire district, so it was not included in this study of an entire district. Anxiety or depression could also play a role in mindfulness or self-efficacy (Gold et al., 2010). Factors like gender, years of experience, or stress (Klassen & Chiu, 2010; Tran, 2015) could also be related to mindfulness or self-efficacy. Burnout has also been negatively linked to self-efficacy (Brown, 2012). Overall, the literature showed variables like anxiety, depression, gender, years of experience, and stress could have moderated the relationship between mindfulness and teachers' sense of self-efficacy and could bear examination.

Threats to Validity

External Validity

Homogeneous population, selection bias, and extraneous variables could be threats to this study's external validity. Teachers have similar characteristics, and teachers working in a single district may have unknown similarities. Selection bias could

be another threat through use of a single school district as the study population. Extraneous variables could influence participants' mindfulness or sense of self-efficacy. As previously noted, burnout, stress, anxiety, depression, job satisfaction, gender, and years of experience could all influence either mindfulness, self-efficacy, or both (Brown, 2012; Bruce et al., 2010; Gold et al., 2010; Hülsheger et al., 2013; Klassen & Chiu, 2010; Tran, 2015). Given these challenges, I selected a randomly chosen sample to alleviate some of the influence of selection bias as well as the effect of extraneous variables. While the random selection benefit within a convenience sample might be minimal, it was deemed the best choice. It provided the benefit of an equal chance of inclusion in the sample by all participants regardless of their level of burnout, stress, anxiety, depression, job satisfaction, gender, or years of experience. However, the use of a randomly selected sample may not have been enough to make this study applicable to the population.

Internal Validity

In this study, I intended to explore the relationship between pre-K to Grade 12 teachers' mindfulness and their perceived self-efficacy. Some factors could threaten internal validity. History could be a threat to the internal validity of this study. Teachers in RSD routinely participate in ongoing professional development with a focus on content, pedagogy, or the implementation of state expectations. It is possible that these trainings influenced teachers' mindfulness or self-efficacy. However, because all teachers in RSD participate in similar professional development training, this threat could be considered similar to all participants. Another possible threat to the validity of this study could be maturation. Perhaps teachers are more likely to have levels of mindfulness and

self-efficacy that relate than nonteachers. The results of this study have considered the threat of maturation. Mortality could have been another threat to this study. One participant asked to be withdrawn from the email reminder which was not considered significant. Finally, as discussed earlier, selection could pose a threat to this study. Specific life experiences and choices of RSD teachers may cause them to have higher or lower levels of mindfulness or self-efficacy. Interpretation of results was cautious to consider the factors not examined in this convenience sample.

Construct Validity

Construct validity is concerned with whether the instruments are measuring the actual constructs themselves. Vogt and Johnson (2011) defined construct validity as "the extent to which variables accurately measure the constructs of interest" (p. 71). In the current study, the question is if the TSES measure teachers' sense of self-efficacy and the FFMQ measure the five facets of mindfulness. These assessments have been used extensively by researchers in many different settings. The FFMQ has shown group differences between meditating and nonmeditating individuals (Baer et al., 2008), correlations with related psychological constructs (Baer et al., 2006), and adequately fitting internal factor structure (Baer et al., 2006). A recent analysis by Goldberg et al., (2015), researchers studied both convergent and discriminant construct validity and found "evidence of convergent validity was seen in moderate-sized positive correlations between all FFMQ subscales and total score with a measure of psychological well-being" (p. 4). However, "no evidence was found for the FFMQ's discriminant validity" (p. 4). The authors discussed the possibility that the second treatment group (not the MBSR

group) may have induced mindfulness without meaning to do so. Inconsistencies of this nature lead to the need for more research to determine discriminant validity of the FFMQ.

Tschannen-Moran and Hoy (2001) examined construct validity of both the long form (24-item) and the short form (12-item). Positive correlations with other measures of teaching efficacy indicated the TSES "could be considered reasonably valid and reasonable" (p. 801). Bandura (2006) reminded researchers of the importance of both discriminative and predictive validity. Bandura noted, "construct validation is a process of hypotheses testing" (p. 319). The process of construct validation remains ongoing for all instruments.

Ethical Procedures

Participants agree to share their time, thoughts, and ideas and should be treated ethically. Tin this section, I discuss the precautions taken to ensure the least burden and utmost safety and privacy of all participants. All access to participants and treatments of human subjects followed Walden University's IRB policy and procedures.

Protection of Participants

There was low risk associated with participating in this study. There was no excess psychological, relationship, legal, or economic risk associated with participating in this study. Anonymous data collection protected the participants from loss of privacy. To minimize potential conflict of interest and undue coercion of participants, I removed my home school from the sample population.

The research risks and burdens were reasonable because the total questionnaire length was 54 questions. Between 10 and 15 minutes was estimated as the total time for

answering both questionnaires. The time commitment is a reasonable burden given the ready accessibility of SurveyMonkey's (2016) online format as well as standard teacher willingness to help advance the learning venture of a teacher colleague from the same district.

Access to Participants

I gained access to the participants through the cooperation of the RSD and was provided access to email information of instructional staff. According to the Research Ethics and Compliance sample documents, a Letter of Cooperation is not required from the research site. However, the IRB required a Letter of Cooperation which was then obtained. Participant recruitment was through noncoercive and low-pressure communications such as email invitations which allow potential participants to opt out without adverse consequence. RSD required no formal paperwork for access to instructional staff email and awarded the approval of the district superintendent J. Smith (a pseudonym, personal communication, March 24, 2016).

Respect for Persons

The current study was approved by Walden University's IRB (1-16-16-0119766). The study I conducted is briefly described in the participation invitation email found in Appendix A. No "thank you" gift or compensation was provided. Anonymous data collection maintained participant anonymity. The consent form disclosed my identity and specified that the participant should print it out. The consent form protected the participant's legal rights and explained how to contact the university's Research Participant Advocate (phone number 1-612-312-1210, or irb@waldenu.edu).

In this study, no vulnerable individuals were sought out as participants, but vulnerable adults may have been included without my knowledge. It was impossible for me to know the exact mental, emotional, economic status of all the teachers within the RSD. It was equally impossible for me to know if any teachers were pregnant, less than fluent in English, or in crisis while being employed by RSD. These groups were not targeted, but the personal nature of these vulnerable groups indicated an inability for them to have excluded them from the sample. No participants were required to participate, and there was no penalty for early withdrawal or nonresponse. No participants who met the criteria of the population were excluded except those teachers within the researcher's home school as discussed later in this section. The research procedures did not reveal criminal activity of any kind. It was unlikely, but if the online survey had created an acute psychological state, the participants had my contact information and Walden University. I would have helped resolve their emergency. An Adverse Event Reporting Form would have been filed in the event of such an occurrence.

Data Collection

At the time of data collection, I was adequately qualified and supervised in all data collection procedures. Data collected were stored electronically and in hard copies in my home office. Electronic data were stored on my password-protected computer as well as on a password protected external hard drive device. A locked cabinet in the home office housed the hard copies. These data were only available to me, my committee members, and the Walden Office of Research Integrity and Compliance. Transfer of data

as part of the analysis process occurred through stringent security means, maintaining the anonymity of the participant responses.

SurveyMonkey provided accurate data collection. SurveyMonkey presented a more accurate collection of data than a paper and pencil questionnaire with me tallying the results.

The U.S. Department of Education provided best practices for maintaining data privacy as well as data destruction following the lifecycle of the data collected (Privacy Technical Assistance Center, PTAC, 2015b). PTAC recommends, and Walden requires, maintaining the data for five years, and then undergoing data destruction. The data and personally identifying information from the current study is not considered extremely sensitive and could be destroyed through the clearing of the data. Clearing data entails either rewriting the existing data with a new value or returning the device to the factory state. Either option would render the data destroyed (PTAC, 2015a).

Dissemination of Findings

All results were shared with the school superintendent, the professional development staff, and participants following completion of the study. A brief email summarization of findings presented the results. Findings were also shared through an oral presentation with interested parties at the researcher's home school during a teacher work day.

Summary

In conclusion, I used a nonexperimental survey design to gather data related to the facets of mindfulness and teachers' sense of self-efficacy. I computed a Pearson product-

moment correlation coefficient to analyze the survey data collected. I protected participants through anonymity of responses and respect for persons. I conclude Chapter 4 with specific results of the analysis.

Chapter 4: Results

Introduction

The purpose of this quantitative study was to explore the relationship between pre-K to Grade 12 teachers' mindfulness and their perceived self-efficacy in RSD. In this chapter, I review the research questions and hypotheses, describe the data collection, and provide results of the analysis. The Data Collection section provides information on the time frame, discrepancies from the plan, baseline descriptive and demographic characteristics of the sample, and representativeness of the sample to the population. Results are discussed in detail, including descriptive statistics, statistical assumptions, and statistical analysis findings. I conclude Chapter 4 with a brief answer to the research questions, leading to the conclusions and recommendations in Chapter 5.

Research Questions and Hypotheses

The research questions and hypotheses were as follows:

RQ1: What is the relationship between pre-K to Grade 12 teachers' mindfulness scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$1: There is no statistically significant relationship between pre-K to Grade 12 teachers' FFMQ and TSES scores.

H_a1: There is a statistically significant relationship between pre-K to Grade 12 teachers' FFMQ and TSES scores.

RQ2: What is the relationship between pre-K to Grade 12 teachers' observing scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$2: There is no statistically significant relationship between pre-K to Grade 12 teachers' observing FFMQ and TSES scores.

H_a2: There is a statistically significant relationship between pre-K to Grade 12 teachers' observing FFMQ and TSES scores.

RQ3: What is the relationship between pre-K to Grade 12 teachers' describing scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$3: There is no statistically significant relationship between pre-K to Grade 12 teachers' describing FFMQ and TSES scores.

H_a3: There is a statistically significant relationship between pre-K to Grade 12 teachers' describing FFMQ and TSES scores.

RQ4: What is the relationship between pre-K to Grade 12 teachers' acting with awareness scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$4: There is no statistically significant relationship between pre-K to Grade 12 teachers' acting with awareness FFMQ and TSES scores.

H_a4: There is a statistically significant relationship between pre-K to Grade 12 teachers' acting with awareness FFMQ and TSES scores.

RQ5: What is the relationship between pre-K to Grade 12 teachers' nonjudging of inner experience scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

$H_0$5: There is no statistically significant relationship between pre-K to Grade 12 teachers' nonjudging of inner experience FFMQ and TSES scores.

H_a5: There is a statistically significant relationship between pre-K to Grade 12 teachers' nonjudging of inner experience FFMQ and TSES scores.

RQ6: What is the relationship between pre-K to Grade 12 teachers' nonreactivity to inner experience scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD?

H_06: There is no statistically significant relationship between pre-K to Grade 12 teachers' nonreactivity to inner experience FFMQ and TSES scores.

H_a6: There is a statistically significant relationship between pre-K to Grade 12 teachers' nonreactivity to inner experience FFMQ and TSES scores.

Data Collection

The data collection started on December 5, 2016 and ended on January 9, 2017. The December 5, 2016 email invitation (see Appendix A) generated 60 respondents. I sent a second request 1 week later, which generated an additional 31 respondents. I continued to send weekly reminders to achieve the minimum responses needed. Many participants responded to the final reminder, resulting in 130 usable responses, more than the minimum required. The response rate was calculated by the number of questionnaire responders per number of questionnaires sent to a random sample. One participant requested to be withdrawn from the email reminders to complete the questionnaire, making the sample $n = 329$. In this case, the actual response rate was 40%, which is satisfactory in educational survey research.

Discrepancies

Discrepancies from the plan in Chapter 3 occurred in relation to access to participants and data collection. Access to and recruitment of participants required a longer time than initially anticipated. The plan indicated that I would gain access to the participants through the cooperation of the RSD. The district was able to provide me with school rosters of all employees ($N = 586$), including name and school of employment. I obtained email addresses by entering employee names into the group contact list, and then I saved the compiled email addresses as an Excel spreadsheet. None of the 330 randomly selected participant emails sent were returned due to an incorrect email address. In retrospect, I should have sent questionnaires to all teachers in RSD (excluding my school). There was no need for a random sample in a group of 586.

The data collection plan was to send one invitation, with a second request 1 week later. The first invitation and reminder generated 60 complete responses. The low initial response rate to the first email invitation could have been due to the busy holiday time that begins in December in classrooms. Schools and teachers are traditionally closely tied to holiday calendars, and the RSD winter break took place from December 16 to January 2, 2017. An email reminder was sent to get additional responses from both the nonrespondents and the partial respondents during winter break, with no responses. The lack of response over the winter break was not surprising, as it is not uncommon for teachers to avoid school-related email during breaks. An email reminder I sent on January 2, 2017, after school was back in session, generated 22 more complete questionnaires, bringing the total to 104 completed responses. The minimum number of 110 responses

needed for analysis had not yet been met. A final reminder to both partial responders and nonresponders generated the needed respondents, with a total of 130 completed responses. It would have been best to hold the questionnaires until after winter break, likely assuring adequate responses in a shorter time frame.

Results

Descriptive Statistics

I examined the demographic characteristics of gender, grade level of most interaction, and years of experience. Baseline data indicated that the sample consisted of 19% male and 81% female respondents, roughly consistent with National Center for Education Statistics (NCES, n.d. b) data showing that, in 2011-2012, 76% of public teachers were female (nationally). The predominance of women in the teaching profession, in general, is reflected by the sample (81% of respondents). Investigation of the grade level of most interaction revealed a reasonably even distribution except for a low number of pre-K respondents, which can be explained by the small number of pre-K programs in RSD (four total). The largest group of teachers in a grade band was 10th-grade teachers at 11%. All other grade levels were represented in a range from 4% to 9%, consistent with NCES (n.d. a) information. Respondents' years of experience were similar to NCES (n.d. b) data, with roughly 40% of teachers in the 0-10 years of experience category. Overall, this study is somewhat generalizable to the sample of teachers working for RSD based on similarities to national statistics for gender, grade level taught, and years of experience.

Mean and standard deviations for each variable are found in Table 1. Respondents' mean on the TSES was 87.47 from a range between 53 and 108. Respondents' mean on the overall FFMQ was 136.17 from a range between 90 and 183. This scoring was expected, given that different respondents scored themselves differently in each of the facets based on their personal perception of these characteristics.

Table 1

Mean and Standard Deviation for Each Variable

Variables	Range of scores	Mean	Standard deviation
Teachers' Sense of Self-Efficacy	53-108	87.47	10.92
FFMQ Total Score	90-183	136.17	15.13
Facet 1: Observing	14-39	27.37	4.51
Facet 2: Describing	14-40	30.06	5.14
Facet 3: Acting with awareness	10-40	27.48	4.85
Facet 4: Nonjudging of inner experience	12-40	27.54	5.81
Facet 5: Nonreactivity to inner experience	14-31	23.70	3.83

Note. $N = 130$.

Statistical Assumptions

Evaluation of assumptions appropriate for correlation included the type of variables, normality, linearity, outliers, and homoscedasticity.

Normality

Normality was examined in several ways. The Kolmogorov-Smirnov statistic Sig. = .200* (a nonsignificant result) indicated normality (see Table 3 D3). In addition, the normal Q-Q plot was visually inspected and presented a reasonably straight line, also suggesting normality (see Figure D1). Negative skewness values of TSES (-.360) indicated a clustering of scores at the high end of a graph, meaning a lack of symmetry in

the distribution of scores, which can be seen in the histogram in Figure D2. For FFMQ, there was a slight positive skewness (.062). Kurtosis values for TSES (-.018) indicated a relatively flat distribution, while FFMQ kurtosis (.357) was positive, indicating a slight peak in the distribution (see Table 3 D1). Overall, despite some negative skewness, the data appear to be normally distributed based on the Kolmogorov-Smirnov statistic and the normal Q-Q plot.

Linearity and Outliers

Visual inspection of the scatterplot's shape determined that a straight line could be drawn through it assuming a linear relationship (see Figure 1). The line would go from left to right in an upward direction, indicating a positive relationship. In this scatterplot, the data appear to have a positive correlation of small strength.

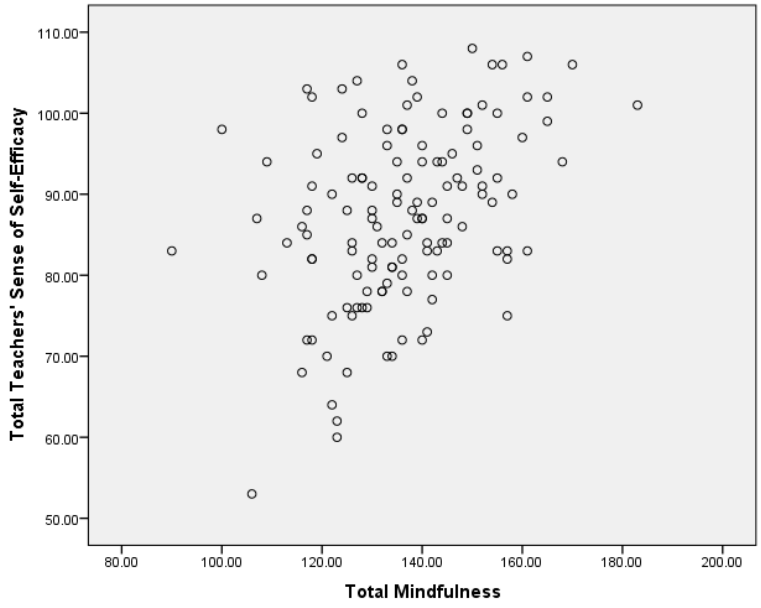

Figure 1. Mindfulness scatterplot.

Visual inspection of Figure 2 revealed an outlier, indicating a need for further investigation. The boxplot identified ID Number 106 as an outlier, but not an extreme point (see Figure 2). I examined ID Number 106 and found it to be a genuine score with no errors. Examination of mean and trimmed mean was next to look for the effect of ID Number 106. Inspection showed the mean (87.47) and 5% trimmed mean (87.78) comparison to be very similar (see Table 4 D2), indicating the unlikelihood that ID Number 106 affected mean scores. Given this information, I retained ID 106 in the data file.

Figure 2. Boxplot.

Homoscedasticity

A scatterplot was used to determine if the assumption of homoscedasticity had been violated (see Figure 1). Visual examination of the scatterplot for a roughly cigar shape revealed no significant increase or decrease. The scatterplot demonstrated a slight

widening at the top but a roughly consistent shape from the bottom to the top. The assumption of homoscedasticity was not violated.

Statistical Analysis

A Pearson product-moment correlation coefficient was computed to assess the relationship between the overall score on the FFMQ and the score on the TSES. Further Pearson product-moment correlation coefficients were computed to determine the relationship between each facet score on the FFMQ and the score on the TSES.

There was a medium positive correlation between overall FFMQ scores and TSES scores $r = .394$, $n = 130$, $p = .000$, with higher levels of perceived mindfulness associated with higher levels of perceived self-efficacy (see Table 2). Overall mindfulness helped to explain 15% of the variance in respondents' scores on the perceived TSES scale. This small overlap means that 85% of the variance to teacher efficacy was affected by some unexamined variable. In further analysis, I looked at each individual facet of mindfulness.

Table 2

Pearson Product-Moment Correlation of FFMQ Scores and TSES Score

Variables	*r*	95% CI	R^2	*p*
Overall FFMQ	.394**	[.230, .541]	.155	.000
Facet 1: Observing	.092	[-.061, .241]	.008	.295
Facet 2: Describing	.235**	[.076, .380]	.055	.007
Facet 3: Acting with awareness	.267**	[.116, .404]	.071	.002
Facet 4: Nonjudging of inner experience	.319**	[.166, .473]	.101	.000
Facet 5: Nonreactivity to inner experience	.326**	[.147, .493]	.106	.000

Note. ($N = 130$, $p < .05$).
**. Correlation is significant at the .01 level (two-tailed).

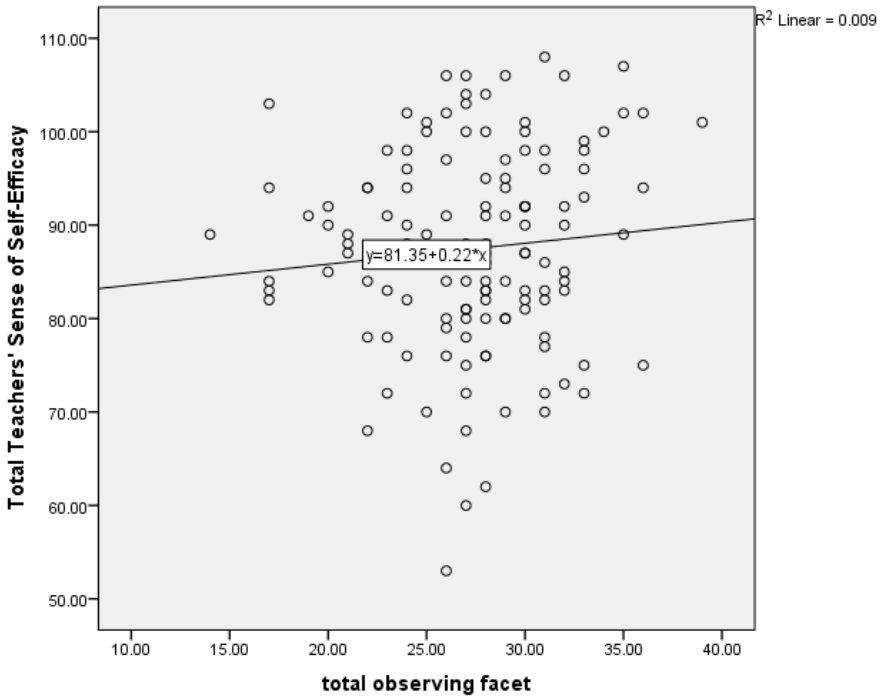

Figure 3. Scatterplot Facet 1: Observing.

The data show an insignificant positive correlation between Facet 1: Observing scores and TSES scores $r = .092$, $n = 130$, $p = .295$. Literature revealed differences between the five facets of mindfulness in meditating and nonmeditating groups, especially the observing facet. Baer et al. (2006) noted, "it is possible that the observe facet is particularly sensitive to changes with meditation experience" (p. 42). Similarly, in a subsequent study, Baer et al. (2008) found higher scores on the observing facet in meditators compared to nonmeditators. It is possible that something similar was indicated in this study. One explanation for no significant relationship being found between Facet 1: Observing scores and TSES scores could be that RSD teachers were a group of nonmeditators. The scatterplot and fit line provided the visual demonstration of the insignificant correlation, as seen in Figure 3. It is not possible to verify that RSD teachers

were not meditators, however, in that the participants were not asked about their experience with meditation.

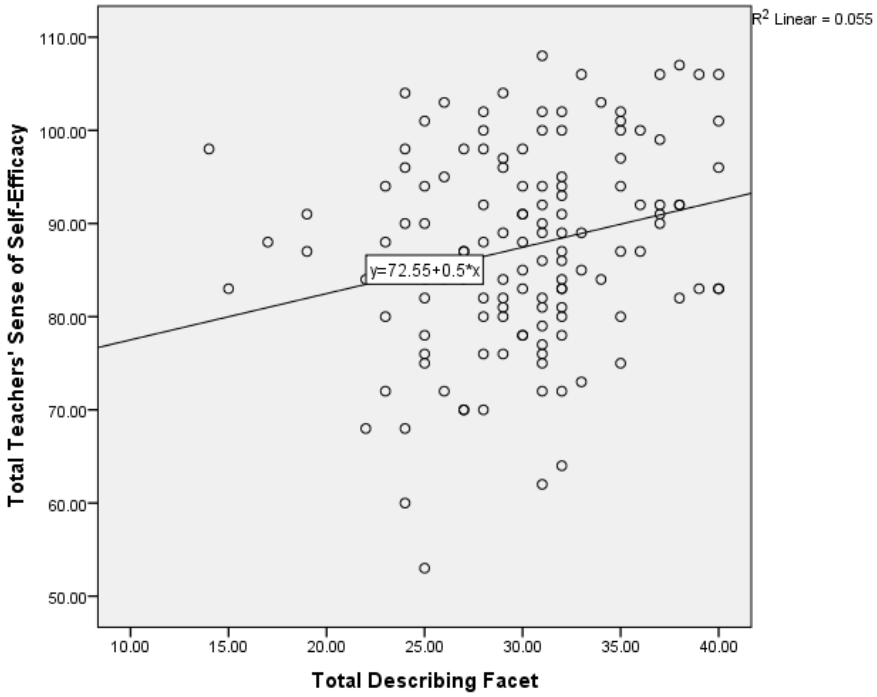

Figure 4. Scatterplot Facet 2: Describing.

There was a small positive correlation between Facet 2: Describing scores and TSES scores $r = .235$, $n = 130$, $p = .007$. Facet 2: Describing helped to explain five percent of the variance in respondents' scores on the perceived TSES scale as seen in the scatterplot in Figure 5. In this analysis, describing only accounted for 5% of the overlap of teacher efficacy, leaving 95% of efficacy scores unexplained.

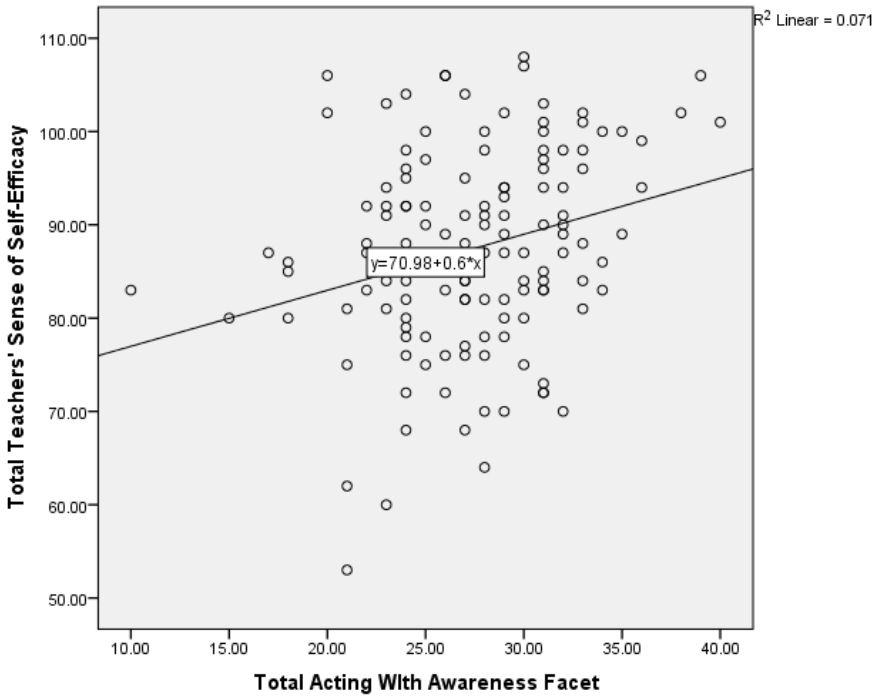

Figure 5. Scatterplot Facet 3: Acting with awareness.

There was a small positive correlation between Facet 3: Acting with awareness scores and TSES scores $r = .267$, $n = 130$, $p = .002$. Facet 3: Acting with awareness helped to explain seven percent of the overlap in respondents' scores on the perceived TSES scale as seen in the scatterplot in Figure 5, leaving 93% of teacher efficacy scores unexplained.

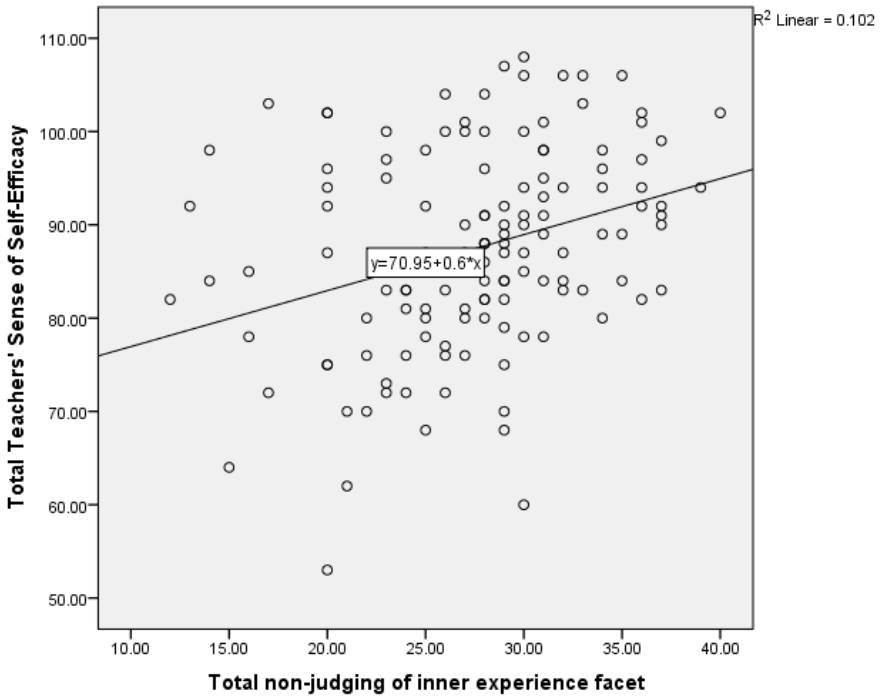

Figure 6. Scatterplot Facet 4: Nonjudging of inner experience.

There was a positive correlation between Facet 4: Nonjudging of inner experience scores and TSES scores $r = .319$, $n = 130$, $p = .000$. Facet 4: Nonjudging of inner experience helped to explain 10% of the variance in respondents' scores on the perceived TSES scale as seen in the scatterplot in Figure 6, leaving 90% of teacher efficacy scores unexplained.

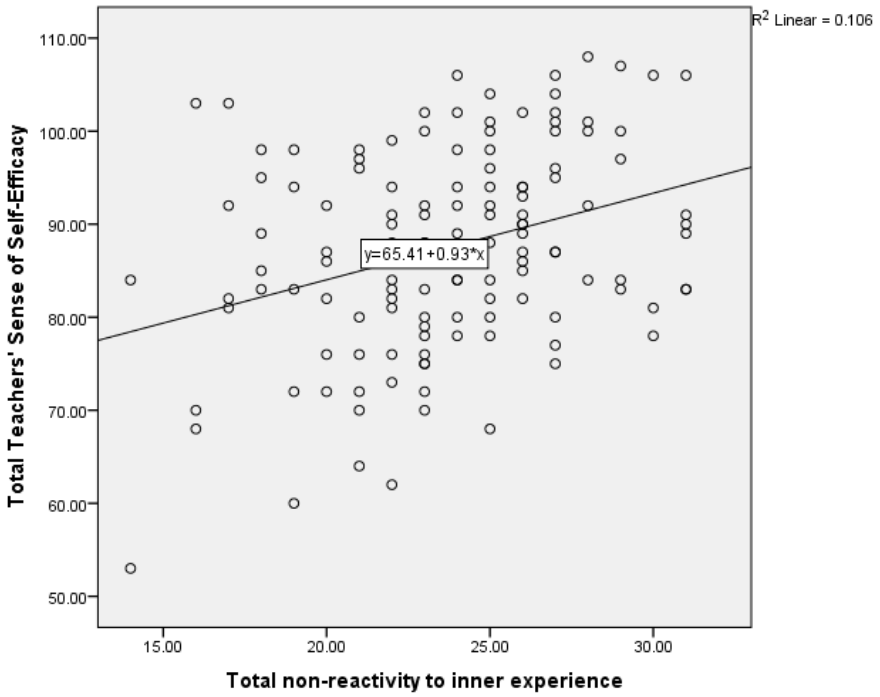

Figure 7. Scatterplot Facet 5: Nonreactivity to inner experience.

There was a positive correlation between Facet 5: Nonreactivity to inner experience scores and TSES scores $r = .326$, $n = 130$, $p = .000$. Facet 5: Nonreactivity to inner experience helped to explain 10% of the variance in respondents' scores on the perceived TSES scale as seen in the scatterplot in Figure 7, leaving 90% of efficacy scores unexplained.

Confidence Intervals

Table 2 presents confidence intervals. Confidence intervals show Facet 1: Observing crossing zero, thus failing to reject the null hypothesis. Examination of all variables noted Facet 2: Describing, Facet 3: Acting with Awareness, Facet 4: Nonjudging of inner experience, and Facet 5: Nonreactivity to inner experience did not

cross zero. Therefore, the null hypotheses were rejected for Facet 2: Describing, Facet 3: Acting with Awareness, Facet 4: Nonjudging, and Facet 5: Nonreactivity.

Effect Sizes

Effect size is a statistical way of quantifying the difference between two groups which can help in interpretation of results (Pallant, 2007). Table 2 shows the strength of the correlation. There was a correlation between overall mindfulness and teacher efficacy, suggesting a moderate relationship between mindfulness and efficacy. Each of the five facets correlated to teacher efficacy differently. The data indicated observing to be slightly related to efficacy. Describing and acting with awareness data suggested a small relationship to teacher efficacy, while nonjudging and nonreactivity data suggested medium relationships to teacher efficacy.

Summary

Pearson product-moment correlation coefficient was computed to determine the strength of the relationship between one or more of the facets of mindfulness scores on the FFMQ and self-efficacy scores on the TSES and the results are as follow:

RQ1: What is the relationship between pre-K to Grade 12 teachers' mindfulness scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD? A significant relationship was found between overall mindfulness scores on the FFMQ and self-efficacy scores on the TSES at $p = .000$ (see Table 2). $H_0 1$: *There is no statistically significant relationship between pre-K to Grade 12 teachers' FFMQ and TSES scores* was rejected.

RQ2: What is the relationship between pre-K to Grade 12 teachers' observing scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD? An insignificant relationship was found between Facet 1: Observing scores on the FFMQ and self-efficacy scores on the TSES at $p = .295$ (see Table 2). The analysis failed to reject $H_0$2: *There is no statistically significant relationship between pre-K to Grade 12 teachers' observing FFMQ and TSES scores*.

RQ3: What is the relationship between pre-K to Grade 12 teachers' describing scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD? A significant relationship was found between Facet 2: Describing scores on the FFMQ and self-efficacy scores on the TSES at $p = .007$ (see Table 2). $H_0$3: *There is no statistically significant relationship between pre-K to Grade 12 teachers' describing FFMQ and TSES scores* was rejected.

RQ4: What is the relationship between pre-K to Grade 12 teachers' acting with awareness scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD? A significant relationship was found between Facet 4: Acting with Awareness scores on the FFMQ and self-efficacy scores on the TSES at $p = .002$ (see Table 2). $H_0$4: *There is no statistically significant relationship between pre-K to Grade 12 teachers' acting with awareness FFMQ and TSES scores* was rejected.

RQ5: What is the relationship between pre-K to Grade 12 teachers' nonjudging of inner experience scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD? A significant relationship was found between Facet 5: Nonjudging of inner experience scores on the FFMQ and self-efficacy scores on the TSES at $p = .007$

(see Table 2). $H_0$5: *There is no statistically significant relationship between pre-K to Grade 12 teachers' nonjudging of inner experience FFMQ and TSES scores* was rejected.

RQ6: What is the relationship between pre-K to Grade 12 teachers' nonreactivity to inner experience scores on the FFMQ and their self-efficacy scores on the TSES instrument at RSD? A significant relationship was found between Facet 6: Nonreactivity to inner experience scores on the FFMQ and self-efficacy scores on the TSES at $p = .000$ (see Table 2). $H_0$6: *There is no statistically significant relationship between pre-K to Grade 12 teachers' nonreactivity to inner experience FFMQ and TSES scores* was rejected.

In Chapter 5, I discuss the findings, limitations, and recommendations for further research, along with the possibility of positive social change.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

Teachers face many challenges within the context of their classrooms and schools during a single day, which can lead to feelings of stress. Content and pedagogical challenges are anticipated and often addressed through preservice and ongoing teacher training. However, countless other challenges occur in schools that affect teachers. These challenges include families in crisis, student behavioral concerns, and students coming to school without adequate preparation for learning. New legislation is an ongoing challenge, along with learning to work collaboratively with other teachers in teams and even procuring school funding, not to mention the list of personal issues that all employees bring with them to their professional work. The accumulation of these challenges and stress takes its toll, often affecting teachers' sense of self-efficacy within their classrooms.

In this study, I drew upon Bandura's (1977b) social learning theory, specifically examining teachers' sense of self-efficacy. Teachers' feelings of inefficacy begin to affect all aspects of teaching, including classroom climate, classroom management, student engagement, content, and pedagogy, to name a few. Current literature describes how mindfulness can fit into individuals' daily lives, possibly affecting their sense of self-efficacy. Mindfulness is an ideal choice for teachers combatting challenges as it works efficiently within the context of their daily activities, no matter the activity.

I used Shapiro et al.'s (2006) mechanism of mindfulness theory, which includes intention, attention, and attitude as a model of mindfulness. The literature showed links

between mindfulness and stress, but only two studies were found that indicated a relationship between mindfulness and self-efficacy (Flook et al., 2013; Jennings et al., 2013). I was interested in determining if relationships existed not only between mindfulness and self-efficacy, but also between any of the five facets of mindfulness (i.e., Facet 1: Observing, Facet 2: Describing, Facet 3: Acting with awareness, Facet 4: Nonjudging of inner experience, and Facet 5: Nonreactivity to inner experience) and teachers' sense of self-efficacy. First, it was possible that no relationship existed between mindfulness and self-efficacy for the teachers at RSD. Next, it was possible that some of the five facets of mindfulness had a relationship to self-efficacy while others did not. A relationship between any of the five facets and self-efficacy could lead to changes in teacher training. Consequently, training for teachers could focus on the facets that had the most effect on self-efficacy, potentially stream-lining the process. Conversely, it was possible that all five facets contributed equally to self-efficacy. In that case, mindfulness training could be incorporated wholly, not split into facets. Literature related to the relationship between the FFMQ scores and TSES score remained elusive, laying the basis for the current study, and potentially filling this gap in the literature.

In this study, I examined teachers' perception of their level of mindfulness measured by FFMQ scores and their sense of self-efficacy measured by TSES scores. First computed was a Pearson product-moment correlation coefficient between overall mindfulness scores on the FFMQ and teachers' self-efficacy scores on the TSES. Then, Pearson product-moment correlation coefficients were computed to determine if there was a relationship between one or more of the FFMQ scores and TSES score. The

independent variables included overall mindfulness FFMQ scores, the five facets of mindfulness scores: (a) observing, (b) describing, (c) acting with awareness, (d) nonjudging of inner experience, and (e) nonreactivity to inner experience. The dependent variable was self-efficacy scores on TSES. An online questionnaire measured teacher participant perception of mindfulness and sense of self-efficacy.

A Pearson product-moment correlation coefficient was computed for each of the FFMQ subscales. The only nonsignificant relationship was between Facet 1: Observing scores and self-efficacy scores. This result was not altogether surprising, given the literature with similar results of lower levels of the observing facet for nonmeditators (Baer et al., 2006, 2008). It might be assumed that RSD teachers are not meditators. A significant relationship was determined between participant scores for self-efficacy and scores on Facet 2: Describing, Facet 3: Acting with awareness, Facet 4: Nonjudging of inner experience, and Facet 5: Nonreactivity to inner experience.

Interpretation of the Findings

I interpreted these findings in two ways, first through the lens of the research questions and then through the lens of the theories. For the initial research question, I investigated the relationship between mindfulness (all of the facets combined) and self-efficacy. The results confirm previous research indicating that a relationship exists between mindfulness in general and self-efficacy (Flook et al., 2013; Jennings et al., 2013). I took a step further and examined the relationship between each of the five facets of mindfulness and self-efficacy.

For the next research question, I examined the relationship between observing and self-efficacy. The results indicated no relationship between Facet 1: Observing and teachers' sense of self-efficacy and extended previous research. The observing facet has been recognized as functioning differently than the other facets (Lilja, Lundh, Josefsson, & Falkenström, 2013; Neale-Lorello & Haaga, 2015; Williams, Dalgleish, Karl, & Kuyken, 2014) and is unmistakably higher in meditators (Baer et al., 2006; Baer et al., 2008). Previous literature finding no significant relationship between observing and teachers' sense of self-efficacy was confirmed.

I next analyzed the relationship between describing and self-efficacy. The results indicated a relationship between Facet 2: Describing scores and teachers' sense of self-efficacy scores and extended previous research surrounding the describing facet. The describing facet has been inversely associated with anxious arousal (Desrosiers, Klemanski, & Nolen-Hoeksema, 2013) and increased gray matter volume (Murakami et al., 2012). The result adds to the literature specific to Facet 2.

For the next research question, I examined the relationship between acting with awareness and self-efficacy. The results indicated a relationship between Facet 3: Acting with awareness and teachers' sense of self-efficacy and added to previous research surrounding the acting with awareness facet. The acting with awareness facet has been identified along with nonjudgement to assist in decreasing blood pressure (Tomfohr, Pung, Mills, & Edwards, 2015) and to help with symptoms of depression and anxiety (Raphiphatthana, Jose, & Kielpikowski, 2016). The result adds to the literature specific to Facet 3.

I next examined the relationship between nonjudging of inner experience and self-efficacy. The results showed a relationship between Facet 4: Nonjudging of inner experience and teachers' sense of self-efficacy and added to previous research on the nonjudging facet. Increasing nonjudgment benefits the symptoms of depression and anxiety (Desrosiers, Vine, Curtiss, & Klemanski, 2014) and decreases blood pressure (Tomfohr et al., 2015) as well as being beneficial to posttraumatic stress disorder symptoms (Wahbeh, Lu, & Oken, 2011). Facet 4: Nonjudging of inner experience can be linked directly to efficacy. The three axioms of mindfulness as described by Shapiro et al. (2006)—intention, attention, and attitude—are interwoven with an overall nonjudging and nonreactivity expectation. Shapiro et al. included self-regulation in reperceiving, including Bandura's theories.

Finally, I investigated the relationship between nonreactivity to inner experience and self-efficacy. The results showed a significant relationship between Facet 5: Nonreactivity to inner experience and teachers' sense of self-efficacy and extended previous research including the nonreactivity facet. Deficits of the nonreactivity facet were related to the presence of a substance abuse disorder (Levin, Dalrymple, & Zimmerman, 2014).

This study's results did not show that all of the facets worked together equally to form a relationship to teachers' sense of self-efficacy. Many of the studies examined in the literature review show similar occurrences of one or a combination of facets relating to their respective dependent variables. Further studies could be conducted to explore why this happens.

The findings in this study are important in several ways, both because of what they tell about observing, describing, acting with awareness, nonjudging, nonreactivity, and self-efficacy, and because of what they do not tell. The findings extend knowledge about each facet of mindfulness and its relationship or lack of relationship to self-efficacy.

The relationships between the FFMQ scores and TSES score are interpreted through the lens of social learning theory (Bandura, 1977b). In connection with this framework, one's sense of self-efficacy can be influenced by performance accomplishments: vicarious experience, verbal persuasion, and emotional arousal, sometimes called *physiological response* (Bandura, 1977b). As noted in the literature review in Chapter 2, Bandura described a high level of emotional arousal as debilitating (1977b) one's sense of self-efficacy; however, reducing arousal by reducing stress may increase this efficacy expectation. Mindfulness-based stress reduction (MBSR; Kabat-Zinn, 2013) training has been found to reduce stress (Grossman et al., 2004; Khoury et al., 2015). It is reasonable to conclude that increased mindfulness could affect the physiological response, potentially leading to a relationship between mindfulness and self-efficacy.

Links also exist between the findings of the current study and Shapiro et al.'s (2006) mechanism of mindfulness. A significant relationship was found between overall mindfulness; Facet 2: Describing; Facet 3: Acting with awareness; Facet 4: Nonjudging of inner experience; Facet 5: Nonreactivity to inner experience; and teachers' sense of self-efficacy. As discussed, Shapiro et al.'s mechanism of mindfulness coalesces to

establish reperceiving. As noted in Chapter 2, Shapiro et al. described reperceiving as "the capacity to dispassionately observe or witness the contents of one's consciousness" (p. 381). Facet 2: Describing, Facet 3: Acting with awareness, Facet 4: Nonjudging of inner experience, and Facet 5: Nonreactivity to inner experience could all be envisaged to contribute to reperceiving. Indeed, Facet 1: Observing could be the most important to the act of reperceiving yet will likely only be noted when examining meditators.

Reperceiving and Facet 4: Nonjudging of inner experience and Facet 5: Nonreactivity could share the same foundational underpinnings, in that dispassionately witnessing one's consciousness and maintaining a nonjudging and nonreactive attitude toward thoughts and feelings are fundamentally equivalent. The finding of a relationship between describing, acting with awareness, nonjudging and nonreactivity to inner experience (and lack of a significant relationship in observing) and teachers' sense of self-efficacy extends the knowledge about the five facets of mindfulness.

Limitations of the Study

Several limitations were present in this nonexperimental study. First, survey design is limiting for a number of reasons. The questionnaires were emailed to participants with no control over who completed the questionnaire. Survey design is fraught with low response rates. This study was able to attain a response rate of 40% with weekly reminders over the course of 5 weeks.

A possible limitation was not including questions about meditation experience for the participants. The finding of no significant relationship between Facet 1: Observing and teachers' sense of self-efficacy could be related to meditation experience of the

participants. More information about each participant could have provided clarity to the reasons for this finding.

Another possible limitation could be seen in the data not examined. For instance, self-regulation and exposure were noted by Shapiro et al. (2006) as aspects of mindfulness. The factors of self-regulation and exposure were not isolated and examined in the current study, but it is possible that a relationship could exist between these factors and teachers' sense of self-efficacy. In addition, RSD teachers' levels of stress were not examined. It is possible that a relationship could be present between RSD teachers' levels of stress and their efficacy, as was noted in the literature (Dicke et al., 2014; Gonzalez et al., 2017; Skaalvik & Skaalvik, 2016; Yu et al., 2015). Additional limitations to the study and its external validation exist. Participants were asked demographic questions, including questions pertaining to gender, grade level of most interaction, and years of experience, which all have an effect on teachers' sense of self-efficacy. Gender has been found to have an effect on self-efficacy (Klassen & Chiu, 2010; Tran, 2015). In the current study, 81% of the respondents were female, which may have affected the self-efficacy results. Years of experience has been found to have an effect on self-efficacy (Aziz & Quraishi, 2017; Kyung & Eun, 2018). It is possible that these factors had a similar influence on the current study results.

Recommendations

Design Differences

Further study may be conducted through experimental design, extending this exploratory study in this population, similar to Meiklejohn et al. (2012). A sample group

representative of the overall population might be selected for pre/post testing of stress, mindfulness, and teachers' sense of self-efficacy. The sample could then be split, with one group of teachers receiving training in mindfulness, and the other group being waitlisted. Both groups of teachers could be matched by gender, grade level taught, and years of experience. In this way, the variations in gender, grade level taught, and years of experience could be minimized. Conducting experimental research would help researchers pinpoint the relationship between the five facets of mindfulness and teachers' sense of self-efficacy. Further refining the relationship between stress, mindfulness, and teachers' sense of self-efficacy provides specificity within the results. Researchers in the discipline gain with each study conducted, furthering the overall field of both mindfulness and self-efficacy.

Another direction for future research might involve an experimental design with six matched groups and one control group, including pre/post testing. Each of the groups could be trained in a slightly different way, focusing on the individual facets of mindfulness. One group could be trained in traditional mindfulness while each of the others received mindfulness training with an instructional and implementation focus on each of the five facets of mindfulness. Following the training, posttests on both mindfulness and teachers' sense of self-efficacy could be conducted. Researchers could potentially identify which aspects of specialized mindfulness instruction have a relationship to teachers' sense of self-efficacy.

A third design could be accomplished through a Solomon four-group design (Campbell & Stanley, 1963). A Solomon four-group design consists of the following:

1. pretest, treatment, posttest
2. pretest, no treatment, posttest
3. treatment, posttest
4. no treatment, posttest

This limits confounding variables and extraneous factors. Researchers could specifically target nonjudging of inner experience mindfulness training to determine possible interactions or relationships.

Population Differences

Future research could include conducting the current study with the addition of including both meditators and nonmeditators in the population. Meditators have been shown to have higher levels of Facet 1: Observing (Baer et al., 2008). An exploration of perceived levels of the five facets of mindfulness and teachers' sense of self-efficacy compared between meditators and nonmeditators may provide additional information surrounding Facet 1: Observing. Detecting a relationship between mindfulness and teachers' sense of self-efficacy that was different for meditators and nonmeditators could bolster the potential for preservice and ongoing professional development training that provides mindfulness practices. Such training could provide the benefit of increasing teachers' sense of self-efficacy.

Future research could include conducting the current study with a population change. Students could be a valuable population to consider. An exploration of perceived levels of facets of mindfulness and the relationship to students' sense of self-efficacy would provide researchers with valuable information. Detecting a possible relationship

between mindfulness and self-efficacy of students could lead to mindfulness training for elementary-age students in school as performed earlier (Napoli, Krech, & Holley, 2005). The potential study could include this training for both students and teachers, given the relationship that exists between mindfulness and teachers' sense of self-efficacy. Both populations could benefit from training while reaping multiple benefits because both populations would benefit from the single time during the school day spent on mindfulness training. Training both students and teachers in mindfulness at the same time becomes a time-saving venture.

Implications

In this section, I provide a discussion of positive social change, other implications for teachers and students, and recommendations for practice. Positive social change begins with an individual and becomes something much more than that individual. Implications and recommendations for practice are interwoven with social change.

Positive Social Change

Teachers (or anyone) who change their actions, and possibly talk about changing their actions, could lead to social change. Individual teachers practicing mindfulness or mindful teaching could be the beginning of such a change, which could lead to positive social change within schools or more broadly within the field of education.

Mindfulness and the facets of describing, acting with awareness, nonjudging, and nonreactivity can help promote teachers' sense of self-efficacy. Facet 1: Observing did not share the significant result, but as discussed, this facet has been shown to increase with meditation practice. Teachers who increase their capacity in all facets of

mindfulness could lead to positive social change. Teachers who include overall mindfulness into their personal practice potentially decrease stress and increase their sense of self-efficacy. Practicing overall mindfulness (including all five facets) could lead to increased self-efficacy (Rupprecht, Paulus, & Walach, 2017; Taylor, 2018), with this outcome being apparent to others. A teacher's model of mindfulness could serve as exemplars to their students, parents, and other teachers as well. Modeling is one of the four sources of efficacy noted by Bandura (1977a), making it a viable option for sharing learning with others. Teachers might share their mindfulness practices with others formally through professional development opportunities or team meetings. Teachers could also share their experiences with mindfulness and reduced stress informally through small group discussions or conversations with other teachers. Students also benefit from the model of mindfulness and have the potential to transfer that learning to their own lives, spreading the benefits to their families, and the world.

Other Implications

Implications for teaching include the viability of teachers decreasing their levels of stress and increasing self-efficacy using mindfulness practices. Implications could be seen through focused professional development provided to both preservice and inservice teachers focused on mindfulness training, aimed at decreasing stress and improving self-efficacy. Given the abundance of research-proven benefits attributed to mindfulness, teachers may willingly choose to attend professional development targeting mindfulness. The benefits of choice are an important factor when approaching new learning for adults; teachers may attend with a willingness to learn that is not present during specified

mandatory training. Teachers are not often given choices of professional development—it is often content focused, sometimes with a punitive tone directly related to lack of student achievement or implementation of district or state level mandates. Mindfulness training would provide the benefit of decreasing stress and increasing efficacy.

Other implications could occur as mindfulness spread within schools. Mindfulness provides many health and well-being benefits, and these benefits could become part of the culture of a school. Many schools operate with nonoptimal and sometimes toxic cultures. The potential for exchanging a nonoptimal culture for one of mindfulness and decreased stress and an increased sense of self-efficacy could benefit teachers, students, families, and schools.

Recommendations for Practice

The practical pieces of this study's findings consist of their applicability to ongoing professional development and preservice training for teachers. Traditionally, teacher training is most often driven by content knowledge or pedagogy (Jennings, 2015). However, teacher education continues to focus on "content and pedagogy, often overlooking the social, emotional, and cognitive demands of teaching" (p. xxiv). The findings of overall mindfulness, describing, acting with awareness, nonjudgment of inner experience, and nonreactivity to inner experience related to teachers' sense of self-efficacy leads to a recommendation of mindfulness training for teachers. Classroom teachers are often reluctant to attend professional training that berates them for lack of student achievement, add on to their already long list of requirements, or instruct them in pedagogy with which they are already familiar. Professional training aimed at providing

teachers with mindfulness training would seem novel to teachers, as well as be seen as adding to their personal health and well-being. Teachers would likely engage in such training with increased motivation and vigor. Teachers would be provided with mindfulness tools that benefit their levels of stress, health and well-being, and efficacy.

Conclusion

Mindfulness is a practice that has been around for a long time, yet about which much remains to be learned, including an agreed upon operational definition. Mindfulness can positively affect health and well-being of individuals, including positive results for teachers (Beshai et al., 2016; Crain et al., 2017; Frank et al., 2015; Gouda et al., 2016; Jennings et al., 2017; Kerr et al., 2017; Roeser et al., 2013; Taylor et al., 2016). This research explored how teachers perceive their level of mindfulness and if there was a relationship to their sense of self-efficacy. Bandura's (1977b) social learning theory was used as a framework for self-efficacy, and Shapiro et al.'s (2006) mechanism of mindfulness provided a model of mindfulness framework within which to work.

A significant relationship was found between overall FFMQ scores and TSES score. The five facets of mindfulness were also examined for a possible relationship to teachers' sense of self-efficacy. A significant relationship was found between overall mindfulness, Facet 2: Describing, Facet 3: Acting with awareness, Facet 4: Nonjudging of inner experience, Facet 5: Nonreactivity to inner experience and teachers' sense of self-efficacy. The explanation for why Facet 1: Observing did not have a significant relationship is related to meditators vs. nonmeditators, with meditators scoring higher on this facet. Based on these results, it appears that no single facet has a more significant

relationship than the others to self-efficacy for RSD teachers. Together, all of the facets combine to create mindfulness which is essential to reperceiving. The possibility also exists that researchers have not deduced every aspect of mindfulness as of yet, and the current findings are only a part of a more comprehensive mindfulness understanding yet to come.

The implications of these positive results could offer positive social change for individual teachers by providing a means of improving their levels of stress and efficacy by practicing mindfulness. Increased efficacy could potentially lead to other teacher benefits.

Other implications of these findings could alter the way preservice and inservice teachers are trained. Preservice programs and inservice professional development programs could begin incorporating mindfulness training. These training could potentially decrease levels of stress and increase teachers' sense of self-efficacy. Teachers might consider attending mindfulness training because of the many health and well-being benefits of mindfulness in addition to the reduced stress and increased efficacy benefits. The findings of this study underscore that mindfulness and all the facets have a place in ongoing professional learning and preservice teacher preparation programs.

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Appendix A: Participation Invitation Letter

Dear Regional School District Educator,

I am Ketra Gardner, a doctoral candidate at Walden University and fellow RSD teacher. I am preparing to conduct my dissertation research, and I need your help.

I have always been interested in classroom management and it turns out classroom management is connected to teachers' sense of their effectiveness. Some current research indicates mindfulness (active, open attention to the present) can impact this sense of self-efficacy. My research will help determine if there is a relationship between mindfulness and a teachers' sense of self-efficacy.

I am asking for your help by completing a brief electronic questionnaire. This simple questionnaire should take 10-12 minutes to complete. All responses will be kept strictly confidential and the results will be used to determine if there is a statistical relationship between mindfulness and teachers' sense of self-efficacy. I will not use your contact information for any other purpose than this questionnaire and a follow up email describing the results of my research. Your participation in this study is voluntary and you are not obligated in any way.

I appreciate your assistance which will help me complete my research in pursuit of my degree. If you have any questions you may call me at XXX-XXX-XXXX or email me at kgardner@RSD.net

Please click the link below for the letter of informed consent for your review.

Sincerely,

Ketra Gardner

Walden University PhD Student in
Leadership, Policy, Change in Education

Appendix B: FFMQ

Five Facet Mindfulness Questionnaire (FFMQ)

Ruth A. Baer, PhD

University of Kentucky

1	2	3	4	5
never or very rarely true	rarely true	sometimes true	often true	very often or always true

____1. When I'm walking, I deliberately notice the sensations of my body moving.

____2. I'm good at finding words to describe my feelings.

____3. I criticize myself for having irrational or inappropriate emotions.

____4. I perceive my feelings and emotions without having to react to them.

____5. When I do things, my mind wanders off and I'm easily distracted.

____6. When I take a shower or bath, I stay alert to the sensations of water on my body.

____7. I can easily put my beliefs, opinions, and expectations into words.

____8. I don't pay attention to what I'm doing because I'm daydreaming, worrying or otherwise distracted.

____9. I watch my feelings without getting lost in them.

____10. I tell myself I shouldn't be feeling the way I'm feeling.

____11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.

____12. It's hard for me to find the words to describe what I'm thinking.

____13. I am easily distracted.

____14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.

____15. I pay attention to sensations, such as the wind in my hair or sun on my face.

____16. I have trouble thinking of the right words to express how I feel about things.

____17. I make judgments about whether my thoughts are good or bad.

____18. I find it difficult to stay focused on what's happening in the present.

____19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.

____20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.

____21. In difficult situations, I can pause without immediately reacting.

____22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.

____23. It seems I am "running on automatic" without much awareness of what I'm doing.

____24. When I have distressing thoughts or images, I feel calm soon after.

____25. I tell myself that I shouldn't be thinking the way I'm thinking.

____26. I notice the smells and aromas of things.

____27. Even when I'm feeling terrible upset, I can find a way to put it into words.

____28. I rush through activities without being really attentive to them.

____29. When I have distressing thought or images I am able just to notice them without reacting.

____30. I think some of my emotions are bad or inappropriate and I shouldn't feel them.

____31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.

____32. My natural tendency is to put my experiences into words.

____33. When I have distressing thoughts or images, I just notice them and let them go.

____34. I do jobs or tasks automatically without being aware of what I'm doing.

____35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.

____36. I pay attention to how my emotions affect my thoughts and behavior.

____37. I can usually describe how I feel at the moment in considerable detail.

____38. I find myself doing things without paying attention.

____39. I disapprove of myself when I have irrational ideas.

Scoring instructions for the FFMQ include reversing the score for specific items marked "R". Change 1 to 5, 2 to 4, 4 to 2, and 5 to 1 (3 stays unchanged). Then sum the scores for each subscale. Subscale scoring is as follows: Observing: 1, 6, 11, 15, 20, 26, 31, 36; Describing: 2, 7, 12R, 16R, 22R, 27, 32, 37; Acting with awareness: 5R, 8R, 13R, 18R, 23R, 28R, 34R, 38R; Nonjudging of inner experience: 3R, 10R, 14R, 17R, 25R, 30R, 35R, 39R; Nonreactivity to inner experience: 4, 9, 19, 21, 24, 29, 33.

Appendix C: Permission Letter

COLLEGE OF EDUCATION AND HUMAN ECOLOGY

ANITA WOOLFOLK HOY, PH.D.

PROFESSOR
PSYCHOLOGICAL STUDIES IN EDUCATION

Dear

You have my permission to use the *Teachers' Sense of Efficacy Scale* in your research. A copy the scoring instructions can be found at:

http://u.osu.edu/hoy.17/research/instruments/

Best wishes in your work,

Anita Woolfolk Hoy

Anita Woolfolk Hoy, Ph.D.
Professor Emeritus

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Appendix D: SPSS Output

Table D1

Descriptive Statistics for FFMQ and TSES

	N	Minimum	Maximum	Mean	Std. deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. error	Statistic	Std. error
Total FFMQ	130	90.00	183.00	136.1769	15.31502	.062	.212	.357	.422
Total TSES	130	53.00	108.00	87.4769	10.92839	-.360	.212	-.018	.422
Total observing facet	130	14.00	39.00	27.3769	4.51400	-.395	.212	.348	.422
Total describing facet	130	14.00	40.00	30.0615	5.17261	-.344	.212	.444	.422
Total acting with awareness facet	130	10.00	40.00	27.4846	4.85165	-.336	.212	.820	.422
Total nonjudging of inner experience facet	130	12.00	40.00	27.5462	5.81513	-.394	.212	-.005	.422
Total nonreactivity to inner experience	130	14.00	31.00	23.7077	3.83061	-.221	.212	-.244	.422
Valid *N* (listwise)	130								

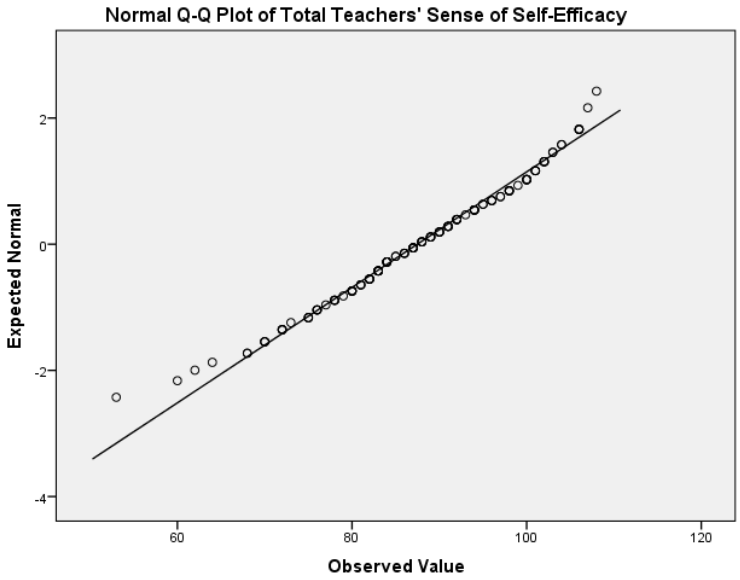

Figure D1. Normal Q-Q plot.

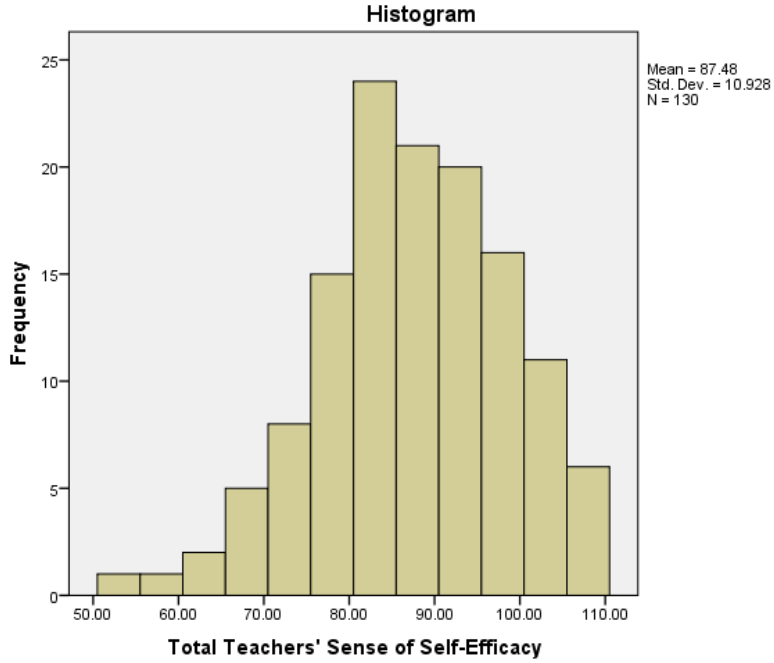

Figure D2. Histogram.

Table D2

TSES Descriptives

			Statistic	Std. error
Total TSES	Mean		87.4769	.95848
	95% confidence interval for mean	Lower bound	85.5805	
		Upper bound	89.3733	
	5% trimmed mean		87.7863	
	Median		87.5000	
	Variance		119.430	
	Std. deviation		10.92839	
	Minimum		53.00	
	Maximum		108.00	
	Range		55.00	
	Interquartile range		15.25	
	Skewness		-.360	.212
	Kurtosis		-.018	.422

Table D3

Test of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	*df*	Sig.	Statistic	*df*	Sig.
Total TSES	.048	130	.200*	.984	130	.127

*This is a lower bound of the true significance.

[a]Lilliefors significance correction.