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The Mindfully Embedded Classroom:

An Investigation of the Mindfulness

Traits, Philosophies, and Practices

of High School Teachers

by

Kathryn Marie Wagner

A dissertation submitted in partial fulfillment
of the requirement for the degree of

Doctor of Education
in
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Abstract

The underlying impact of high school teachers' mindfulness practices and

philosophies in a classroom environment is investigated through a conceptual

framework of self-identity, neuro-semantic language learning, attachment,

interpersonal neurobiology, and social cognitive theories. The purpose of this study is

to determine if trait mindfulness is related to teacher demographics and to triangulate

trait data with classroom observations and teacher interviews. 48 high school teachers

in an urban comprehensive high school completed the Five Facet Mindfulness

Questionnaire (FFMQ) with demographics. Six 'highly mindful' teachers participated

in a semi-structured interview investigating their educational philosophy and

conceptualizations of mindfulness, identity, teacher-student relationships, analyzed

with a phenomenological approach. Classroom observations were conducted in these

six classrooms using an observation protocol for effective communicative

thoughtfulness and triangulated with interview responses. Findings show that

underrepresented minority teachers reported lower scores in the FFMQ facet Non-

judgment of Inner Experience than white teachers. STEAM (Science, Technology,

Engineering, Arts and Mathematics) teachers reported lower scores than humanities

teacher in the Describing facet of the FFMQ. The age of the teacher and number of

years of teaching experience was only correlated with the Observing facet of the

FFMQ. The 'highly mindful' teacher participants fostered respectful authoritative classrooms with the teachers viewing themselves as mentors who are not solely focused on academic outcomes, viewed intelligence as functional, identified that language frames ones' thoughts and names perceptions, and defined mindfulness as a shift in perspective not necessitating formal training. This study adds to the burgeoning literature of mindfulness research, provides insight to the experience and philosophies of teachers who self-report higher levels of mindfulness, and suggests strategies to improve teacher mindfulness with positive social and emotional outcomes for teachers and students alike.

Acknowledgements

I am grateful to Dr. Ellyn Arwood, for facilitating the continued refinement of my thinking in neuroeducation, and Dr. Hillary Merk Gaudio for her invaluable feedback in the preparation for this manuscript. I also wish to express sincere appreciation to my committee chair, Dr. Nicole Ralston, who remained both my critic and cheerleader throughout the entire development of this study and the writing process. I also thank Portland Public Schools for their approval and support of continued educational research in the best interest of effective teacher development and the academic and social-emotional success for all students. Finally, I thank Paul Cook, Tammy O'Neill, and Kevin Taylor for their encouragement and flexibility.

Dedication

      To my parents, Jim Wagner and Karen Wagner Gill, who taught me the value of believing in myself, helping me realize that I can do anything to which I put my mind, and supporting me to be a life-long learner;

      To my sister, Kristen Wagner Jones, who continues to show me how passionate and dedicated someone can be when they truly care;

      To my partner, Adam Ulvi. I could not have made it through this without you. Your undying love and support have kept me healthy, motivated, and sane. You are my rock.

      To my daughter, Bridget West. You are the light of my life. Thank you for being patient while Mommy worked long hours. Your laughter and hugs keep me smiling through difficult and stressful times and I hope that I can continue to be a positive and mindful role model as you grow up to be an amazing woman.

Table of Contents

List of Tables

List of Figures

Figure   Page

CHAPTER 1

Introduction to the Study

Background

Educators are consistently looking for ways to improve student success in

school, career, and life. In an attempt to find strategies to achieve these goals,

researchers have found predictors that may inform best practices in education. One

such predictor of academic success, health, financial stability, and potential for

criminal activity is self-control. Self-control, or the ability to delay gratification,

control impulses, and modulate emotional expressions, has been found to be a stronger

predictor than intelligence and socioeconomic status (Moffitt et al., 2011). In their

longitudinal study of over 1,000 children, Moffitt et al. (2011) found that 95% of

students in the top quintile for self-control achieved their high school diploma

compared with 58% of students in the lowest quintile. In the same study, children in

the lowest quintile of self-control were 2.5 times more likely to experience major

health problems by their 30s, with a strong prediction for substance abuse and

depression (Moffitt et al., 2011). Similarly, Balfanz, Herzog, and Mac Iver (2007)

identified five key early predictors that can predict the likelihood of high school

graduation. In their study of 13,000 United States middle school students, two

indicators were based on academic achievement in math and English, while the other

three were based on self-regulation, or the ability to monitor and regulate one's social

interactions (Patrick, 1997). Academic achievement is directly related to daily attendance in school. Students who receive out-of-school disciplinary action, consequently, attend school fewer days. Students who attend school less than 80% of the time and receive out-of-school disciplinary action for negative behaviors were identified as risk factors for failure to graduate from high school (Balfanz et al., 2007).

According to Aspinwall and Taylor (1997), stressors such as anxiety, depression, poverty, and abuse can be mitigated using self-regulation coping strategies resulting in improved psychological and physical well-being. Students who experience these factors with low self-regulation often demonstrate decreased student attendance in school and increased exclusionary discipline due to negative behaviors. Decreased student attendance also results in lack of instructional time, which may negatively impact student achievement (Goodman, 2012). In addition to these social emotional challenges that some students face, more rigorous achievement standards and high-stakes testing have been adopted, resulting in educators and administrators desperately seeking techniques and strategies to ensure students are at their optimum level of academic success (Jones, Jones, & Hargrove, 2003; Pope, Brown & Miles, 2015; Reyes, Brackett, Rivers, White, & Salovey, 2012).

While self-control and self-regulation have been related in the research to student achievement, the emotional connections made in the classroom that form the classroom climate also play a significant role (Reyes et al., 2012). School administrators are responsible for fostering such climates that are conducive to student learning (Adelman & Taylor, 2006), yet teachers often feel they are lacking in skills

and training to meet their students' mental health needs that allow them to benefit from instruction (McClelland, Morrison, & Holmes, 2000; Reinke, Stormont, Herman, Puri, & Goel, 2011). In response, school-based prevention and intervention programs have been implemented in schools across the United States to promote mental health, increase resilience, and reduce risk behaviors in youth and adolescents (Doll & Lyon, 1998; Payton et al., 2000).

One prevention-based approach is through the explicit teaching of social and emotional learning (SEL) core competencies, which include social awareness, self-management, self-awareness, responsible decision-making, and relationship skills (CASEL, n.d.). Recognizing these competencies as beneficial or even essential in the education of students, research has been conducted to determine what techniques for teaching these core values are most effective for students. One of these techniques is the teacher-student relationship, which also plays a significant role in the student's formation of social competencies, psychological adjustment, sense of connectedness to teachers and school, and may decrease the likelihood of risky, negative, or psychopathological behaviors (Black, Sussman, Johnson, & Milam, 2012; Wang, Brinkworth, & Eccles, 2013). Higher academic achievement is also reflected when the student perceives the teacher to be supportive and confident in the student's academic abilities (Hughes, Wu, Kwok, Villarreal, & Johnson, 2012).

It is clear that social and emotional competencies that can increase self-control, self-regulation, and foster positive emotional connections are important in an educational setting to address issues that are detrimental to students being ready to

learn. One potential method to increase SEL competencies that has been suggested is

the use of mindfulness practices. The term mindfulness is not new, yet only recently

has the field of education begun to see its potential as a valuable approach to

relationships, educational achievement, and development of these social and emotional

competencies, as defined as general feelings of distress and well-being and the quality

of peer relationships (Roeser, Eccles, & Sameroff, 2000).

Mindfulness: Operationalized

Mindfulness, as an operational term in academia, has historically been difficult

to define due to its experiential nature (Shapiro & Carlson, 2009). Jon Kabat-Zinn

(2005) has popularly defined mindfulness as "paying attention in a particular way: on

purpose, in the present moment, and nonjudgmentally" (p. 4). Shapiro and Carlson

(2009) refer to mindfulness as both "mindful awareness," or a deep knowing free from

reflexive conditioning, and "mindful practice," or the systematic practice of

intentional attention in an open and caring way (p. 4). Mindful awareness is further

described as a way of being that is a natural human capacity and a way of relating to

all experiences that come to pass. In contrast, mindful practice is the conscious

development of skills, or the process that takes place through intention, attention, and

attitude.

Bishop et al. (2004) also propose a two-component model of mindfulness,

although different from Shapiro's (2009). Instead, Bishop et al. (2004) define

mindfulness as the self-regulation of attention and awareness on an immediate

experience and the individual's curious, accepting, and open approach to that

experience. Brown and Ryan (2004), however, found acceptance was redundant in mindfulness and collapsed the definition into an "open or receptive attention to and awareness of ongoing events and experience" (p. 245). Baer (2004) developed a Five Facet Mindfulness Questionnaire to assess level of mindfulness. Facets include observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity of inner experience. As this is the tool used to measure levels of mindfulness in this study, mindfulness is defined using Brown and Ryan's (2004) definition, which encompasses these five facets.

Benefits of Mindfulness Interventions

As a clinical intervention, mindfulness meditation practices have been used to reduce pain (Gard et al., 2012; Petter, McGrath, Chambers, & Dick, 2014), decrease anxiety (Dimidjian & Felder, 2015; Khoury et al., 2013), and treat Post-traumatic Stress Disorder (de Stefanaki et al., 2015; Vibe et al., 2013). These mindfulness meditative practices aim to cultivate regulation of attention, body awareness, emotion regulation, and change in perspective on the self (Hölzel et al., 2011). Due to the success of these practices, mindfulness training programs are being developed at a high rate for implementation in schools to address these public health issues.

Self-regulation, emotional coping, and self-esteem (Wisner, Jones, & Gwin, 2010) as well as self-compassion (Edwards, Adams, Waldo, Hadfield, & Biegel, 2014) have been shown to be strengthened by school-based mindfulness interventions. Many of these school-based mindfulness interventions are designed to provide teachers with curriculum in order to facilitate and teach mindfulness and meditation

strategies to students. While these programs' end goals are the same, to bring mindfulness practices to students, their approaches are varied. MindUp (Hawn, 2011), for example, may be purchased as a curriculum and lesson guide for teachers, independent of any formal training in mindfulness. Lessons provided in the curriculum are thematic in nature and include units on topics such as gratitude, stress, or perspective-taking. In each lesson, neuroscience research that is related to the activity topic is integrated to provide students and teachers a neurological basis for its importance and applicability. Other programs, such as Inner Resilience Program (Lantieri, 2008), Mindful Schools (n.d.), and Inward Bound Mindfulness Education (n.d.), provide retreats, professional development, and workshops for parents, teachers and students.

Trait Mindfulness

While these curricula are intended to provide specific strategies and lessons to improve self-regulation, self-esteem, and emotional coping, mindfulness is often approached as a learning outcome. However, it is important to recognize that mindfulness can be a state, trait, or practice. Mindful attention or awareness in a present moment describes the *state* of being. Just as emotional states are transient, awareness in an instant may change. By contrast, dispositional, or *trait*, mindfulness reflects a "greater tendency to abide in mindful states over time" (Brown, Ryan, & Creswell, 2007, p. 218). By focusing this study on dispositional mindfulness, variability in momentary awareness is controlled and results may be further related quantitatively to the body of research in social psychology and neuroscience.

Dispositional, or trait, mindfulness has been found to shield adolescents against risk-taking behaviors (Black, Sussman, Johnson, & Milam, 2012). While the benefits of mindfulness meditation appear indisputable through research on its effects on pain, stress, and psychopathological and psychosocial disorders, research into the possible effects of mindfulness on academic outcomes in school settings is missing from the current literature. This highlights an area for future research. Also lacking, in current mindfulness research, is an investigation of the mindfulness experience of the teacher who is delivering these lessons, which is within the scope of this study.

Teachers bring preconceived ideas, attitudes, and beliefs about mindfulness to the classroom and implement mindfulness intervention programs, such as MindUp (Hawn, 2011) or Mindful Schools (n.d.), with varied degrees of fidelity based on their experiences, confidence, and external constraints (e.g., scheduling, curriculum). Students also bring their own ideas and experiences, or the lack thereof, with mindfulness and the resulting academic and social-emotional effectiveness of these interventions may be affected by these preexisting perceptions, in addition to the interpersonal relationship that is established with the teacher. By looking deeper at the relationship among perceptions, implementation, and application, researchers can begin to understand the academic, social, and cultural implications of classrooms led by teachers who are considered more mindful.

Purpose

Nearly 20% of mindfulness publications involving children or adolescents are theoretical in nature (Zoogman, Goldberg, Hoyt, & Miller, 2014). The bulk of the

empirical research involving mindfulness interventions with children and adolescents has moved away from feasibility studies (Burke, 2010) to focus on the effectiveness of mindfulness intervention programs in clinical settings (Keng, Smoski, & Robins, 2011; Khoury et al., 2013).

Neuroscience has also begun to attempt to understand the association of mindfulness with neural regulation (Creswell, Way, Eisenberger, & Lieberman, 2007; Hölzel et al., 2011). Murakami et al. (2015) found mindfulness to have a significant positive effect on neural regulation for emotional suppression, however, the mindfulness intervention was a prompt for participants to use internal language to mediate the negative emotional stimuli. This language, rather than mindfulness as a construct, may be the actual intervention. What lacks in the research is if the measurement of dispositional mindfulness of a teacher is correlated with the use of language. Language determines the relationship of concepts and cognition. This use of language may affect the teacher-student relationship and a teacher's approach to education, regardless of any specific mindful intervention used with the students.

Due to the complex nature of mindfulness as being perceived as a trait, state, and/or practice, it can be challenging to clarify the definition of a "mindful teacher." As mindfulness is a construct currently explained through cognitive psychology theory, self-report questionnaires have been the measurement of choice. It is unknown if there exists a spectrum, baseline, or threshold of mindfulness amongst teachers, as they have also typically not been participants in studies using mindfulness metric

scales. The body of literature is lacking information as to how much trait mindfulness

teachers may normally have.

The purpose of this research is therefore threefold. First, this study seeks to

collect baseline dispositional mindfulness level data of high school teachers via the

Five Facet Mindfulness Questionnaire (FFMQ), including subscale scores on

observing, describing, acting with awareness, non-judgment of inner experience, and

non-reactivity to inner experience. Second, these mindfulness scores will then be

disaggregated by demographic data to investigate differences by teacher's age, gender,

ethnicity, subject area taught, and the number of years in the teaching profession.

Third, this study seeks to describe the educational philosophies and practices of six

teachers who self-report high subscale scores on the FFMQ through classroom

observation and teacher interview qualitative data. By collecting qualitative data from

classroom observations and teacher interviews, any phenomenon that may exist with a

"mindful teacher" sample can be triangulated.

Research Questions

This study aims to answer the following specific questions:

1. What are the levels of high school teachers' self-reported mindfulness,
   as defined and measured by the Five Facet Mindfulness Questionnaire
   (FFMQ)?

2. Is there a relationship between the teacher's self-reported mindfulness
   subscale scores, as measured on the FFMQ, and teacher demographics

(age, gender, ethnicity, subject area, number of years teaching

experience)?

    3. How is a "highly mindful" teacher's conceptualization of mindfulness,

        identity, and relationships demonstrated within the classroom setting?

Significance

      By addressing these research questions using both quantitative and qualitative

analysis, this study hopes to shed light on the existing trait mindfulness of teachers

and how this mindfulness and the teacher's experience with mindfulness practices may

impact the classroom environment. By focusing this study on the description of the

teacher and examining the classroom they craft, information may be gleaned regarding

the characteristics of these "mindful" teachers, the type of relationships they form with

students and the language that is used during instruction and teacher-student

interactions (i.e. formal academic language, pro-social language). A mindful teacher's

philosophical approach to education, use of specific language, and nonverbal

interactions may create an environment conducive to students becoming more mindful

themselves while simultaneously increasing cognition. While the development of

mindfulness curriculum to be taught to students is spreading rapidly, the

implementation of such a program takes considerable time and money, impacting the

teacher, school district, and the limited instructional time in the school day. More

research investigating how teacher mindfulness impacts the classroom environment

and the effectiveness of content instruction, independent of the delivery of a

mindfulness intervention program is needed to make appropriate decisions in teacher

training, professional development, and allocation of instructional time.

Conceptual Framework

This work will be framed through a neuroeducational lens, which translates

and integrates the fields of social and cognitive psychology (mind), neuroscience

(brain), and language theory. The field of neuroeducation is an emerging field, which

is frequently referred to as 'mind, brain, and education" (Ansari, De Smedt, &

Grabner, 2012). The lens of this study is unique in this field, as it refocuses the

pedagogically-based "education" to a more learner-centered "language." Specific

theories within each of these fields will provide depth and understanding to data

collected during the study. These theories include social cognitive theory (Bandura,

1986), attachment theory (Bowlby, 1999), self-theories (Dweck, 2000), interpersonal

neurobiology (Siegel, 2012), and Neuro-semantic Language Learning Theory (NLLT)

(Arwood, 2011). Each of these theories will be discussed more in-depth in the

Chapter 2 literature review, although a cursory description of each is presented here.

Knowledge acquisition through observation is a tenet of social cognitive theory

(Bandura, 1986). When students observe a behavior and the consequences of that

behavior within a social context, they remember the events and use that information to

guide future actions. In a classroom setting, students are in a social environment of

peers and build a relationship with the teacher. They constantly observe interactions

and behaviors and apply them to their learning and future behaviors.

Within these interpersonal relationships that form between peers and teachers

exist dynamics involving trust, reliance, and care. Attachment theory (Bowlby, 1999) provides a framework for how individuals respond and react to threats or negative emotions. When teachers develop positive relationships with their students, the students may, in turn, be more willing to take risks and exhibit resiliency when faced with either academic or emotional challenge.

Social cognitive theory and attachment theory both focus on the interactions between people but do not explain the root development of the individuals within those relationships. How people develop beliefs about themselves and how these perceptions shape thoughts, feelings, and behaviors is explored in self-theories (Dweck, 2000). Self-esteem may play a large role in individual determination and motivation. Dweck (2000) posits that those who possess an incremental theory of intelligence believe that effort can change their intelligence, while those with an entity theory view intelligence as a fixed characteristic. The perception of intelligence held by the student appears to have a direct effect on academic achievement, with students who believe that effort can increase intelligence being more willing to take risks and continue to do so even when met with initial failure. While students come to a classroom with one of these two views, it is possible that the teacher can influence the expression of these beliefs if a relationship has been formed with the student and the classroom culture is one of resiliency.

While one may hold cognitive psychological theories of self, it is important to recognize the neurobiological approach to mental processes to gain a well-rounded understanding of the interconnected mind and brain. Integration of mental processes

including one's thoughts, feelings, sensations, and reasoning within a person is a core component of interpersonal neurobiology (Siegel, 2012). Chaos and rigidity result from a lack of integration of these systems within the brain. This conceptualization of integration can then be applied to the relationship between individuals. An individual with a coherent mind and an integrated brain may then connect with others through empathy, or the ability to understand and share the feelings of another. Mindfulness practices have been shown empirically to improve integration of systems (Siegel, 2007). It is possible that teachers with a higher degree of dispositional mindfulness are more able to demonstrate empathy towards their students and model for their students, in a social context, an integration of these neuropsychological systems resulting in more flexibility.

The mental processes described by Siegel (2012) as necessitating integration to avoid chaos and rigidity are rooted in language. Thoughts and the ability to describe emotions, sensations, and reason logically are a function of language semanticity, or the meaning of language. One's ability to metacognate, or to be aware and analyze one's own learning or thinking, is dependent on the level of language one has developed over time and through experience with one's environment. As language is a primary means of communication between people it is important to gather perspectives on the use of language from teachers in this study.

The Neuro-semantic Language Learning Theory (Arwood, 2011) describes language acquisition as a four-tier model. Individuals interact with their environment through sensory input that is predominantly distal through acoustic and visual stimuli.

As the brain processes this information, it begins to form patterns and creates synaptic connections, strengthening as a result of the Hebbian principle (Hebb, 1949), which states that synaptic efficacy increases with the presynaptic cell's repeated and persistent stimulation of the postsynaptic cell. This is described in lay terms as "neurons that fire together, wire together" (Baars and Gage, 2010, p. 83). Concepts form as a result of the overlaying of patterns which are then named using lexical tags, or words.

In order for a person to attenuate to stimuli and thereby form patterns and concepts, it must be meaningful. Kiefer and Spitzer (2000) found that when measuring event-related brain potentials (ERPs), semantic brain activation decays within 200 milliseconds when presented with unrelated word pairs. By contrast, when presented with consciously perceived, meaningfully related target words, semantic activation increases with time. Therefore, without meaning, a learner will not attenuate long enough to further process information into neural circuits.

Jankowski and Holas (2014) propose that metacognition, which is a key component of mindfulness, is only possible when at least two information processing levels exist in a hierarchical structure. The processing of simultaneous multiple levels of information requires a high level of functional language. A more mindful teacher may use this language to communicate with students and be more aware of the current cognitive functioning level of the student. By using and modeling rich functional language, the student's own concepts may begin to connect with more complexity resulting in an increase in overall cognition.

These lenses – social psychology (social cognitive theory, attachment theory, self-theory), neuroscience (interpersonal neurobiology), and language (neuro-semantic language learning theory) – will help frame the work of this study by providing new perspectives and interpretation of the complex interactions between teachers and students in an educational setting. Each of the presented theories attempt to provide a framework for understanding relationships, either between people or among patterns which form concepts through the learning process. The study of the role of teacher mindfulness and how that influences the classroom environment may hold important information about best practices for teachers to fully capitalize on their time with students.

As mindfulness originates from the neurobiological processes of the brain, is mediated by the language necessary to metacognate, and plays a role in approach to social interactions, the conceptual framework presented supports a proposed embedded framework of mindfulness, which may also have significant importance in the development or implementation of mindfulness strategies, programs or philosophy in education.

Summary

The use of mindfulness interventions, or practices, in a variety of settings has been shown to be beneficial for the overall well-being of individuals (Baer, 2003; Schonert-Reichl & Lawlor, 2010). Dispositional, or trait, mindfulness has become a topic of research interest to understand the underlying mechanisms for executive functioning and affect regulation. In schools, the practices have gained significant

momentum as tools that educators and administrators can use to prepare students for learning, yet little exploration into trait mindfulness in educational settings has occurred. By digging deeper into the social context, interpersonal relationships, and language development that occurs in the classrooms of mindful teachers, the field of education can gain a better understanding how to create an environment, both physical and psychological, that is conducive to student achievement.

To frame this research, Chapter Two provides a comprehensive review of literature on current mindfulness studies, theories of attachment, social cognition, neuro-semantic language learning theory, interpersonal neurobiology, and the role of attitudes and beliefs in perception.

Methodology is presented in more detail in Chapter Three. Rationale for a mixed-methods research approach is provided in this chapter. Data sources are explained and justified and collection and analysis methods are described.

Chapter Four presents the main findings which are objectively reported in both quantitative analysis formats and with descriptive analysis of observations and interviews.

Emerging patterns and themes are identified through the analysis and synthesis of the study's findings in Chapter Five. Practical and theoretical implications are discussed in the fields of social cognition and learning, interpersonal neurobiology, and mindfulness. Assertions based on the integration of the study's findings and actionable recommendations based on the application of the conclusions are also

presented. This section presents new questions that developed over the course of this

research as well as recommendations for future research topics.

CHAPTER 2

Literature Review

The purpose of this research is to collect baseline dispositional mindfulness level data of high school teachers via the Five Facet Mindfulness Questionnaire (FFMQ), including subscale scores on observing, describing, acting with awareness, non-judgment of inner experience, and non-reactivity to inner experience, and to disaggregate this mindfulness data by demographic to investigate differences by teacher's age, gender, ethnicity, subject area taught, and the number of years in the teaching profession. This study also seeks to describe the educational philosophies and practices of a teacher who self-reports high subscale scores on the FFMQ through classroom observation and teacher interview qualitative data. By collecting qualitative data from classroom observations and teacher interviews, any phenomenon that may exist with a "mindful teacher" sample can be triangulated.

Theoretical and empirical research will be discussed in this chapter as it relates to how the attitudes and beliefs and dispositional mindfulness of the teacher can set the stage for the development of a pro-social relationship and classroom environment conducive to student academic success. This literature review will therefore start by exploring the self and the development of perspective through experiences and self-reflection. The processes through which these beliefs are adapted are then discussed. As these beliefs and perceptions of self-identity play a role in teacher-student

relationships, the impact of these relationships and how they are built through attachment (Bowlby, 1999) are presented. As learning takes place in a social environment, the role of language from both a social learning and neurobiological processing approach is discussed. Finally, the potential changing educational paradigm, particularly as it applies to mindfulness and contemplative learning in an educational setting will be discussed, highlighting specific mindfulness research in curricula, attention, and emotional regulation, and teacher participants.

Self-Reflection and Perspective-Taking

Transformative Learning Theory proposes "meaning schemes", comprised of specific knowledge, values, and beliefs about one's experiences that generate one's meaning perspective (Mezirow, 1978). These schemes are acquired passively during childhood and youth, and are the target of the transformation that occurs through experience during adulthood. They act as perceptual filters and function to organize and interpret the meaning of the individual's life experiences. Emotional responses to life experiences result in the evolution of meaning perspectives. Experience, critical reflection, and rational discourse are key components to this social and communication-based theory (Mezirow, 1978).

In the majority of mindfulness curricula, there is an emphasis on self-reflection and perspective taking. The presence of these already-established perceptual filters suggested by the theory of transformative learning will make each student's experience with the relationship formed with the teacher and the students' perception of the curricula itself unique. The changing of perspectives requires some sort of

personal emotional response that exists juxtaposed with interpersonal interaction.

Emotional response and modulation is rooted in neurobiological systems (Baars and Gage, 2010). Siegel (2001) provides an integrated neuropsychological framework for understanding how the brain gives rise to mental processes and is directly shaped by interpersonal experiences. Human development occurs within a social world in transaction with the functions of the brain that give rise to the mind. There exists a fundamental mechanism of integration which can be seen at a variety of levels, from the interpersonal to the neurological. Secure attachments facilitate promoting psychological well-being through this integration.

The benefits of mindfulness include positive neurological and social changes in neural functionality, mindset, and interpersonal, community, and world-view perspectives (Leary and Tate, 2007; Murakami et al., 2015). Siegel's (2001) framework recognizes the neurobiological basis for social interactions through attachment. Students' experiences in the classroom, with their teachers, and with their peers, all shape their neural integration and learning process. Using mindfulness techniques in a social learning situation allows students and teachers to alter their neurological state and improve well-being framed in a community-based organization. This results in mutual transformative learning of the teacher and student within the formed relationship.

Social interactions are heavily influenced by our own experiences, self-identity, level of attachment, and mindset (Carter, 1998; Ellemers, Spears & Doosje, 2002; Forgas, Bower & Krantz, 1984). These social interactions in the classroom are

embedded within a larger collective culture within the classroom, which is informed by the larger organizational school culture, which is framed by the society community culture. As researchers dig deeper into what is happening at the point of intersection of teaching and learning, they begin to see the influences of these larger cultures and how they impact the perceptual filters of the teacher and student around mindfulness concepts. Educators may then begin to understand the level of fidelity of which these concepts are implemented and to what degree of success the student may apply these concepts to their own lives.

Adaptive Role of Belief and Identity

While language is the primary mode of communication between people in social interaction, an individual's belief and identity forms a personal philosophy and approach to one's environment. As individuals, we consistently interact with our environment and make judgments, whether objective or subjective (King & Kitchener, 2004; Stern, 2000). Personal beliefs are formed about morals, values, character, theories, and outcomes. While some may be true and unquestionable, others may be false, yet still serve a positive function, leading to an evolutionary adaptation. This formation of our beliefs becomes part of the fabric of our individual identity and frames our interactions with others in our communities. This identity is what teachers and students bring to the classroom each and every day. Beliefs can then be challenged or supported and adapted to the environment in which the relationship exists.

To begin to understand the relationship between teacher and student, one must

understand the development of the philosophical belief system of the teacher and student as individuals. Beliefs are core concepts of our humanistic nature, however true or inaccurate they may be. The individual's personal belief system forms the lens through which both teacher and student see the culture of the classroom and the educational content which is being taught. An evolutionary approach to the function of beliefs presumes that true beliefs are adaptive and misbeliefs are maladaptive. McKay and Dennett (2009) discuss the theory of adaptive belief, or the assumption that our beliefs about the world allow us to function effectively. They distinguish two types of misbelief as "those resulting from a breakdown in the normal functioning of the belief formation system (e.g. delusions) and those arising in the normal course of that system's operations (e.g. beliefs based on incomplete or inaccurate information)" (p. 493). Both are possible explanations for the evolution of misbelief, despite our evolutionary design to appraise the world accurately.

Positive illusions are the McKay and Dennett's (2009) foundational conclusion for the evolution of misbelief. These biased perceptions are illusions that may include self-evaluations, personal control or mastery, and unrealistic optimism about the future. Individuals with strong positive perceptions of their abilities, whether accurate or not, are more likely to attain success than those with more modest self-perceptions (Taylor & Brown, 1994b). This lends itself to the idea that simply the *mindset* of the individual can lead to the achievement of one's goals.

Misbeliefs or positive illusions do not need to be limited to self-perceptions, however. From a social psychological perspective, we continuously appraise one

another within our relationships and form perceptions. Particularly, with loved ones, humans engage in biologically adaptive behaviors based on positively biased beliefs. Positive illusions in this context are not maladaptive; rather, they provide the basis for attachment to ensure the continuation of the species (Taylor et al., 2003). This leads to the conclusion that if interpersonal relationships are strong and there is a sense of evolutionary bonding, positive illusions will be reinforced despite any falsehoods that may exist.

Practitioners and proponents of mindfulness frequently connect its practices to positive health benefits (Shapiro, Astin, Bishop & Cordova, 2005). The adaptive belief theory addresses empirical studies that have found that patients with positive, albeit unrealistic, views of their prognosis in fact show longer survival times, slower illness courses, quicker hospital discharges, and fewer medical complications. This *placebo effect* is often used to explain these positive outcomes (Hahn and Kleinman, 1983; Zubieta, Yau, Scott & Stohler, 2006). Neurobiologically, positive illusions may regulate the neuroendocrine response of the hypothalamic-pituitary-adrenocortical (HPA) axis and autonomic nervous system (Carter, 1998). This regulation is ultimately beneficial to the physical and mental health of the person by preventing chronic or recurrent stress activation of these neurological structures.

Carol Dweck (2000) expands on the development of identity with her work on self-theory. Beliefs are developed to organize the world and give meaning to personal experiences. Her use of *self-theory* describes how "people's beliefs about themselves can create different psychological worlds, leading them to think, feel, and act

differently in identical situations" (Introduction, para. 4). This theory of self focuses on self-beliefs, self-relevant goals, the processes through which people engage to achieve said goals, and the process through which people seek self-esteem.

Theories of Intelligence

In line with this development of identity, Dweck (2000) proposes two primary theories of intelligence, the so-called "entity or fixed theory" and "malleable or incremental theory," (pp. 2-3). The entity theory is the belief that intelligence simply dwells within us and cannot be changed. It is innate and fixed. Within this system, challenges are a threat to self and are avoided at all costs for fear of exposing inadequacies or a lower perceived level of intelligence. These beliefs can be limiting to our capabilities and provide a black and white view of worth and character. Within the incremental theory, intelligence is portrayed as something that can be increased through one's efforts and, therefore, is malleable. Intellectual abilities can grow with effort and guidance. People who espouse this theory thrive on challenge and seek out difficult tasks to increase the number of learning opportunities available to them. They view themselves as complex and dynamic selves in a dynamic world and look for potential, rather than limitations.

Bandura (1993) also addresses these identity concepts through an exploration of agency and self-efficacy, which is manifested in the individual's beliefs about their abilities and thereby affects their achievement. Agency is defined as the ability to exercise control over one's level of functioning and events that affect their lives (p. 118). An individual who self-identifies as an *agent* then has the ability to perform an

action in relationship to an *object*, thereby developing the semantic relationship

between the three (Arwood, 2011). A student possessing agency and a sense of self-

efficacy, or the ability to produce a desired result, will therefore increase cognition

through the development of language. Successful students, teachers and faculty have

resilient self-efficacy and hold the belief that skill is acquirable rather than an inherent

capacity (Bandura, 1993).

Closely tied to these social cognitive approaches to motivation, personalities,

and the self are the experience of emotions, their connection to cognition, and how

interpretations of situations, expectations and goals mediate and regulate behavior

(Markus & Kitayama, 1991). These theories are not limited to students and their self-

theory in an educational setting. Teachers and students bring their own perspectives to

the classroom. Given the power position of the teacher, it is likely that there will be

some influence of their own mindset of personality, motivation, development, and self

upon the students. This may give their perceptions and beliefs around any given topic

more credence, including the effectiveness or purpose of a contemplative educational

philosophy or perspective.

Role of Student Experiences and Perceptions in the Classroom

In an attempt to find the "best fit" for the culture of the community, school,

classroom, and students based on their individual needs, numerous programs and

research-based teaching methods, such as 21st Century Community Learning Centers,

Race to the Top, Smaller Learning Communities, Teach for America (Guide to U.S.

Department of Education Programs, n.d.), Sheltered Instruction Observation Protocol,

and Response to Intervention (Orlich, Harder, Callahan, Trevisan, & Brown, 2012)

have been developed, implemented, and researched. Activating prior knowledge is

one strategy teachers frequently use to engage students in cognitive activity (Schwartz

& Bransford, 1998; Sidney & Alibali, 2015; Swiderski, 2011).

 One specific type of prior knowledge is the knowledge of prior instructional

experience or "instructional metacognitive knowledge" (Elen & Lowyck, 1998). Elen

and Lowyck (1998) found that university freshmen possess knowledge about the

learning potential of elements of instructional environments, which frames their

assessment of the efficiency of instruction and their learning. Students in this study

were found to have traditional and fixed conceptions about what constitutes

instructional efficiency, reporting that current practices of interventions directed

towards surface-level processing and reproduction of knowledge were highly efficient.

These findings support the theory that students bring their own educational

experiences (e.g. prior knowledge) with them into the classroom and use these

experiences and expectations to evaluate the effectiveness of the instruction. Student

perceptions and experiences therefore play a significant role in the development of a

teacher-student relationship.

 Adolescents can draw upon personal experiences, both experienced and

witnessed, to make sense of their interactions with adults and shape their perspectives

about their relationships with teachers (McHugh, Horner, Colditz, & Wallace, 2013).

Students commonly report an essential component of fostering positive relationships is

the active and effortful engagement by the teacher on an interpersonal level,

demonstrating commitment to student well-being. The perception of support by the teacher is also critical in the development of a pro-social student-teacher relationship. McHugh et al. (2013) also defines support as teachers offering advice, helping with learning tasks including clear explanations and the dedication of the teacher to ensure student understanding of course material, and providing resources or opportunities to students that will assist in students' achievement of goals.

By contrast, inattention to a person's actions or thoughts can result in feelings of alienation (McHugh et al., 2013). Student perceptions of a teacher's inattention may result in behaviors which do not promote pro-social interpersonal relationship building, such as lack of verbal involvement in class discussions, fewer interactions with the teacher, or attention-seeking conduct which may negatively impact the learning environment. Stereotyping by the teacher has also been identified by students as potentially damaging the student-teacher relationship. This judgment is based on external categorization, with assumed group characteristics. Adolescent students much prefer the teachers to possess knowledge of their individual differences rather than to presume they have knowledge of the student's beliefs or experiences based upon generalizations (McHugh et al, 2013).

Student perceptions play a large role in the teacher-student relationship. Mercer and DeRosier (2010) studied teacher preference for students and the impact those perceived preferences have on students. They found that the degree to which a teacher prefers a specific student predicts a change in the student's perception of that teacher preference ($r = 0.21$, $p < 0.001$). This reveals that students perceive teachers'

preferences more accurately the more a teacher prefers a particular student. Higher

levels of conflict were also predicted by lower levels of teacher preference ($r = $ -0.25,

$p < 0.001$), supporting findings of the effects of stereotyping in McHugh et al. (2013).

The role and identity of the individual within the student-teacher relationship is

also important to consider when evaluating perceptions. Establishing and respecting

appropriate boundaries can be developmentally supportive by providing a sense of

predictability and comfort (McHugh et al., 2013). Distinctions made between the

roles of the "self as learner" and "self as person" can help simplify the complexity of

student-teacher relationships and allow for the creation of interpersonal boundaries

(Ozer, Wolf, & Kong, 2008). By respecting these roles, the common goal of the

student's academic success may be constructed while supporting the identity

development of the student.

The Combination-of-Perspectives (COOP) model proposed by Könings,

Brand-Gruwel, and van Merriënboer (2005) acknowledges the roles played by the

distal educational designer (i.e. book authors, educational strategists), the proximal

teacher (builder of the concrete learning environment), and the student. Proposed is a

reciprocal relationship between these three players to optimize the learning

environment. There exists a feedback loop within this systemic approach which

identifies the roles of teacher and student alike. Teachers bring their perceptions of an

efficient learning environment to the classroom which frames their approach to

education and implementation. Students also bring their perceptions of an efficient

learning environment to the classroom which directly influences their learning and

study behavior. These perceptions also impact their learning outcomes which can then frame teacher conceptions and philosophies of teaching and learning.

Building Relationships through Attachment

The relationship formed between student and teacher is heavily influenced by the ability of both to relate to and trust one another. The well-developed attachment theory suggests that children form a goal-corrected partnership in that they can begin to perceive events during interactions with primary caregiver from the giver's perspective (Bowlby, 1999). For example, toddlers may be less insistent than infants in demanding that their needs be met immediately if they have developed confidence in the caregiver's dependability in meeting their needs. During this time, Bowlby (1999) concludes that toddlers are forming an internal working model of the attachment relationship which informs them about their own self-worth and the dependability of others to provide needed attention and care.

Students also exhibit patterns of attachment as seen in their interactions with specific teachers (Cugmas, 2011). Positive attachment with teachers may lead to increased academic achievement, if students perceive their teachers to be supportive. Allen et al. (2013) found that students achieve higher end-of-year test scores when there is increased perception of teacher emotional support ($B = 31.30$, $SE = 10.63$, $p < 0.01$), classroom organization ($B = 21.65$, $SE = 10.35$, $p < 0.05$), and instructional support ($B = 25.58$, $SE = 10.13$, $p < 0.01$).

Teachers also have their own identity and attachment development, resulting in their ability to communicate and form working relationships or mentorships with

students. Ipso facto, there is no *teacher* identity without the presence of a student. If

students and teachers both have positive and effective internal working models of the

attachment relationship, the sharing of experiences, opinions, and curriculum may be

better received resulting in greater student buy-in and application of teachers'

perceptions and implementation of lessons (Riley, 2010).

The positive correlation between attachment, both secure and insecure, and

indices of emotional regulation and personality traits has been investigated in a

number of studies (Diamond, Hicks, & Otter-Henderson, 2006; Powers,

Pietromonaco, Gunlicks, & Sayer, 2006; Shaver, Lavy, Saron, & Mikulincer, 2007;

Tiliopoulos & Goodall, 2009). For example, Tiliopoulos and Goodall (2009) found a

significant correlation between cognitive perceptual deficits and anxious attachment (r

$= 0.26$, $p = 0.05$). As both attachment styles and mindfulness are correlated with

emotional regulation, it makes sense that securely attached individuals report higher

levels of mindfulness (Cordon & Finney, 2008). Goodall, Trejnowska, & Darling

(2012) suggest that mindfulness is, in fact, related to specific aspects of emotion

regulation ($r = 0.68$, $p < 0.001$) and that attachment plays a role in trait mindfulness

(attachment-related anxiety: $r = -0.44$, $p < 0.001$; attachment-related avoidance: $r = -$

0.38, $p < 0.001$). Although causal pathways have not been established, it is clear that

emotion regulation difficulties mediate the relationship between attachment and

mindfulness (Pepping, Davis, & O'Donovan, 2013).

Siegel (2007) suggests that the emotional bond developed with a caregiver may

form the basis for development of the metacognition of emotions. As one of the

aspects of trait mindfulness, metacognition is closely tied to language. Metacognition

can be defined as thinking about one's own thoughts about their knowledge, skill, or

experience. These metacognitive thoughts are tied to one's internal mental

representations of reality (Hacker, Dunlosky, & Graesser, 1998). These mental

representations are the thinker's concepts which are developed through the

overlapping of patterns (Arwood, 2011). The complexity of conceptual development

can be assessed by analyzing language function as evidence of semantic memory. An

individual who develops secure attachments in their relationships and possesses

formal language to metacognate may then report high level of dispositional

mindfulness and greater emotional regulation. As the directionality of these related

concepts has yet to be discovered, it is likely that teachers who report high levels of

mindfulness may be more adept at fostering secure attachments with their students and

also demonstrate their metacognitive processes using rich language in their

classrooms.

Relationship of Parenting Styles to Teaching Styles

Teachers have historically been placed in the role of authority and are tasked

with establishing the optimal learning environment in which students can achieve.

This environment may influence the relationship students build with the teacher,

whether positive or negative. As a teacher is the primary authority figure in the

classroom, that teacher may fulfill a pseudo-parent role in the school setting, thereby

affecting the social development and social and emotional competency of the students.

Lamborn, Mounts, Steinberg, and Dornbusch (1991) found that parenting practices, in fact, shape a child's development. Patterns of parental authority have been identified and refined into a fourfold typology (Baumrind, 1971; Maccoby & Martin, 1983), describing authoritative, authoritarian, indulgent, and neglectful parenting styles based on the levels of perceived control and warmth. Teachers also exhibit characteristics of these parenting styles in the classroom setting. A classroom led with a neglectful style provide no structure or monitoring. Indulgent authority figures exhibit low control with few rules, yet high warmth in relationships. In the authoritarian style, obedience and discipline are the primary focus with low warmth. The authoritative style, of which has been adapted to teaching (Baker et al., 2009; Wentzel, 2002), is described as consistent setting and enforcing of limits with close supervision, yet within an environment of acceptance and autonomy.

While adolescents who describe their parents as authoritarian score reasonably well on measures of obedience and conformity, they report poorer self-conceptions when compared with adolescents who describe their parents as authoritative (Lamborn et al., 1991). Adolescents with authoritative parents, by contrast, score highest in psychosocial competence and lowest in psychological and behavioral dysfunction. Similarly, by applying these similar concepts to teaching, high expectations are positive predictors of prosocial goal pursuit, interest in the class, increased responsibility, and orientation to mastery, whereas negative feedback predicts decreased prosocial behavior and classroom grades (Wentzel, 2002).

Ertesvåg (2011) developed a self-report measure of authoritative teaching based on four item each of warmth and control. Examples of warmth statements include "I show interest in each pupil" and "I often praise my pupils." Examples of control statements include "I have established routines/rules for how the pupils are supposed to act when they change activity/workplace, etc." (p. 54). Despite this work in authoritative teaching, a self-report measure is limited by the perceptions and desirability of the teacher, and further investigation of the sensitivity of the measurement was suggested by the researcher.

Arwood (2000) has provided a more robust description of an authoritative classroom to include eight characteristics. Such characteristics include a student-centered classroom where all communication and contributions are valued, classroom group identity and attachment, emphasis on student strengths rather than deficits, meaningful correction with no blame or guilt, learning is intrinsic, and the existence of shared power. A distinct comparison of authoritative and authoritarian characteristics is provided, providing a framework to distinguish authoritative versus authoritarian elements in an observational classroom setting.

The Role of Language in Learning

The formation of interpersonal relationships is grounded in verbal and non-verbal communication. It is through language, or the language-based interpretation of non-verbal cues, that individuals form contextual meaning. This requires an investigation into the social aspects of learning through the use of language.

Social learning theory. Within any social group, there exists communication through language. The internalization of this language results in cognitive development (Vygotsky, 1980). This internalization consists of three transformations: 1) an operation that initially represents an external activity is reconstructed and begins to occur internally; 2) an interpersonal process is transformed into an intrapersonal one; 3) the transformation of an interpersonal process into an intrapersonal one is the result of a long series of developmental events (Vygotsky, 1980, pp. 56-57). The culture in which a student exists impacts the identity development of the student through the shaping of cognitive development. Vygotsky's social constructivist theory identifies the central role the community plays in the process of making conceptual meaning, or semanticism.

More self-directed attention, or "derived primary attention," also emerges with the development of language (Bruner, 1966, p. 116). This self-directed attention allows a person to "talk" himself, oftentimes subconsciously, through the actions required to ignore non-meaningful stimulus and maintain focused sustained attention.

Sapir (2002) identifies language as an elaborate cultural pattern in which words have no meaning without context (p. 108). A word is simply a lexical tag to identify a concept that is created through experience within one's culture. It acts as a symbol of a concept, which may hold not only an implicit meaning but a derived meaning. This derivation allows for greater abstraction and meaning as the symbol becomes more dissociated from the original association. Higher-order critical thinking requires these more abstract concepts and complex language function.

Neurobiological language processing. Language production is a result of neuronal activity and the resulting speech, whether by sound or by hand sign, activates neurons of the other participant in the communication (Pulvermüller, 1999). The use of neuroimaging such as positron emission tomography (PET), functional magnetic resonance imaging (fMRI), electroencephalogram (EEG) and magnetoencephalogram (MEG) in language processing studies provides more concrete evidence of the neurobiological functioning of language. Hebb (1949) refers to anatomically and functionally connected neuron groups as "cell assemblies." These cell assemblies are formed by neurons in associated networks that correlate activity, and therefore influence each other more strongly.

Language is most frequently associated with two areas of the brain: Wernicke's and Broca's areas (Baars and Gage, 2010). This does not imply that language is solely processed and produced in these locations. Neuroanatomical studies show that most cortical pyramidal neurons from one area project to several other distal areas or subcortical structures. Despite this distance, this implies that neuronal activity in Wernicke's and Broca's language areas will become more strongly associated with neurons in its associative network throughout the cortex, including premotor, higher visual and association cortices. This neuroscientific evidence supports the idea that language processing at the neuronal level increases neuronal activity and cognition throughout the brain. Formal language requires the use of concrete content and abstract function words with semantic meaning. The Hebbian neurophysiological model of cell assembly potentiation (Hebb, 1949), or

increase in strength of nerve impulses along pathways, can be applied to the possible increased cognition and higher-order thinking of students who are exposed to meaningful formal language.

Intersection of social and neurobiological learning systems. Neuro-Semantic Language Learning Theory (Arwood, 2011) is grounded in the idea that the brain creates meaning as the basis to language function. According to this theory, language acquisition consists of four steps:

1) Sensory input forms meaningful patterns.

2) The sensory patterns become recognizable sets of patterns.

3) The sets of patterns form systems of patterns or concepts.

4) Language represents the concepts for greater acquisition of conceptual meaning (p. 36).

It is through the sensory experience of the individual through which the individual begins to form concepts. The community and culture in which an individual lives will present a variety of sensory input. As the brain processes these stimuli, the neuronal connections within the associative networks strengthen as patterns are created. Once a concept is created by the brain, a lexical tag is assigned resulting in language and greater conceptual meaning in a variety of contexts. This results in the ability to evaluate language function and provide insights to the level of cognitive functioning of the individual (Arwood, 2011).

Changing Educational Paradigms

The Western psychological philosophies of input-output and reinforcement by way of extrinsic motivation runs deep in the current educational system (Arwood, 2011). These approaches also frame interactions and development of teacher-student relationships. Four commonly held beliefs in education are challenged in Dweck's (2000) research. These include 1) the belief that students with high ability are more likely to display mastery-oriented qualities, 2) the belief that success in school directly fosters mastery-oriented qualities, 3) the belief that praise, particularly praising a student's' intelligence, encourages mastery-oriented qualities, and 4) the belief that students' confidence in their intelligence is the key to mastery-oriented qualities. While research is being conducted on new approaches to student success, such as Dweck's work, it is important to recognize the context in which our current teachers have been operating within the public school system.

The cultures in which teachers have been immersed (e.g. personal experience in education, teacher education programs, and school and district climate) are vastly varied on a micro level, yet nested within a larger societal collective culture. Research continues to investigate how to improve education resulting in many new or repackaged ideas and programs, but seems to continue to fail. A cumulative cultural evolution is necessary to make substantial changes in education and cannot take place simply based on intelligence and social life. Rather, it requires social learning through observation that reduces the cost of individual learning thereby creating a psychological capacity for change (Boyd & Richerson, 1996). This cultural capacity,

at several levels of organization, must exist to allow for educational reform. The understanding of the development and application of a teacher's mindfulness and potential impact on students is grounded in four domains: a) a nested-culture approach which encompasses the larger community culture (Fiske, Kitayama, & Markus, 1998), b) school culture and organizational mindfulness (Langer, 1989, 1997; Popkewitz, Tabachnick, & Wehlage, 1982), c) classroom culture and collective mindfulness (Weick & Sutcliffe, 2001), and finally, d) the teacher-student interactions. By gaining a deeper insight into a teacher's personal experiences, beliefs, and values, aspects of culture that influence pro-social teacher-student relationships may come to light and provide support for a new perspective on educational reform.

Mindfulness and Contemplative Learning in Education

The culture that exists in the educational setting is framed by communication between the teacher and students, or the lack thereof. Teachers are expected to help prepare students for entering college or career, and therefore must communicate appropriately with their students. Effective cross-cultural communication is essential in the world's growing global economy. To live and work successfully in the global community, learners must possess knowledge and skills that allow them to access and engage in a multidimensional, interdisciplinary, and multicultural educational environment (Mahani, 2012).

Contemplative learning, or the practice of observation and compassion for issues, moves beyond the teaching of critical thinking, reasoning, and writing skills as the basis for communication. Zajonc (2006) identifies six stages of contemplative

practice: 1) respect, 2) gentleness, 3) intimacy, 4) participation, 5) vulnerability, and 6)

transformation. These stages suggest that the learner must be open-minded to others'

experiences and beliefs, be willing to participate in the experiences of others despite

possible feelings of discomfort, and finally becomes fully aware of the subject through

transformation. This transformational development results in a new individual

perspective within a framework of experiences and improved communication

(Mezirow, 1991).

The ability to exhibit compassion through critical contemplation and engage in

self-reflection requires pro-social displacement and functional language (Arwood,

Brown & Kaulitz, 2015; Arwood & Young, 2000). The student must be able to self-

identify as an agent and evaluate their role in relationships to participate fully in the

learning experience. Being in a state of mindfulness allows a person to maintain "an

attention that is receptive to the whole field of awareness and remains in an open state

so that it can be directed to currently experienced sensations, thoughts, emotions, and

memories" (Jha, Krompinger, & Baime, 2007, p.110). Mindfulness is therefore the

construct which allows transformation of attitudes and beliefs to occur.

Growing Popularity of Mindfulness

Mindfulness has gained significant attention in scientific research over the past

decade in a variety of disciplines, including education (Meiklejohn et al., 2012;

Parker, Kupersmidt, Mathis, Scull, & Sims, 2014), psychiatry and psychotherapy

(Dimidjian & Felder, 2015; Khoury et al., 2013), pain (Gard et al., 2012; Petter,

McGrath, Chambers, & Dick, 2014), stress management (de Stefanaki et al., 2015;

Vibe et al., 2013), and neuroscience (Teper & Inzlicht, 2013; van der Velden &

Roepstorff, 2015).

Trait mindfulness and meditation practices studies also show an association

with improved psychological functioning (Kristeller & Hallett, 1999; Teasdale et al.,

2000), reduced stress, anxiety and depression (Rosenzweig, Reibel, Greeson, Brainard,

& Hojat, 2003; Shapiro, Schwartz, & Bonner, 1998), and emotional intelligence (Baer,

Smith, Hopkins, Krietemeyer, & Toney, 2006). Literature on mindfulness as an

intervention with youth, however, is still in its infancy (Zoogman, Goldberg, Hoyt, &

Miller, 2014).

More educators and schools are adopting mindfulness curricula and teaching

with a contemplative education framework than in earlier decades. Programs such as

MindUp (Hawn, 2011), Inner Resilience Program (Lantieri, 2008), Wake Up Schools

(n.d.), Mindful Schools (n.d.), Inward Bound Mindfulness Education (n.d.), Peace in

Schools (n.d.), and Mindfulness in Schools (n.d.) have garnished widespread attention

from teachers and school districts to improve academic outcomes and support social-

emotional learning, despite the lack of peer-reviewed research examining the

effectiveness of these programs. The majority of the research studies around

mindfulness address neurobiological benefits, such as stress reduction, the

effectiveness of training programs or the validity of mindfulness measure (Baer et al.,

2008; Reiss, 2013; Roeser et al., 2013; van de Weijer-Bergsma et al., 2014). Lacking

in research is the investigation of the relationship between the teacher and student in

mindful settings.

Zoogman et al. (2014), for example, screened 1,194 articles from 2004 to 2011, highlighting key terms such as mindfulness, mindfulness-based cognitive therapy (MBCT), mindfulness-based stress reduction (MBSR), child, adolescent, youth, student, school and young people. Of those articles discovered, 1,127 were excluded from the meta-analysis of quantitative articles due to failing to meet one or more of the following criteria: non peer-reviewed journal article, no children or adolescents in the study, different treatment other than mindfulness, and use of acceptance and commitment therapy (ACT) or dialectical behavior therapy (DBT). It is important to recognize that a significant number of studies of mindfulness have been conducted, however, they primarily focus on adults with more formal language development than children or adolescents, which makes generalizability to younger people more difficult, or use a combination of strategies, which may confound data.

Of the remaining 67 articles, 6% concerned scale development, 7% were case studies, 9% were qualitative, 9% were correlational, and 18% were theoretical. The design of these final 20 quantitative studies also varied in measurement. They predominantly measured psychological symptoms, such as anxiety and aggression. Only two studies had purely objective measures, such as psychophysiological measures, attention and behavioral tasks and randomized control trials, and two measured solely mindfulness-related attributes, such as attention and self-report mindfulness inventories. Six of the studies measured some combination of the two or three outcome types, suggesting that mindfulness studies are more likely to be of a complex design. A universal, non-specific effect size for mindfulness interventions

($d = 0.23$) was found in synthesizing the 20 quantitative studies (Zoogman et al., 2014). While this effect size is considered small, it still shows the mindfulness condition demonstrated greater improvement on outcome measures than the control conditions. This is the first meta-analysis in the literature to demonstrate the effects of mindfulness interventions on mindfulness and attention in youth.

While the meta-analysis conducted by Zoogman et al. (2014) attempted to identify mediation or correlation, it appears outside practice, instructor previous experience, session length, age, race, and gender were not significant factors. This contrasts theoretical literature that suggests that the mindfulness experience of the teacher plays a role in the acquisition of mindfulness by youth (Kabat-Zinn, 1990; 2003). However, Zoogman et al. (2014) acknowledges that the meta-analysis may not be able to detect the effect simply due to the limited number of studies available as of yet. This supports the need for additional studies to be conducted in order to explore any mediating role of the teacher.

Attention. In education, focused attention is frequently a concern in the classroom. Teachers recognize that without student attention, the level of engagement is diminished and poorer performance results (Rekart, 2011). Attention implies "the ability to direct cognitive resources to some event" (Baars and Gage, 2010, p. 270) with selective attention implying a choice among possible events. This selective attention can be influenced by increased motivation due to meaningful stimulus (Hahn, Carlson, Singer, & Gronlund, 2006). Motivated perception, or the phenomenon of "seeing what you want to see," is found to be mediated by state and

trait mindfulness (Adair & Fredrickson, 2015). Mindful attention or awareness in a

present moment describes the state of being. By contrast, dispositional, or trait,

mindfulness reflects a "greater tendency to abide in mindful states over time" (Brown,

Ryan, & Creswell, 2007, p. 218). Rather than expectations or desires influencing

perception, a more mindful person views ambiguous stimuli and experiences more

objectively, rather than excluding information based on motivation.

Through mindfulness practice, attention has been shown to improve in several

studies with youth and adolescents (Baijal et al., 2011; Flook et al., 2010; Jha et al.,

2007; Napoli, Krech, & Holley, 2005). For example, Baijal et al. (2011) found that 13

to 15 year old children receiving concentrative meditation training had improved

reaction time and accuracy on the Attention Network Test subsystems of alerting,

which involves "achieving and maintaining a vigilant or alert state of preparedness for

fight or flight decisions" ($F(1,143) = 4.22$, $p < .05$ and $F(1,143) = 6.21$, $p = .01$,

respectively). Flook et al. (2010) studied the effects of the Mindful Awareness

Practices (MAPs) curriculum amongst 64 7 to 9 year old children. MAPs is designed

to promote a state of heightened and receptive attention to moment-by-moment

experience. Flook et al. (2010) found these mindfulness practices were effective in

improving executive functioning (EF) scores of children who initially demonstrated

poor baseline EF skills on the teacher and parent Behavior Rating Inventory of

Executive Function (BRIEF) ($F(3,55) = 4.70$, $p = .005$ and $F(3,55) = 3.54$, $p = .020$,

respectively).

The Attention Academy Program (AAP) was designed to improve students'
quality of life through practicing mindfulness (Napoli et al., 2005). Over the course of
24 weeks, 194 first, second, and third grade students participated in the 12 training
sessions. Selective (visual) attention and sustained attention were measured using the
Test of Everyday Attention for Children (TEA-Ch). Paired *t*-tests showed a
significantly increased selective attention mean difference for students who
participated in the program ($t_{\text{diff}} = 7.94$, $p < .001$). The selective attention measured
how quickly the students could scan a visual field with various shapes and match pairs
of two shapes on a paper. The second selective attention test removed the distracting
shapes and simply asked the student to quickly move their hand around the paper
touching each pair. The change in performance on these tasks after the AAP
mindfulness training suggests that students who learn mindfulness techniques are
quicker to take in visual stimuli, process the information, and identify patterns.

Zoogman et al. (2014) summarized these findings by suggesting that "attention
may be the internal psychological mechanism that transmits the effects of mindfulness
interventions" (p. 26), meaning that these studies show that attention and mindfulness
are clearly interrelated and, as such, studies around mindfulness in the classroom are
prudent.

Emotional regulation. Emotional regulation allows humans to adapt to their
environment through the biofeedback loop of experience and amygdalar response
(Zotev, Phillips, Yuan, Misaki, & Bodurka, 2014). Mindfulness has been suggested as
an additional strategy to regulate emotion, distraction, and detachment (Beauregard,

Lévesque, & Bourgouin, 2001; Gross, 2002; Tracey et al., 2002). Functional magnetic resonance imaging studies have now identified that the neural network pathways used during mindful emotional regulation differ in areas of functional connectivity compared with using an emotional suppression, or avoidance, strategy (Murakami et al., 2015).

The 21 adult participants in Murakami's (2015) study were initially instructed to look at neutral and negative pictures and respond naturally to establish a baseline affect score for each picture. Participants were then instructed to use a coping strategy while observing the pictures. During the suppress-negative task, participants were instructed to "remain calm and to diminish any subjective feelings regardless of the affective valence of the stimulus" (p. 4). During the observe-negative task, participants were to "observe objectively and describe their subjective feelings or thoughts in their minds, and physiological changes in bodies, not with voice but just mentally, and to *not* suppress the emotions that are evoked by viewing the negative pictures" (p. 4). Both strategies proved effective for regulating emotion compared with no intervention, as shown by decreased amygdalar emotional responses and activation of the ventrolateral prefrontal cortex, which plays a role in suppressing emotion. In the look-negative tasks, participants were asked to look at negative pictures and respond naturally. Suppress-negative and observe-negative tasks were significantly lower than scores after the look-negative task ($t(20) = 3.33$, $p = .001$ and $t(20) = 3.73$, $p = .001$, respectively).

The results of this study have important implications for education, from both a behavioral and neurophysiological perspective. Using a suppression strategy to regulate emotion activated the ventrolateral prefrontal cortex, while using mindfulness activated a broader range of brain areas. Neural activation in the mindfulness intervention group was found in language areas including the left inferior frontal gyrus, including Broca's area and the bilateral middle temporal gyrus (Murakami et al., 2015). This suggests that the use of language is important in emotional regulation and internal perspective-taking using mindfulness strategies.

Teacher mindfulness studies. The extent of mindfulness studies with educators has been limited to the feasibility and effectiveness of mindfulness intervention programs on high school teachers and interviews and observations of teachers/trainers of mindfulness who tend to be psychologists or therapists. In one of the only mindfulness studies with educators as participants, Frank, Reibel, Broderick, Cantrell, and Metz (2015) provide evidence that mindfulness practice may promote the health and well-being of educators. Frank et al. (2015) found that high school teachers who participated in an 8-week Mindfulness-Based Stress Reduction (MBSR) program with a certified MBSR instructor reported significantly improved scores on the Five Facet Mindfulness Questionnaire (FFMQ) in observing ($t(23) = 4.63$, $p = 0.01$), acting with awareness ($t(23) = 2.66$, $p = 0.03$), non-judgment ($t(23) = 3.76$, $p = 0.01$), and non-reactivity ($t(23) = 3.95$, $p = 0.01$. Describing, one of the five facets of the FFMQ, showed no significant change in the teachers' self-report ($t(23) = 1.86$, $p = 0.12$). Teachers also showed an improvement in overall sleep quality ($t(29) = -3.10$, p

= 0.01). After completing this study, teachers voluntarily chose to continue participating in a weekly mindfulness practice group for the remainder of the school year demonstrating the intervention as being well-received. The number of participants who continued in this group was not identified. This study shows that training can positively affect teachers' self-reporting of aspects of mindfulness as well as their physical health.

Similarly, Roeser et al. (2013) also examined teacher stress and burnout, both of which may exacerbate teacher health problems and negatively affect student engagement due to diminished teacher effectiveness, absenteeism, and exhaustion. In their 2013 student, 113 public school elementary and secondary teachers in Canada and Western United States were selected to participate in an 8-week Mindfulness Training (MT) program or control group. Post-mindfulness training, teachers showed an increased score on the FFMQ ($F(1,109) = 16.92$, $p < 0.01$) and at a 3-month follow-up continued to show improvement ($F(1,95) = 17.37$, $p < 0.01$). This also supports that intervention programs for adults can have a marked impact on teachers' self-reporting of mindfulness. ANCOVA results showed that teachers who participated in MT reported less occupational stress and burnout than the control (post-program: $M_{\text{intervention}} = 2.52$, $SE = 0.10$ vs. estimated marginal $M_{\text{control}} = 3.05$, $SE = 0.10$), as measured by self-reported inventories.

While most of the mindfulness studies are quantitative in methodological approach, van Aalderen, Breukers, Reuzel and Speckens (2014) studied perceptions of nine mindfulness teachers qualitatively. During interviews, van Aalderen et al. (2014)

found that these teachers recognized the importance of embodying the concept or demonstrating a personal experience of mindfulness and also recognized the power of non-reactivity, or not intervening and feeling responsible for the student in solving their problems. The researchers also observed the teachers sharing their own experiences during training, demonstrating confidence and authority. Seven of the nine teachers also mentioned the use of language and metaphors to provide multiple points of access for students to understand mindfulness conceptually. Specific concrete examples were preferred over the use of vague language, like 'energy' (p. 173).

Summary

There exists a growing interest in mindfulness practices and the potentially positive effects on the health and well-being of its practitioners. Mindfulness-based interventions that were commonly used in therapeutic settings have now begun to make their way into educational settings. Yet, few studies have focused solely on educators in a public school setting who may have little to no formal meditation or mindfulness practice training. By collecting quantitative data with this type of sample, as measured on mindfulness measurements such as the Five Facet Mindfulness Questionnaire, more comparative studies may be conducted, providing greater context and generalizability.

Simply due to the small number of studies of teacher mindfulness in the body of literature, it is difficult to know what factors may influence a teacher's trait mindfulness. An investigation of teacher demographics and their self-reported

mindfulness levels offers a glimpse into the possible effects of life and interpersonal experiences, culture, and the integration of perspectives upon mindfulness, independent of any specific interventions. These experiences may come to play within the classroom setting and be visible to an observer. Being physically present in a classroom allows one to witness teacher-student interactions and elements of relationship-building. One can get a sense of the classroom environment and culture that has been fostered through the teacher's approach to education.

Finally, the teacher's philosophical approach to education that is developed through their own self-identity, beliefs, and experiences frames their relationships with students. Behavior is an outcome of thoughts, expectations, and skills. Teacher behavior in and out of the classroom is witnessed by students who then form their own perceptions of conflict and support. Teachers who self-report higher levels of mindfulness may behave in a way that promotes positive self and pro-social interactions. Allowing a teachers to share their own personal understandings of conceptual ideas such as intelligence, talent, and mindfulness offers the literature a more robust description of how mindfulness manifests itself within the educator.

CHAPTER 3

Methodology

The purpose of this study is threefold: to collect dispositional, or trait, mindfulness level data of high school teachers, to examine any relationship between mindfulness scores and teacher's age, gender, ethnicity, subject area, and years in the teaching profession, and to triangulate the trait data with qualitative data from classroom observations and teacher interviews to describe any phenomenon that may exist with a "mindful teacher" sample, identified by teacher responses on a self-report mindfulness questionnaire.

It is hypothesized that teachers who are younger and have experience with mindfulness/meditation practices will report as more mindful as a result of a generational shift in pedagogical techniques in educational teacher training and greater exposure to mindfulness programs. Additionally, it is the researcher's hypothesis that teachers who are more mindful, as measured by the Five Facet Mindfulness Questionnaire, will create a classroom climate conducive to positive relationship-building, attachment, and foster respectful interactions between teacher and student. A closer examination of self-reporting, highly mindful teachers' educational philosophies and approach to teacher-student relationships may yield an important insight to the complexities that exist in teaching and learning and what practices may be most effective in the classroom.

Research Design and Rationale

This study utilized a mixed-methods research design approach to provide an analytical, yet narratively rich description of the educational philosophies, teacher-student relationship in the classroom, and mindfulness experiences of teachers who self-report high mindfulness scores. By using a mindfulness questionnaire, the range of trait mindfulness of high school teachers can be collected, described, and correlated with teacher demographics, such as age, gender, ethnicity, subject area taught, and number of years of teaching experience (Sommer & Sommer, 1997). The FFMQ subscale scores, Observe, Describe, Act with Awareness, Non-judging, and Non-reactivity, have been identified as more meaningful than the overall mindfulness score (Baer et al., 2006).

Qualitative measurements, including semi-structured teacher interviews, and classroom observations of teachers selected for the case study based upon their score on the mindfulness questionnaire, allow the researcher to provide context and triangulate multiple sources of data promoting validity and reliability of the research (Merriam, 2009). The interviews provide a more holistic view of teacher-held perceptions and more detailed description of individual philosophy and practice. Each interview question was designed to address aspects of the theories identified in the conceptual framework introduced in Chapter Two. Classrooms were observed to gather information about the classroom activities, teaching behavior, student behavior, and teaching style (authoritative versus authoritarian) using a researcher-created observation form. This information provides more observational data to describe the

student-teacher interactions and climate of the classroom. This protocol is based on

Arwood's work *The Language of Respect: The Right of Each Student to Participate in*

an Environment of Communicative Thoughtfulness (2000).

Role of the Researcher

The researcher has both an academic and personal interest in mindfulness. As

a former teacher, she has self-studied and implemented the MindUp program over the

course of three years with her seventh grade science classroom seeing varied results

amongst her students. The MindUp program was created with neuroscientists,

cognitive psychologists, and educators to teach students social and emotional learning

skills linking cognitive neuroscience, positive psychology, and mindful awareness

training (MindUp, 2011). The goal of the program is to reduce stress, improve

academic performance, strengthen abilities for concentration, and help establish a

community of learners within the educational setting. Lessons in this program include

units on getting focused, sharpening senses, attitude, and taking action mindfully.

The program received positive reviews by the students and many students

identified that the strategies and lessons presented were helpful in calming and

preparing them for academic studies. While some students found the program to be

more personally impactful than others, the majority of students believed the lessons to

be beneficial and interesting. As the teacher, it provided the researcher with specific

language to use with students and easy-to-implement activities that did not require

much preparation.

After this experience, she began to study the neurobiological effects of mindfulness and present at state and national conferences on the role of mindfulness in the classroom and mindful leadership. Personally, she has used meditation practices to reduce stress and anxiety, both contributors to a stress-induced neuropathological disorder, as well as to induce a state of hypnosis through visualization and relaxation for the purpose of pain extinction. As these experiences were positive, it may present a researcher bias. To reduce the effects of this potential bias, the self-report allows for objective quantitative analysis. Interview questions were carefully crafted to be neutral and classroom observations were descriptive in nature and not specific to any direct relationship to mindfulness.

The researcher is also the administrator in the building in which the study is being conducted. This may cause bias in the data as the presence of an authority figure may influence an otherwise authentic educational environment or self-evaluation of mindfulness facets. In an attempt to reduce social desirability bias, which may influence participants to ascribe to traits that may make them appear more favorable to the researcher (Furnham, 1986; Nederhof, 1985), teacher participants self-administered their questionnaires, the researcher made it explicitly clear to teachers that any interview responses would not be included in any performance evaluations related to their job duties, and the researcher frequently visited the classrooms to establish a presence in order to reduce novelty effects on both teacher and student participants.

Context and Participants

The study was conducted in a single comprehensive four-year public high school in Southeast Portland, Oregon. Southeast Portland has the highest population of any neighborhood in Portland with over 150,000 residents. Thirty-four percent of the neighborhood population has attained a Bachelor's degree or higher with a median household income of $53,340. Southeast Portland has the highest number of households living below poverty amongst Portland neighborhoods at 7,070 households. Caucasians are the most common race group in the neighborhood and citywide with an Asian population being second highest at 10% (Population and Demographics, n.d.).

Student enrollment demographics are presented in Table 3.1. In addition to offering a comprehensive public school curriculum, this high school is also an International Baccalaureate World School offering 32 pre-university level courses to 11th and 12th grade students.

Table 3.1

Student Enrollment Demographics of Research Site

Total Student Population	Free & Reduced Lunch	Special Education	Talented & Gifted	Limited English Proficient	Ethnicity
1595	27%	11%	23%	2%	• 70% Caucasian • 9% Latino • 9% Asian • 8% Mixed Race • 4% Black • < 1% Pacific Islander

This study was presented at a regularly scheduled staff meeting after school. All 86 teachers were informed, both verbally and in writing, that participation was confidential, voluntary, and the answers had no impact on their performance evaluations or their relationship with the researcher. Teachers were also informed that they could choose not to participate at any time during the study. The FFMQ and demographic surveys were handed out to each teacher and were informed that the questionnaire could be returned to the researcher via confidential internal mailbox if there was an interest in participating. Two reminder emails were sent to all staff, two weeks apart, to encourage more participation and identify the date at which participation would no longer be accepted. After initial quantitative data was statistically analyzed, teachers meeting the case study criteria were asked in person and in private if they would like to participate. Again, they signed an informed consent for their participation in the case study and were, orally and in writing, reminded of their confidential and voluntary participation.

Fifty high school teachers returned the Five Facet Mindfulness Questionnaire (FFMQ). This questionnaire return rate (58%) is typical of this school when teachers are asked to participate in school-wide professional development surveys (J. Golden, personal communication, February 1, 2016). Two participants did not complete all questions and were thus excluded from the study, resulting in 48 total participants ($N = 48$).

The 48 teacher participants ranged in age from 24 to 69 years of age ($M =$ 45.94, $SD = 10.36$). One participant failed to report age, and was therefore removed from analysis that investigated any relationship with age. Teachers reported gender as 35% male and 63% female. One participant reported gender as transgender and was therefore removed from analysis that investigated any relationship with gender. Caucasian teachers were the predominant ethnic group identified as 83% of the total participants. The remaining teachers identified as 6% Asian or Pacific Islander, 6% Latino, and 2% Mixed. One participant chose not to provide their ethnicity and was therefore removed from analysis that investigated any relationship with ethnicity.

Each participant self-reported their years of teaching experience and teaching subject areas. The number of years of teaching experience ranged from first year teacher to more than 40 years with a mean of 16.74 ($SD = 10.13$). Four participants identified their area of teaching as more than one subject area (i.e. Language Arts and Social Studies). For analysis purposes, the researcher chose to report their data using a single subject area, selecting the primary subject of that teacher's current teaching schedule. For analysis purposes, a Teaching Subject Category was also used to aggregate teachers due to the small sample size in each individual subject area. "Humanities" encompassed teachers of Language Arts, Social Studies, and World Language ($n = 23$), while "STEAM" encompassed teachers of Science, Career Technical Education, Health, Physical Education, Arts, and Math ($n = 23$). Two teachers from the study were excluded from analysis of teaching subject category as their primary teaching areas were in Special Education.

Based on quantitative analysis of the Five Facet Mindfulness Questionnaire, six teachers who scored at least one standard deviation above the overall mean in at least three of the five subscales and significantly higher on the Fullscale were asked to participant in classroom observations and structured interviews as part of the case study sample. The only other participant who met this criteria was asked to participate in the case study but declined. Age of participants in this case study sample ranged from 35 to 69 years with a mean of 49.33 ($SD = 11.18$). Years of teaching experience ranged from 3 to 29 years with a mean of 16.50 years ($SD = 8.78$). Five of the six teachers in the case study identified as "Humanities" teachers, while one identified as a "STEAM" teacher.

Measures

The teacher participants completed the Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer & Toney, 2006) and a demographic survey during the second month of the 2015-2016 school year. The demographic survey included questions asking teachers to provide their age, gender, ethnicity, subject areas taught, and number of years of teaching experience. These demographics were selected to allow for quantitative analysis allowing for identification of any patterns that may exist specifically with a teacher sample.

Self-report inventories have inherent validity issues related to the ability of the respondent to read and understand the items, understand one's self, and their willingness to give frank and honest answers (Ary, Jacobs, & Sorensen, 2010). To reduce these types of validity concerns, demographic questionnaires and semi-

structured interview questions used in this study utilized age-appropriate language for adults with a college education.

Teacher demographics survey. A brief investigator-created demographics questionnaire included five items that asked teacher participants to report on age, gender, ethnicity, subject area(s) taught, and number of years teaching experience. Also included was a brief open-ended question asking the participant to describe any mindfulness or meditation training in which the participant may have participated.

Five Facet Mindfulness Questionnaire (FFMQ). Teachers completed the Five Facet Mindfulness Questionnaire (FFMQ) at the beginning of the study to quantify their self-reported trait mindfulness. The Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006), is a public domain 39-item psychometric instrument consisting of statements to which the subject responds using a 5-point Likert scale. It is based on a factor analysis of five other mindfulness questionnaires: the Freiburg Mindfulness Inventory (Buchheld, Grossman, & Walach, 2001), the Mindful Attention Awareness Scale (Brown & Ryan, 2003), the Kentucky Inventory of Mindfulness Skills (Baer, Smith & Allen, 2004), the Cognitive and Affective Mindfulness Scale (Feldman, Hayes, Kumar, & Greeson, 2004), and the Mindfulness Questionnaire (Chadwick, Hember, Mead, Lilley, & Dagnan, 2005). Authors of the instrument suggest that subscale scores are more meaningful for the FFMQ than an overall mindfulness score. The FFMQ has been investigated extensively for reliability and validity in both adult and adolescent samples (Baer et al., 2006; West, 2008). The FFMQ was also found to have a grade level readability estimate of 5.6 (West, 2008).

Each statement is scored into one of five facets of mindfulness: observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience (see Table 3.2). Subscale coefficient alphas based on a student sample ($n =$ 613) are Observe = .83, Describe = .91, Act with Awareness = .87, Non-judging = .87, and Non-reactivity = .75 (Baer et al., 2006). Table 3.2 shows example statements from the FFMQ that teachers were asked to rate their level of agreement using a five-point Likert scale. To ensure reliability of the questionnaire, certain statements are reversed.

Table 3.2

Example Five Facet Mindfulness Questionnaire Statements by Subscale

Subscale	Example
Observing	I pay attention to how my emotions affect my thoughts and behavior.
Describing	I can easily put my beliefs, opinions, and expectations into words.
Acting with Awareness	I do not rush through activities without really being attentive to them.*
Non-judging of Inner Experience	I do not tell myself that I shouldn't be thinking the way I'm thinking.*
Non-reactivity to Inner Experience	In difficult situations, I can pause without immediately reacting.

Note. * denotes statements that have been reversed from the original questionnaire.

Procedures

All 86 high school teachers at the school were invited to participate during the first month of school. Teachers who chose to participate completed the teacher demographic survey and the Five Facet Mindfulness Questionnaire (FFMQ). Results were initially sorted to identify teachers self-reporting the highest Fullscale mindfulness scores as well as the highest subscale mindfulness scores. Teachers scoring at least one deviation higher than the overall mean in at least three of the five subscales and higher than the overall mean on the Fullscale were invited to participate in the teacher interviews and classroom observations. Teachers were not made aware of their scores or ranking. The resulting six case study participants, who constitute the highly mindful teacher case study, are described more in-depth next.

Teacher A. Teacher A is a 35 year old white female humanities teacher with three years of teaching experience. On the FFMQ, she scored higher than the overall mean plus one standard deviation in Fullscale, Describing, Acting with Awareness, and Nonjudging. Her Non-reactivity to inner experience was greater than the mean, but not higher than the mean plus one standard deviation. The only subscale where she self-reported lower than the overall mean was in Observing. On the initial survey, she described no mindfulness or meditation experience.

Teacher B. Teacher B is a 51 year old male humanities teacher with 29 years of teaching experience. He identified as a historically underrepresented minority. On the FFMQ, he scored higher than the overall mean plus one standard deviation in Fullscale, Describing, Nonjudging, and Nonreactivity. Both of his Observing and

Acting with Awareness scores were higher than the mean. On the initial survey, he reported that he had no meditation experience but had read articles on mindfulness and reports that he has been raised with elements of mindfulness.

Teacher C. Teacher C is 45 year old male humanities teacher with 18 years of teaching experience. He identified as a historically underrepresented minority. On the FFMQ, he scored higher than the overall mean plus one standard deviation in Describing and Nonreactivity. Both of his Fullscale and Acting with Awareness scores were higher than the mean. He scored lower than the mean in Observing and Nonjudging. On the initial survey, he reported that he had little experience in mindfulness and meditation, however, he has participated in visualization exercises around sports performance.

Teacher D. Teacher D is a 46 year old white female humanities teacher with 18 years of teaching experience. On the FFMQ, she scored higher than the overall mean plus one standard deviation in Fullscale, Observing, Nonjudging. Her Describing score was higher than the mean. She scored lower than the mean in Acting with Awareness and Nonreactivity. On the initial survey, she described her extended family as practicing meditation as well as her immediate family using self-hypnosis and visualization techniques. She has led students through scripted meditations. She has practiced yoga and walking meditation for over 20 years. She has read about the health benefits of mindfulness and tries to incorporate strategies into her daily life.

Teacher E. Teacher E is a 69 year old white male STEAM teacher with 20 years of teaching experience. On the FFMQ, he scored higher than the overall mean

plus one standard deviation in Observing and Nonreactivity. His Fullscale score was higher than the mean. He scored lower than the mean in Describing, Acting with Awareness, and Nonjudging. On the initial survey, he described his mindfulness experiences as consisting of regular yoga classes for about 20 years.

Teacher F. Teacher F is a 50 year old female white humanities teacher with 11 years of teaching experience. On the FFMQ, she scored higher than the overall mean plus standard deviation in Fullscale, Observing, Describing, Acting with Awareness, and Nonreactivity. Her Nonjudging score was higher than the mean. On the initial survey, she reported having taken many years of yoga and had experiences some Zen training.

Interviews

Over the course of the following two months, the six case study teacher participants were interviewed to collect information about their definitions of intelligence and talent, educational philosophy, the role of the teacher-student relationship in the classroom, and their understanding of and experiences with mindfulness traits/states/skills and practices. The interviews took place in a private quiet office in the school building during days and times suggested by the teacher participants. Each interview took between 30 and 60 minutes with the average lasting around 40 minutes. All interviews were audio recorded using a digital voice recorder and notes were taken to ensure accurate audio transcription.

Semi-structured interviews were conducted to allow for flexibility in the format and to allow for probing questions, if necessary (Merriam, 2009; Ary et al,

2010). Rich questions were developed by examining the theoretical frameworks that

frame this study and creating unbiased questions that ask participants about their own

experiences, beliefs, and values. These provide insight using an interpretive

phenomenological analysis (Smith & Osborn, 2003), which is appropriate for studies

investigating affective, emotional, and human experiences (Merriam, 2009).

Participants were asked to describe their experiences in as much detail as possible,

with occasional prompting by the interviewer for further description or clarification.

Prompts included a basic restatement of the question or a reassurance to the

interviewees that their own impressions and initial responses were requested.

Interviews were transcribed verbatim from the audio recording and reviewed multiple

times to check for accuracy. Participants were not provided transcripts unless

requested, as the participants' initial responses to questions about their own

philosophies and experiences were desirable and believed to be more valid than after

any potential participant reflection.

     Five questions were asked of each teacher participant, with probing as

necessary. Questions asked of the teachers included:

1. Mindset
   a. Please explain, in detail, your definitions of "intelligence" and "talent."
2. Educational philosophy
   a. What is the purpose of education? Please include what you think are desirable outcomes of your students' education.
3. Role of teacher in teacher-student relationship

a. What are the role and responsibilities of the teacher, both in and out of the classroom?

b. What strategies do you use? Describe specific strategies you use to establish your classroom environment and teacher-student relationships.

4. Semantic meaning of mindfulness

    a. How do you define the term mindfulness?

        i. Do you believe it can be cultivated or is it an inherent trait?

        ii. How can a person develop more mindfulness?

5. Meditation, mindful awareness experience

    a. Please describe any experiences you may have had with meditation or mindful awareness practices.

        i. How did these experiences make you feel?

        ii. To what extent did you use language (either internal voice or external language) to guide your understanding of the meditation or mindful awareness experiences?

Observations

Each of the six teachers' classrooms were visited to collect qualitative data as it relates to teacher-student interactions. Qualitative classroom observations included descriptions of classroom environments such as decor, furniture/equipment organization, descriptions of teaching behavior (i.e. individual versus group learning strategies, verbal and nonverbal interactions with students), and descriptions of student

behavior (i.e. on-task behavior, response to teacher requests or instruction). The observation protocol for authoritative versus authoritarian classrooms found in Arwood's *Language of Respect* (2000), also was used to guide classroom observations (see Appendix D). An authoritative system "works to develop each person's identity within a group while allowing each person to develop a shared sense of power as being an unique and active member or learner within the group" (p. 321). Such authoritative characteristics include student choice, shared power, intrinsically rewarded learning, respected and validated communication, equal respect and value for all students, and internal value and group attachment.

While these observations are not directly related to mindfulness, the teachers who were selected for these observations had previously self-reported as more mindful than the overall teacher participants. This allows for a case study examination of highly mindful teacher practices in a naturalistic setting and a triangulation of data with interview responses.

The teachers were not made aware of what classes or lessons the researcher would be observing for the best opportunity at a naturalistic observation. As both teacher and students are accustomed to an administrator visiting the classroom with a laptop and taking notes, an online private Google form was created to frame the collection of field notes and allowed for data to be quickly organized by class. This allowed for consistency in observation between classrooms. These notes were only shared with teachers by request.

To reduce novelty effects of a researcher's presence in the classroom, the

researcher frequented the classroom on a drop-in basis, sometimes for a brief few minutes to simply establish a presence, other times for a longer observation which included a rich description of the classroom environment. There was no interaction with the teacher or the students during these observations, except in a situation when the administrator's intervention was necessary. No significant differences of teaching or student behavior were observed by the researcher during times of drop-in or more formal data collection.

Data Analysis

All quantitative data was analyzed using statistical packages, including Excel and SPSS, to calculate descriptive statistics, analysis of variance and *t*-tests to compare groups in each subscale category, and correlation matrices (Sommer & Sommer, 1997).

Qualitative data was collected in field note journals and analyzed using QSR International's NVivo 10 Computer Assisted Qualitative Data Analysis Software (CAQDAS). Interview data and classroom observations were analyzed through open coding in order to construct categories for phenomenological analysis (Merriam, 2009). Qualitative data was analyzed using descriptive coding by interview question in the first cycle (i.e. mindset, educational philosophy, role of the teacher in the teacher-student relationship, meaning of mindfulness, and mindfulness experiences). Teacher responses to each question were analyzed using pattern coding, in the second cycle, to further analyze data into emerging values, beliefs, and philosophies within each of the initial descriptive codes. This allows for a phenomenological approach to

understanding the philosophies, teacher-student interactions, and teacher understanding of mindfulness of a sample who self-reported with higher mindfulness than the overall participant sample.

Summary

The interactions between teachers and students in the classroom are complex. To thoroughly investigate the practices of a self-reported mindful teacher and potential student educational outcomes, both quantitative and qualitative data analysis is necessary. While trait mindfulness can be numerically described and interpreted, the essence of being a mindful teacher and sharing an educational experience framed within a mindful philosophy requires a more phenomenological analysis.

CHAPTER 4

Findings

This research attempts to answer three questions related to trait mindfulness of teachers in a high school setting. First, the researcher hopes to discover the levels of high school teachers' self-reported mindfulness, as defined and measured by the Five Fact Mindfulness Questionnaire (FFMQ) (Baer, 2006). Second, the researcher wants to know if there is a relationship between the teachers' self-reported mindfulness subscale scores, as measured on the FFMQ, and teacher demographics, specifically, age, gender, ethnicity, subject area, and years of teaching experience. Third, the researcher hopes to understand the conceptualizations of mindfulness, identity, and relationships through triangulation of interviews and classroom observations.

This chapter will be organized by these three research questions. The descriptive quantitative data from the FFMQ will initially be presented with means and standard deviations for full-scale and subscale scores in each of the teacher demographic areas. Statistical analysis, using SPSS statistical package, will be presented to identify any relationships between scores and demographics. Qualitative data collected from classroom observations and teacher interviews will then be analyzed for patterns and discussed through the theoretical lenses within this study's conceptual framework. These findings will be organized by each theoretically-derived interview question.

Levels of Teacher Mindfulness and Demographic Relationships on FFMQ

Means and standard deviations for FFMQ scores are presented in Table 4.2. The majority of teachers reported that each statement (or it's reverse, as appropriate) was sometimes true (3), often true (4), or very often or always true (5) on each subscale of the FFMQ (Observing: $M = 3.70$, $SD = 0.64$; Describing: $M = 3.59$, $SD = 0.80$; Acting with Awareness: $M = 3.61$, $SD = 0.45$; Non-judging of Inner Experience: $M = 3.66$, $SD = 0.59$; and Non-reactivity of Inner Experience: $M = 3.23$, $SD = 0.55$). Male ($n = 17$) and female ($n = 30$) participants self-reported similarly in each subscale with no statistically significant differences on a *t*-test comparing the means of each gender.

White ($n = 40$) and Underrepresented Minority ($n = 7$) participants also self-reported similarly in each subscale with no statistically significant differences, with one exception. There was a significant effect for ethnicity, $t(45) = 2.05$, $p < 0.05$, with participants who identified as an underrepresented minority (Asian, Pacific Islander, Latino, and Mixed Race) reporting lower than white teachers in Non-judging of Inner Experience (see Table 4.3). This demonstrates that underrepresented minority teachers experience more self-judgment or criticism of their inner experience than their white counterparts.

Table 4.4 shows difference in scores between Humanities (i.e., Language Arts, Social Studies, and World Language) and STEAM (i.e., Science, Career Technical Education, Health, Physical Education, Arts, and Math) teachers. While none of the one-way ANOVA tests of Teaching Subject Area and Full-Scale or Subscale scores on

the FFMQ were statistically significant, there was a significant effect for Teaching Subject Category, $t(44) = 2.34$, $p < 0.05$, with STEAM teachers reporting lower Describing subscale scores than Humanities teachers (see Table 4.4). These results show that Humanities teachers self-report finding words to describe their emotions, behaviors, and thoughts with more ease than STEAM teachers.

Table 4.5 shows the age of the participant strongly correlated with the number of years of teaching experience, Full-scale score, and Observing subscale score, however was not significantly correlated with any other subscale. The number of years of teaching experience was only significantly correlated with Observing and all other subscales had an insignificant Pearson's r between -.03 and .01. Observing was not statistically significant with any other subscale. There was a strong correlation between Describing and Acting with Awareness, $r(46) = .41$, $p < .01$, and Describing and Non-reactivity to Inner Experience, $r(46) = .29$, $p < .05$. Non-judging of Inner Experience and Non-reactivity to Inner Experience were also correlated, $r(46) = .37$, $p < .05$ (see Table 4.5). The positive correlation of age and number of years of teaching experience is to be expected and also demonstrates that older participants believed themselves to be more aware of their environment (observing). The direct relationship between Describing and Acting with Awareness, and Describing with Non-reactivity suggest that the ability to use words to describe emotions, thoughts, and behaviors are related to self-regulatory executive functioning skills.

Table 4.3

Means of Five Facet Mindfulness Questionnaire Scores and Nonparametric Demographics

	n	Full Scale	Observing	Describing	Acting with Awareness	Non-judging of Inner Experience	Non-reactivity of Inner Experience
Overall	48	139.06 (14.45)	29.60 (5.12)	28.75 (6.39)	28.88 (3.58)	29.25 (4.70)	22.58 (3.82)
Gender							
Male	17	137.41 (12.60)	28.88 (5.18)	29.00 (6.31)	27.71 (2.97)	28.59 (4.36)	23.24 (3.13)
Female	30	140.30 (15.65)	30.03 (5.22)	28.83 (6.52)	29.47 (3.82)	29.73 (4.95)	22.23 (4.22)
Ethnicity							
White	40	138.98 (15.02)	29.50 (5.28)	28.30 (6.58)	28.85 (3.87)	29.85* (4.53)	22.48 (3.38)
Underrepresented Minority	7	139.00 (12.88)	29.57 (4.58)	30.86 (5.46)	29.14 (1.77)	26.00* (4.97)	23.43 (6.21)

Note. * $p < .05$. Standard Deviations appear in parentheses after means.

Table 4.4

Means of Five Facet Mindfulness Questionnaire Scores and Teaching Subject Area

	n	Full Scale	Observing	Describing	Acting with Awareness	Non-judging of Inner Experience	Nonreactivity of Inner Experience
Subject							
Language Arts	11	144.91 (13.90)	28.82 (5.91)	33.73 (4.05)	29.55 (3.53)	30.18 (5.21)	22.64 (4.27)
Science	6	138.33 (10.48)	29.00 (6.63)	28.17 (4.96)	28.83 (2.64)	30.00 (4.56)	22.33 (2.16)
World Language	5	128.60 (9.18)	30.20 (2.95)	25.40 (3.21)	28.60 (2.61)	25.60 (5.27)	18.80 (5.22)
Math	6	137.67 (14.47)	31.83 (5.23)	28.00 (6.84)	27.17 (4.67)	28.33 (3.33)	22.33 (3.83)
Special Education	3	143.00 (12.53)	32.00 (3.61)	27.00 (5.57)	32.00 (3.61)	27.00 (4.58)	25.00 (4.36)
Health/PE	3	135.00 (17.35)	27.33 (5.51)	24.00 (6.00)	28.33 (3.06)	30.67 (5.13)	24.67 (3.22)
Arts/CTE	7	140.14 (21.64)	31.43 (4.69)	25.57 (8.62)	29.57 (4.20)	30.71 (5.56)	22.86 (2.97)
Social Studies	7	138.14 (13.98)	27.14 (4.74)	30.43 (6.75)	27.71 (3.90)	29.43 (3.99)	23.43 (3.60)
Subject Category							
Humanities	23	139.30 (14.10)	28.61 (4.99)	30.91* (5.72)	28.78 (3.42)	28.96 (5.01)	22.04 (4.47)
STEAM	23	139.00 (15.57)	30.35 (5.26)	26.70* (6.50)	28.87 (3.93)	29.96 (4.38)	23.13 (3.25)

Note. * $p < .05$. Standard Deviations appear in parentheses after means.

Table 4.5

Correlation Matrix of Age, Years of Teaching and FFMQ Full-scale and Subscale Scores

Variable	1.	2.	3.	4.	5.	6.	7.	8.
1. Age	--							
2. Years Teaching	.83**	--						
3. Full-scale	.38**	.13	--					
4. Observing	.49**	.38**	.55**	--				
5. Describing	.19	.00	.75**	.18	--			
6. Acting with Awareness	.05	-.01	.52**	.08	.41**	--		
7. Non-judging of Inner Experience	.18	.01	.58**	.12	.20	.10	--	
8. Non-reactivity to Inner Experience	.19	-.03	.61**	.20	.29*	.10	.37*	--

Note. * $p < .05$, ** $p < .01$.

Levels of Case Study Teacher Mindfulness on FFMQ

Six teachers were asked to participate in semi-structured interviews and classroom observations. Each teacher was selected based upon each teacher's self-reported FFMQ scores, which, as a group, were statistically significantly higher than the means of the total participant means in Full-scale, Describing, Non-judging of Inner Experience, and Non-reactivity of Inner Experience. While Observing and Acting with Awareness means of the selected teachers were higher than the total teacher participant means, this difference was not statistically significant (see Table 4.6). Individual case study teacher subscale scores are compared with the overall sample means in Figure 4.1. This figure demonstrates the variability in each facet among the case study participants, yet each case study participant scored higher than the overall mean in Describing, or the use of words to describe thoughts, emotions, and behaviors.

Table 4.6

Means of Five Facet Mindfulness Questionnaire Scores of Total Sample and Case Study Participants

	n	Full Scale	Observing	Describing	Acting with Awareness	Nonjudging of Inner Experience	Nonreactivity of Inner Experience
Overall	48	139.06 (14.45)	29.60 (5.12)	28.75 (6.39)	28.88 (3.58)	29.25 (4.70)	22.58 (3.82)
Case Study Participants	6	157.67** (8.94)	31.83 (7.73)	37.17** (2.64)	29.67 (4.80)	32.83* (4.54)	26.17* (2.79)

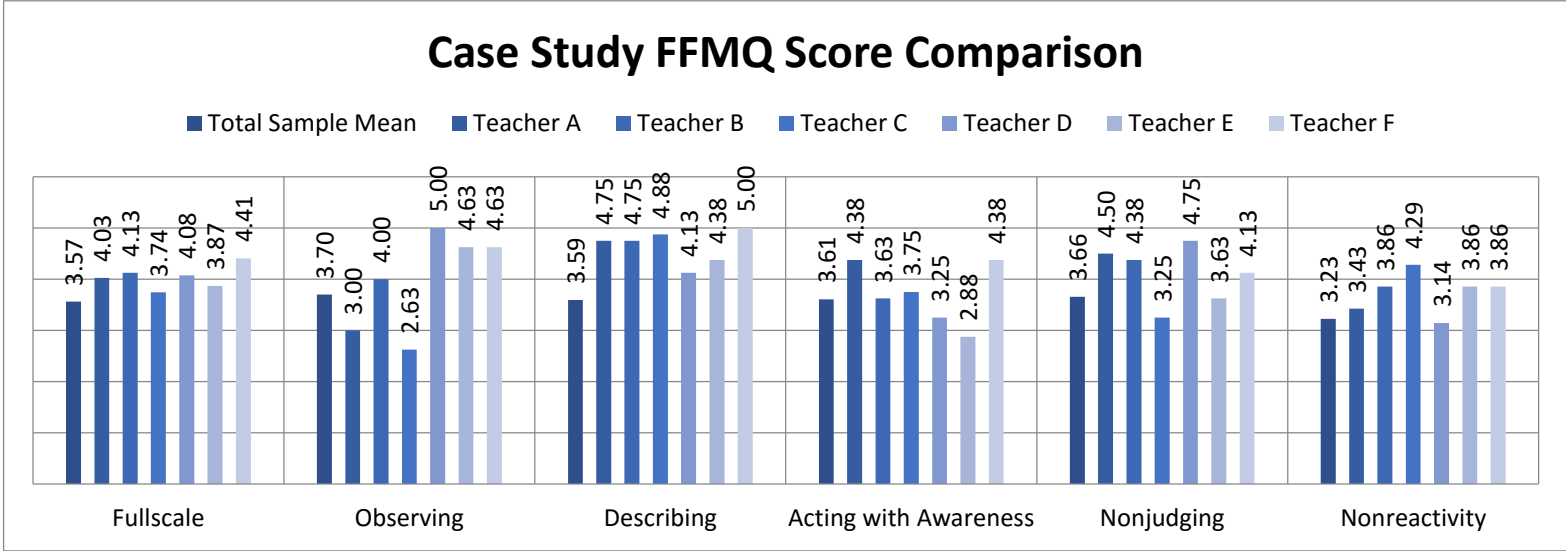Note. * $p < .05$, ** $p < .01$. Standard Deviations appear in parentheses after means.

Figure 4.1. Case study FFMQ score comparison to overall sample means

Note. Scores are adjusted for number of questions in each subscale.

Conceptualizations of Mindfulness, Identity, and Relationships

The case study teachers had strikingly similar approaches to the perception of the nature of intelligence, educational philosophy, and personal understanding of mindfulness. While none of these teachers reported having any formal training in mindfulness techniques or therapies, with the exception of participating in yoga class (their inclusion in these interviews were solely based on their FFMQ scores), they all were able to describe their thoughts, observations, reflections, and practices with little interviewer prompting. Classroom observations were conducted using the Language of RESPECT (Arwood, 2000) observation framework for authoritative versus authoritarian classrooms. Each heading below highlights the central theme to the mindful teachers' responses to each interview question.

Intelligence is functional. The perspective one has of innateness and capacity can influence the approach to potential for success. Teachers defined intelligence and talent to allow the researcher to understand their beliefs in their students' ability to achieve. Case study participants were first asked to define intelligence. While this is a term used frequently in education and general society, each teacher appeared to have difficulty providing an answer at first, as evidenced by a thoughtful pause or verbally expressed difficulty. Initial responses to this question included statements like Teacher A's "I don't know how to answer that question, because I've never, ever thought about it before," and Teacher D's "Good question, I don't know if I can give you an intelligent response," and Teacher D's and F's "that's a great question." After a few moments of gathering thoughts, several descriptors emerged among these mindful

teachers. Teacher B suggested that functioning skills of observation and recording

would provide baseline intelligence ratings. He also identified function skills of

curiosity and aesthetic evaluation as qualities of higher level intelligence, suggesting a

taxonomic approach to intelligence. Teacher C defined intelligence as three-pronged:

> The first would be *practical problem-solving ability*, like, in other words, challenge arises and unexpected, unforeseen and, the ability to navigate through that by, you know, thinking of new ideas or applying all of the things to the situations or that kind of stuff, which is, I guess sort of just being able to utilize, you know, whatever you already have and figure out what to do next when you have, when you thought about our plan for it.
>
> I think the second area would be about actually the *acquirement of…understandings, experiences, knowledge*, things like that. And so being able to actually, you know, go and capture that, retain it, and then, then use it, like, for example, in the first area would be like another area of intelligence.
>
> And then lastly, I think sort of the, the *creativity* piece, which is the ability to sort of call something that is not actually, so they didn't find it from somewhere else, and not necessarily practical or because of a challenge or an issue, it is just something you, you -- it comes to your mind -- but you can't really put your finger on where it came from particularly. I think people who have lots of these things are also very intelligent, too. I think the best, most intelligent people are the ones that are pretty good at all three of those things.
>
> Teacher D described intelligence with a 'multiple intelligences' approach,

reminiscent of Gardner (2011).

> I think intelligence has to do with understanding and cognition and I don't think intelligence is just analytical intelligence. I think intelligence can be emotional intelligence, intuitive intelligence…kinesthetic intelligence, but, a working definition would be the ability to learn and know and understand and comprehend the world.
>
> There was only one mention by Teacher A of a relationship between cognitive

ability and outcome, referencing personal success and holding a job. "Your ability to

succeed…in life, because it doesn't necessarily have to be academically. It would be

your cognitive ability to be a successful person, to hold a job…all of those things have

to go together."

There was also only one mention by Teacher E of the origination of

intelligence as being a combination of genetics and how it is applied. "I believe

intelligence is a combination of what you're given genetically and what you do with

it." This concept of application was also apparent in teacher F's definition of

intelligence:

> Intelligence…is about consciousness and processing and understanding, but, of
> course, when that's all wrapped up in one's own head, how do others know
> what or people know? So intelligence, which in my mind relates to, I think the
> capacity to absorb information, process, and synthesize is information, and
> then apply that information broadly, happens within the confines of one's mind
> or consciousness. And the application of that, though, is where the rubber
> meets the road. How do we know what people know?

Although there was some mention of capacity and ability, there were no

specific measurements of intelligence levels provided.

Most profoundly, Teacher B described intelligence as the "measure of how the

brain functions in response to things that the thinker is receiving." The classical

Western Psychology approach to cognition focuses on input-output and structure.

There was a brief mention of a "baseline rating" by Teacher B, but no mention of a

structural quantitative measurement. While these mindful teachers described

similarities to a structural taxonomy with gradation or levels, they were unable to

describe them objectively and instead described functionality.

Teacher preparation programs and professional development have long

focused on developing lesson plans to include multiple intelligences and Bloom's

Taxonomy for depth of cognition. These models came through in these teachers'

interviews to some extent, however, the overall focus of their answers were describing

functional skills within one's situated environment. Intelligence, as defined by a

mindful teacher, is a measure of *how*, the *process*, and *function*, rather than the "what"

or outcome.

Talent is a developing gift. Talent was more easily defined by the case study

teachers than intelligence, as evidenced by a quicker and more truncated response with

specific examples. It was commonly defined as a skill or natural ability. Every

teacher identified talent as innate, genetic, or a gift that a person has not earned.

However, each teacher shared that talent may be learned, fostered, or developed.

Teacher E's response encapsulated the overall theme:

> Talent, to me it has more of the potential - the idea of potential - what someone
> is, is given by birth and genetics. And, and then the talent…it's kind of like the
> raw material and then a person who has talent then they would decide how
> much to develop it.

Teachers provided several examples of how talent may manifest in people.

Music was referenced twice by Teachers A and E, explaining some people are more

adept at singing in tune with interpretation or may be able to hear a song and play it on

an instrument without practice. Teacher D also described an example of talent as

being able to make others laugh. Teacher B described a physical gift for athletics.

Teacher F described talent as the ability to "understand how mechanical things

function or being able to read the grain of wood and know how to process that into

furniture, or beautiful sculptures."

Talent is also situated within a culture and community. One who is talented

was described by Teacher B as "breaking away from the rest of the culture."

Therefore, society determines what is considered a gift and talents may be different

abilities or skills between cultures.

Education is the intersection of the individual and society. Understanding

the purpose of education from a teacher's perspective is essential to understanding the

motivation for teaching, and the purpose and reasoning for using specific pedagogical

techniques and relationship-building. Case study teachers were asked two primary

questions addressing their own personal philosophies of education: 1) What is the

purpose of education; and 2) What are desirable outcomes of education? By asking

these separately, the researcher can glean the educator's motivation for providing

students with education and what products they hope to see. The motivation for

educators is central to their drive and level of dedication to their work and how they

approach their professional interactions. Two primary concepts arose from the

question of educational purpose, the education of the individual (both extrinsic and

intrinsic values) and the education of our future society.

The purpose of education was described concretely as the need to expand a

student's knowledge, experiences, and understanding, to provide tools for students to

be successful in college and career as defined by the adult, and to provide guidance for

a student's own forward direction. Teacher A focused on the more practical

importance of an education:

> So I think that the purpose of education is to expand a student's knowledge
> base and to give them the tools that they need to be successful within the
> world, no matter what they choose to do. So that could mean that you're
> teaching to kids who are going to go straight into the work force or teaching to

kids who are going to go to college. And I think that it's a job of an educator to be able to prepare all of those kids for both.

These appear to have an extrinsic value to the larger society in terms of preparation for participation within a culture and community. In contrast, there was also emphasis on students becoming enlightened or "to be out of ignorance." Teacher B shared:

> To be educated is to be out of ignorance. So that would include things around critical thinking. So if kids don't understand something, our job is to have them understand something and that the adults who would decide what are the important things for them to understand. That goes the same with skill, too. I think the adults in the world decide here is a skill that is important for you to have and we build policies around that.

> So I think it's all about removing ignorance and enlightening them. So I guess the kids will come out of that process equipped with less ignorance. And we all start ignorance, babies literally start in darkness.

These attributes were described as allowing students to engage in inquiry and become lifelong learners through their participation in a community of learners. By participating in this type of community, students may develop and be recognized for their talent (previously defined as being relative to the culture) and may share new ideas and products through thinking, speaking, listening, and writing in a lower risk environment.

Each teacher spoke to how education of the individual and society are related. They viewed education as a chance for established society to share and present current knowledge to students, allowing for future generations to expand and develop those ideas. Education is to help students develop into productive and functional citizens through their socialization. Teacher E answered, "One of them [purposes] is to inform

the student of culture, the native culture, and also to socialize students in the sense of being able to fit into society and to be able to effectively function in a society." Teacher D answered, "The purpose of education is to learn and to interact, because… education and learning is a [sic] social construct. It happens socially, not just individually."

While all teachers focused on the development of the holistic learner within the larger society (i.e. "to learn how to learn is the purpose of education"), Teacher D also identified the conflict they experience within their own personal philosophy of education and the current educational model:

> I do think there's a lot of indoctrination… with Smarter Balanced and standardized testing and this sort of pressure. There is a conflict between sort of the heart of culturally relevant pedagogy and the practices that we're trying to instill as a district and what we're doing to get students to not just close the achievement gap, but how we're sort of moving students along. Sort of a factory model - one size fits all.

This quote shows a reflective discord between a teacher's individual purpose and view of the importance of education and the systemic pressures of programmatic compliance and educational policy.

Desirable educational outcomes are not solely academic. Four primary themes were identified in what the case study teachers viewed as the desirable outcomes of education: (a) specific skills/literacy; (b) student's personal fulfillment; (c) success in navigating the world; and (d) contribution to society (see Table 4.7).

Table 4.7

Teacher-Identified Desirable Educational Outcomes

Specific Skills/ Literacy	"We believe they need to have mathematic skills. They need to have lab skills for science. They need to know how to write and read." (Teacher B) "You're going to take this next math class if you continue on your education, so we're going to make sure that you understand what you need to do now for this part so you can use it next when you go forward." (Teacher C) "My students will leave with a better understanding of the subject matter, whatever that subject is." (Teacher F) "To give them the skills and to develop the skills that they need to follow whatever pursuit they determine is their own." (Teacher E)
Student's Personal Fulfillment	"I would like to see my students be successful both in and out of school, no matter what they choose to do with their lives." (Teacher A) "You have a chance to sort of actually get good at something. So you can walk out of your educational experience being prepared to actually go and do something that then could be recognized and possibly believed." (Teacher C) "Have an understanding of self enough to know that the student can then pursue what it is they want to do, whether it is educational or work. And to find those interests in life that will make them happy, not just work." (Teacher D)
Success in Navigating the World	"I would like to see my students be successful both in and out of school, no matter what they choose to do with their lives. To be able to navigate through this world." (Teacher A) "To know how to work with other people. Being okay with disagreeing, but being able to listen and learn. They can understand and know that within our society, education does create options and it creates social mobility and to have that choice to navigate within that system." (Teacher D) "So now as they propel themselves into adulthood and have other issues to vote on, to consider, especially with Americans and democracy, they are more informed to make decisions." (Teacher B)
Contribution to Society	"We want students to be able to function effectively in our society as citizens, as productive members of society – as critical thinkers in our society." (Teacher E) "They are able to package their ideas appropriately for their target audience and communicate their ideas in a way that they are taken seriously by the world, their future partners, family members, employers and other educators." (Teacher F)

Specific skills included many of the traditional outcomes as measured through summative assessments and standardized testing, such as literacy in math, reading, writing, and laboratory/science skills. These can be summarized as an understanding of subject matter. However, this was just a small part of the desirable outcomes in comparison with the other identified "soft skills." The case study teachers want their students to become effective communicators, critical thinkers, questioners, flexible, reflective, open to new ideas, risk-takers, and be able to see multiple perspectives.

A student's own personal fulfillment was a desirable outcome of education. To be a lifelong learner and gain the desire to continue pursuing knowledge (not just formal education) on their own, are valued. These case study teachers want students to understand themselves, feel good about themselves, and to live with a sense of pride in oneself.

Another desirable outcome of education is the student's ability to successfully navigate the world. The students should gain experience and knowledge about logical consequences, both academic, such as learning about prerequisites for coursework and choices made towards graduation, and socio-political, such as the repercussions of marrying outside of your social class and the American democratic process. Teachers also want students to know their educational options, recognizing that our current society places a high value on higher education providing social mobility. Students should also gain experiences and knowledge about what financial options exist for them. This includes learning about how to support oneself financially and what steps need to be taken to reach those goals.

Finally, the case study teachers want students to be contributors to society. Being recognized, believed, and productive within the larger community is valued. This is seen as the more broad application of knowledge, skills, and talent that is learned by the student and situated within the culture. This contribution allows students to continue to share their ideas and knowledge in a social context post formal schooling, which facilitates one's pursuit of lifelong learning.

Teachers are an expert, mentor, and model. Within every relationship lies two individuals who communicate. Establishing the roles and responsibilities of each of those two people forms the basis for healthy communication. The teachers' perception of roles and responsibilities is paramount to understanding the development and level of attachment that exists in a teacher-student relationship. The case study teachers shared their expectations for each member's role within the teacher-student relationship. The concept of teachers as experts consisted of three aspects: (a) knowledge/competence of subject matter; (b) ability to scaffold/assess skill development; and (c) ability to translate concepts. Teachers recognized the importance of being experts in and being passionate about their area of content. Teacher B shared, "The teacher needs to be the expert in the room and that teacher needs to be passionate about what they teach." Teacher C also shared "I'm also an expert enough in this subject that I can specifically teach you the things you should know or help you with the skills you need to develop." Teacher F recognized her "job as an educator is to continue to teach myself to not be static in my own understanding. I mean, I need to be a teacher-researcher always."

Rather than being adult-directed, a thoughtful classroom consists of class members that are equally respected and valued. While some classrooms included more teacher-directed activities, several of the classes were student-driven through presentations and self-selected research. Among those teacher-directed classes, however, the teacher played more of the role of facilitator, asking more critical-thinking questions of the students to guide them through their comprehension of the material. Multiple modes of presenting and investigating information were presented including video clips, doing a jigsaw activity moving around the classroom, researching speeches and videos using technology, and solving problems collaboratively. The traditional 'sit and get' style of direct instruction was not observed in any of the six classrooms.

This subject knowledge also facilitates their ability to make the content relevant to their students. They also viewed their role as being the expert in skill development. "My job as an educator is to provide enough feedback on student work so that they know what they're doing well and what they need to improve on" (Teacher F). "To recognize how students learn so that you can build a relationship to help them reach a level of success, whatever that means for each individual kid." (Teacher A). Many teachers discussed providing students with multiple opportunities to demonstrate proficiency of specific learning targets and understanding the varied backgrounds of students well enough to design appropriately challenging lessons and assessments. Thirdly, the expert teacher is the translator of concepts using a variety of

strategies such as visual diagrams and providing students with precise language to allow them to effectively communicate ideas and develop conceptual understanding.

Validated communication is key in a classroom with communicative thoughtfulness. This can also be related to the power differential that exists in the classroom setting. If the adult in the room is determining the appropriate time and way to communicate, students may be less willing to participate and/or student misbehaviors may be more apparent. While setting and clarifying expectations for appropriate behaviors is important, it should allow for students to communicate freely yet with respect. All teachers in the case study groups demonstrated respectful interactions with students and valued their questions and participation. Student ideas were written on the board in Teacher D's classroom, multiple students came up to solve problems for the class in Teacher E's classroom, and student questions were thoughtful and reflective in Teacher B's classroom.

The case study teachers also saw themselves as fulfilling a mentor role. They recognized their experiences and expertise have value that should be shared with students. The "been there, done that" reflection allows them to see how they may guide and advise students as they navigate their education and life. "I've already kind of been on down the path you're on and I've come back to where you are at and we're going to go through parts of this together because I have been through it a little bit." (Teacher C). They also believe in providing ongoing and explicit feedback in their mentor role.

As a model, they feel the ethical and legal obligation to be upstanding citizens,

demonstrate to students how they set boundaries modeling healthy life balance and expectations, and to show students how to treat others with respect. Also modeled is the teacher's own passion for their profession. Aside from being a content area expert, the case study teachers make visible to students their professional engagement and development, involvement with other educators, and reflection on their own teaching practice by being teacher-researchers. Through these activities, they model lifelong learning, a desirable outcome of education in their opinion.

By fulfilling these three roles as expert, mentor, and model, teachers are able to fulfill their primary identified responsibility of building relationships with students. The case study teachers believe that within this relationship, students should feel safe ("establish a classroom community where students feel safe" (Teacher E), respected, confident, and "able to explore ideas freely without prejudice of any kind" (Teacher F). They also hope to "ensure a learning environment where students recognize that they don't learn in isolation, and that...the best things in the world happen when people work together" (Teacher F).

Care + kindness + respect = the mindful classroom. Specific strategies for establishing environment and building relationships were suggested by the teachers framed by their perceived responsibilities of providing a safe and respectful environment. The building of a relationship between teacher and student requires multiple levels of explicit and inferential knowledge and techniques. The case study teachers employ many different strategies to be as successful as possible to provide an environment where students can reach their potential.

The classroom environment is both physical and interpersonal. To address the physical environment, one teacher's classroom space is designed where the teacher is not in a visible position of power (i.e. teaching positon as the center of class attention) to prevent an authoritarian approach to classroom management. Several teachers described the importance of placing student work on the wall and honoring students within the lesson by using examples or pictures representing the student's interests and culture. "Their cultures are honored through, it could be something from, again a PowerPoint where I use an image of them or something from their culture to curriculum that speaks to them" (Teacher D). "Student work often goes up on the wall" (Teacher F). "I might focus on this part of a lesson more in period two because I have kids who are going to respond to that in a way that period one won't. They won't really care about that angle much." (Teacher C). Cleanliness of the room, effective use of lighting and space, and use of music in the classroom were also described as ways to establish their classroom environment.

Teachers described the importance of getting to know each of their students, their interests, and their motivations. Being available to students for one-on-one time is one strategy to accomplish this need. By having these discussions with students, the teacher can look for commonalities as a starting point for building a relationship. Allowing students to write provides another opportunity for teachers to gain insight into student experiences that are impacting their worlds, such as parents, divorces, deaths, celebrations, new babies, etc. Keeping the lines of communication open with families also provides teachers with information that can be useful in developing a

relationship with students. This also allows teachers to develop their role as a supportive mentor, in which they can work to empower students to take ownership of their learning.

When a class has an internal value and group attachment, an identity is formed that is shared by the class. This results in more proactive student learning and supportive responsiveness of the group (Arwood, 2000). Of the six elements observed, this was the one area that was more varied amongst the classrooms. While several of the classes utilized student pairing and collaboration, two were more individually driven. This variation may be related to the nature of the lesson being presented during the observation, a difference in pedagogical practice, or evidence that group identity is inconsistent among teachers who identify as highly mindful. While interactions between teacher and students and between students were observed to be respectful and attentive and engaged in the activities at-hand, it was not readily apparent if the students felt a sense of group attachment, as evidenced by positive student-student interactions, sense of responsibility to the larger group for completion of lesson outcomes, or collaborative problem-solving. This appears to be an area for growth in each classroom.

Within the classroom setting, community-building activities, such as class introductions at the beginning of the year or those that are embedded within curriculum throughout the year including cooperative learning in student teams, are strategies for establishing a supportive environment in which students can take risks. Each of these activities allow teachers to model and students to practice the teacher's

expectations for appropriate interactions in and out of the classroom. Such

expectations identified by teachers include treating others with kindness and no

shame, being present with each other, demonstrating a high level of etiquette, and the

use of respectful speech. Teachers also remarked that by using self-deprecating humor

and showing care and support for students, students can begin to see teachers as

human, rather than simply an authority figure. By establishing these parameters,

students thus begin to form a class identity and feel accountability towards one

another. This, in turn, reduces power struggles that may occur in typical authoritarian

settings, which can be disruptive, and encourages students to remain engaged in the

classroom activities. "I try to be consistent and I think the students just know I'm

pretty real with them. Then there are times to establish firmness. So, I think

occasional authoritative foot down, but I try not to do that" (Teacher D). "There

shouldn't be a front of the classroom. So in terms of the power structure, while I am

kind of the benevolent dictator, it's kind of a democracy. I'm not the keeper of the

knowledge so there shouldn't be a physical environment where I am in a position of

power and the students are in a subservient position" (Teacher F).

In all but one observation, there was evidence that power is freely shared in the

classroom and all behavior, even that which may be considered disruptive to some, is

viewed as a contribution. This contrasts the concept of power being controlled with

rules preset and disciplined by the adult. Power was most easily observed in the

descriptions of student and teacher behavior. Students in Teacher A's class were

actively giving presentation, and taking notes on their peers' presentations. The

teacher was also taking notes in the back of the room and recapped key points. She also commented how well the students covered the important points from their topic. In Teacher B's classroom, all students were quiet and watching the teacher. A student asked a clarifying question and subsequent follow-up student questions demonstrated formal thinking regarding context. The teacher was explicit in saying "all students are valuable in my classroom." While the teacher was the focal point of the classroom at this time, as the lesson progressed, the teacher moved away from this location during student worktime. Teacher D was very animated in her speech and interacted with students throughout the activity. In her class, she stated "part of wisdom is sharing and respect." Teacher E commented to his classroom, "You guys are thinking in different ways, that's excellent," and "It doesn't matter which way you are conceptualizing. You can get the same answer." Students in Teacher F's classroom were provided with instructions to take their seats at the beginning of class with a polite request. "Good morning, lovely people. Please have a seat over here. I would love that so much." When cell phones started to become a distraction, she addressed the issue from a problem-solving perspective, rather than a power position. "This is it. Last call. If I see the phone, I'm going to take it. If you just can't help it, I can hold it for you now."

Teachers recognize the importance of honoring the students by having a plan and sharing a clear objective with students to ensure they understand the relevance of the lesson. This requires mindful planning on the part of the teacher, but also requires them to remain attuned to the classroom during the lesson to be flexible enough to take

advantage of teachable moments and student needs.

Two areas of challenge were also mentioned in response to building teacher-student relationships. One was a concern that teachers need to work at how to handle confrontation and still leave room for grace. Particularly in difficult conversations, teachers struggle with how to let a student walk away with dignity and an opportunity for growth when these types of situations arise. Teacher F recognized the difficulty she experiences in the sheer volume of relationships they must develop:

> If you think about the number of relationships that we have to have [as teachers], that is, I think, one of the most demoralizing aspects when thinking about my ability to be successful for my students. It is impossible for me to really, with the volume of students that we have, to have those individual relationships be as excellent as they should be to meet all of their needs.

The overarching theme in responses by teachers regarding the building of relationships is the classroom, and all of its elements, must be built on mindfulness - mindfulness of space, mindfulness of individual student needs, mindfulness of effective planning and flexibility, and presence to each other as humans.

Mindfulness is a shift of perspective. As mindfulness has been difficult for researchers to define with agreement, learning how teachers who self-report as 'mindful' define mindfulness yields another perspective that is grounded in experience within education. The concepts of awareness and presence were woven throughout each mindful teacher's definition of mindfulness. Awareness was described as remaining cognizant of yourself, mind and body, the environment in which you are present physically and emotionally, and your own reactions to both self and the environment. Teacher A defined mindfulness as "paying attention to where you are as

a person." Teacher E described mindfulness as "awareness of your surroundings, what's going on around you. Awareness of yourself. Just being in the moment in terms of all your senses and your reactions to it and how you're dealing with things in the moment." Teacher D defined mindfulness as "being present in the moment and being aware and listening" and "being mindful of what you do and how that impacts other people."

Presence is also the ability to be present to options, in the moment, both within one's own consciousness and options in one's environmental setting. These options require a mindful teacher to remain flexible, particularly within a classroom setting. The quality of "being open to blowing up your own script" (Teacher B) is related to letting go of preconceived ideas. Recognizing that the best intentions may not be the most appropriate in a specific time or event and being okay with that are examples of being mindful. However, it was noted that this flexibility must exist within a framework of value and purpose to remain effective.

Teachers identified mindfulness as requiring inner stillness, listening, cognition, and self-reflection. The action of being mindful is the shift of perspective from "reacting to things that come at you to pausing, processing what's just come at you, and then you are taking action as opposed to reaction" (Teacher F). By practicing mindfulness, one can perform at a higher level and be more engaged and productive. Interesting to note that meditation was only mentioned once by a single teacher. The statement "mindfulness is meditation in one context," implies that mindfulness is in fact, multifaceted.

Mindset of mindfulness is nature and nurture. When asked if mindfulness is a trait that can be cultivated or is inherent, 100% of teachers strongly agreed that it can be cultivated within oneself and can be cultivated within their students. The cultivation of mindfulness is thought to require desire, will, and hard work. Five out the six, however, also spoke to some people having a proclivity or natural tendency to possess more mindful attributes as a baseline for further development.

> I definitely believe it can be cultivated and I'm really working hard to try to cultivate it because I -- and, you know, I think it's inherent in some people. I think again, our brains are wired differently. And some people are external, some people are internal, some people lack awareness of their actions or other people's actions and some people don't, and I think some of that has to do with how you are raised and I think some of it has to do with how you're wired. But I think our brains are pliable and adaptable and, and neuroplasticity fascinates me, and I think we can cultivate it, but it might not always be easy. We can cultivate it in our students as well.

Mindfulness is a concept that can be taught and learned, according to these teachers. One teacher's caveat was that it is learned with proper training and can be taught, however, it may be difficult for younger children to see its importance. Teacher B discussed people "finding mechanisms" suggesting that there are multiple ways to develop mindfulness. This same teacher, however, described the strategy for developing mindfulness as the same as all learned behaviors - through repetition. Despite the heavy use of constructivist and social learning philosophies described in earlier interview questions, this demonstrates that the teacher's approach to learning mindfulness is still firmly rooted in a behaviorist model.

Yet another observation was that with age comes a more even temper. "I think it can be taught. I just think it's hard with younger kids for them to really be able to

understand the importance of it" (Teacher A). "I guess, I feel like, and maybe it just comes with age, too" (Teacher B). This thought suggests that mindfulness may simply be a product of age that happens organically through life experience, rather than intentional training.

Although all of the teachers believe that mindfulness is cultivated and may constantly be in flux depending on the age, training, desire, and will, only one teacher discussed how one can see the development of mindfulness. Within a specific time period, such as a sports season or a school year, people who are observing others may see greater engagement in what is happening in the present moment and "not thinking about other things before going onto something else." This was the only suggestion of a sort of mindfulness assessment – purely subjective and observational.

Many roads lead to mindfulness. As all of the teachers believed that mindfulness can be cultivated, they all had many ideas for strategies to develop mindfulness. While some of the proposed strategies were more general in nature, others were specific to within the classroom setting and in the teaching profession (see Table 4.8).

Table 4.8

Strategies for Developing Mindfulness from Mindful Teachers

General Strategies	Classroom Strategies	Professional Strategies
- Life experience - Massage - Meditation - Breathing - Stillness - Mantra - Exercise (e.g. walks, yoga) - Sit and be present "Slow speed dating" - Incentivize - Relevance - Disincentivize - Remove distractions	- Socratic Seminars - Use of protocols - Practice listening - Teacher - Student - Explicitly teach: - Know what mindfulness is - Know barriers that prevent desired level of mindfulness - Make a plan - Practice/Execute the plan	- Professional Learning Communities (PLC) - Observe other teachers' lessons - Remain open to feedback - Self-preservation

The most intriguing strategies that can be applied to the general public and students that were suggested by these teachers included descriptions of how to "sit and be present," incentivize and disincentivize mindfulness, and the use of protocols in classroom discussions.

One approach to "sit and be present" (Teacher B) was simply to set aside time every day with a person, removed from other life activities, and simply share space for five minutes. This allows a person to "just be." A further developed use of this approach was referred to as a "slow speed dating" (Teacher B). Within a large school setting, this could mean that two teachers who rarely interact due to their classroom locations, offset planning time, size of the faculty, etc. could be assigned to one another to share 20 minutes of their time together. This time would not have an

inquiry of learning or directed question or topic or formalized agenda. It would just be a time for people unfamiliar with each other to just be together.

While hearing the terminology "incentivize" and "disincentivize" typically ring of behaviorism, the explanation of these terms in relation to mindfulness bear a different connotation. Incentivizing was described by Teacher C as "bringing someone's attention back to what is happening in front of them as opposed to letting their mind wander off." This is more closely related to providing a person with meaningful and relevant information that engages them, rather than provide an extrinsic reward. Disincentivize was described as removing distractions, which are typically those behaviors or objects that are meaningful to the person in the moment. A distraction is simply the object which is perceived to be the cause of inattention based on the behavior of another person. The person who is believed to be inattentive is actually finding meaning or relevancy in that so-called distraction. By substituting the perceived distraction with additional meaningful information – or *incentivizing mindfulness* – mindful behaviors are then more likely to be exhibited.

In environments of effective communicative thoughtfulness, learning is seen as intrinsic, rather than tasks and behaviors being externally rewarded, such as use of a token system or earned privileges. While it can be difficult to determine the level to which a student views learning as intrinsic or extrinsic, externally rewarding behaviors can be easily observed if present. Students were attentive and actively participating in every class observed. In Teacher D's classroom, class-made posters were on the wall with questions such as "Why do you value education?" and "Why is

education/learning important?" The only classroom that utilized a strategy that could

be interpreted as an extrinsic reward (possibly a grade) was in Teacher C's classroom.

Students were asked to turn in their reflection from a movie they had just watched as

an exit ticket as they left the classroom. It is possible that this exit ticket may have

been used simply as a formative assessment or check for understanding. A student

who was still writing the reflection during passing period after class had ended was

told he could turn it in during the next class if he needed more time, indicating that

even if it were for a grade, it could be late without penalty.

Another strategy for developing mindfulness in the classroom setting

suggested by the case study participants was the use of protocols. Protocols are a

technique that provide a framework to interactions within a social setting. Within a

classroom, protocols during discussions can be useful in that the structure and modus

operandi for desired interactions and behavior is explicit. By a classroom sharing in

these protocols, the mindful teacher feels that it lifts up the community and, therefore,

allows for deeper and richer thinking and discussions.

In order to make the teaching profession more collegial and collaborative,

mindful teachers also recognize the power of participating in Professional Learning

Communities (PLC). "You work in isolation. You work in a box. Literally."

(Teacher B). Teachers recognize that their profession is isolating. "Every time we get

together as colleagues we become way better. All of these small learning

communities. Like the directiveness and the work and seeing the talent and sharing

practice" (Teacher B). It is through this work they gain appreciation of others' work

and continue their own meaningful and practical learning. It may be through these PLCs or in some other professional development structure that mindful teachers value the opportunity to observe other teachers' lessons. This allows them to change their role from teacher to learner/observer and get out of their everyday patterns to truly see the classroom. This opportunity also allows them to be cognizant of "loaded language" and understand the function and evoked emotions that results in the use of language. This was described by Teacher F as the cultural or socially implied meaning of language that is used in communication. "Our existing media landscape, particularly, uses the language of war and violence. We describe things with language that is, in itself, connoting aggression and conflict and violence in our descriptors" (Teacher F). By becoming an observer, a teacher can become more culturally competent through their reflection of interactions with students and other adults.

This ability to reflect was also described in the importance of remaining open to feedback from various sources. Reflection, referred to as "the benevolent mirror" by Teacher F, allows teachers to see themselves through various lenses and multiple perspectives. Feedback is also an essential part of community-building. By allowing another to offer feedback, teachers open themselves to information about their practice, demeanor, and interactions and can make conscious decisions regarding each of these aspects of their teaching. "People have to get out of their prescribed role to have a certain mode. You're learning about being present by having a different role" (Teacher B).

Finally, self-preservation is essential to being a mindful teacher. All teachers in this study mentioned some form of internal reflection, such as quiet thinking, stillness, or listening. Some do these activities in the context of a massage or bodywork ("I also get massages a lot, and I find that is a place where I can really meditate. And it helps me to stay aware of what's going on physically with my body, for sure, but also mentally," Teacher A), yoga ("the closest thing to developing mindfulness for me was taking a yoga class," Teacher E), or simply taking a walk to recognize and be aware of their thoughts and bodies ("Taking walks. Daily practice, whether it is just sitting and breathing or doing yoga or, again, taking a walk," Teacher D). Teachers identified that they work within an "incredibly busy overly scheduled world" that requires a "retreat from all of the have-tos" (Teacher F). These activities allow the teachers to make conscious decisions in their best interest for physical and mental health. One example of professional stress was the large amount of assignments that teachers are expected to grade. To reduce stress associated with this expectation, one teacher suggests occasionally being intentional in deciding to create space from work and home by not taking home papers and having a hot bath. Describing the importance of preserving oneself, the teacher commented, "What happens when you are exhausted from a physical perspective and then when you are depleted, you lack compassion. Your capacity for empathy is diminished" (Teacher F). By doing activities that rejuvenate the body and spirit, teachers can be more present and active and compassionate in their professional capacity.

Formal training is not essential to developing and practicing mindfulness.

Only Teacher A overtly mentioned meditation, by name, in a formal setting embedded within a yoga class. Three others (Teachers D, E, and F) described their mindfulness experiences in yoga, however, their description of the class was focused more on body awareness and physicality through the poses, stretching, and movement. Teacher F explained that some of the best yoga instructors allow the participant, through their verbal cues, to notice particular parts of one's body, posture, tension, and strain. Exercise was referenced several times in describing meditative or mindful experiences, including backpacking, bicycling, and the use of yoga as exercise.

Teacher B was very clear in expressing that he has never meditated and does not have a system for being in-tune with his body and thinking at the same time. Rather, the teacher carries a journal wherever he goes and takes every opportunity to write down thoughts. Teacher C described experiencing visualization and mental rehearsal exercises in an athletic setting, but was unsure if that could be considered mindful as it was focused on imagining the future, rather than being in the present moment. The same teacher explained their mindfulness experiences as a lot of thinking – about different situations, how they want to behave and act when those situations arise.

The common theme throughout each teacher's description of their experiences with mindfulness was the intention to be aware. This included awareness of breath, body, self, thoughts, and environment. It was also mentioned that awareness of kindness to oneself helps maintain ones' relationships with others in the world and

improves mental health. While formal training may provide individuals with a framework in which to learn strategies for achieving awareness, teachers who identified as the most mindful in the overall teacher sample possess trait mindfulness characteristics without participating in any particular intervention or formal training.

Mindfulness is both energizing and calming. Overwhelmingly, all teachers described their mindfulness experiences as positive. They described the effects of participating in various mindful activities as being relaxing, calming, and blissful, yet refreshed and energized. Teacher C described the feeling of his heart rate going down and clarity of thought:

> It sorts of clears things out a little bit and makes me able to have more quietness in my head. One of my big things is I'll start to have too many things happening in my own head in addition to what is going on around me and then I sort of get ramped up rather than staying where I want to be.

Teacher E shared:

> I feel more connected to the world and to things. I feel more alive. I am more in the moment than I was – more fully experiencing what was going on not only with myself, within myself, but also around and the rest of the world.

The sense and urgency of time also appears to dissipate. Teacher B described this phenomenon:

> Being fully present is something, where the time is just flying by and you lose track of time. Like when you have given over yourself to the moment and it is just gone. Then you know you have been completely present, and an hour and a half has gone by. And my students understand this, too.

These reports show that there are neurological and physiological effects during times of mindfulness that reduce heart rate, stress levels, and promote processing and integration of stimuli, and impact time as a linear construct.

Language frames thought and names perceptions. Internal voice plays a significant role in mindfulness experiences and guiding actions. Teacher A described her own yoga practice and her use of language:

> It was definitely internal voice and really thinking about each piece of my body relaxing and working through that, especially when we did the super-intense mediations. The language piece is essential for me to get to a mindful spot to where I can keep going forward.

Teacher D described the use of language in her internal describing of the world around her: "I might just be more observing in the moment, like, 'Oh, these trees are beautiful and, oh, I'm tired right now. How many more miles do I have to go? Or, the water's refreshing." Teacher E spoke about the purpose of his internal voice: "The self-conversation helps to focus and reinforce what I want to do." The common theme that emerged is that language exists both within our minds and externally through communication with others. Teacher F suggested that the internal voice is more imprecise and that mindfulness is important to effective communication.

> Language is everything. Words – spoken and written words are how we convey to others our thinking and sometimes ourselves if we're thinking in our own head. But I think the internal thoughts are more nebulous. The imagination, the imagined perceptions are very real in our consciousness. But when we want to describe or convey or communicate those to other people, we have to formulate them into words (Teacher F).

Teachers' responses to the role of language in guiding their thoughts and actions show that a faculty of language and conceptual understanding plays a significant role in their well-being and sense of self within the world and within relationships. This leads one to believe that well-developed formal language is essential for practicing mindfulness.

Mindful teaching is planning, awareness, and flexibility. Mindfulness as a construct may be seen as independent from one's profession. Teachers responded to if or how their mindfulness plays a role in their approach to teaching or their classroom. Mindfulness is perceived to impact the classroom along a spectrum from not at all to always being aware and reflective in the classroom and with student interactions. Teacher A viewed mindfulness as a construct that one would need to intentionally incorporate into the classroom setting.

> I don't know that I necessarily bring that in for my students all the time – or ever, really. When I'm thinking back to that success piece, I think, yes, mindfulness could be one of them. But I wouldn't know how to incorporate that into the things that I do – or maybe I do and I don't know it (Teacher A).

The fact that this teacher who self-reported high on the mindfulness questionnaire is unsure whether she brings mindfulness into her work setting shows that mindfulness may simply be a way of being for some, rather than a technique that necessitates practice for implementation. While some may need to be intentional in their thoughts and actions pertaining to mindfulness, others may embody mindfulness without naming it.

Mindfulness in the classroom is also seen by the case study teachers as the giving into teachable moments that were not part of the original plan. "The teaching world is very structured. You have time, bells, clocks, tasks to do. You need to honor their [students'] time. But how do you give into moments?" (Teacher B) "It's being able to be present in the moment. It starts with noticing what is happening and then having the flexibility. Sort of like, is there some options I might have here to change what I'm doing? (Teacher C). "It can inform what I need to do from moment-to-

moment in my teaching (Teacher E). Each of these statements describe the flexibility

to observe the classroom and select appropriate options or take advantage of

opportunities that may not have been planned or expected.

Teacher F also described mindfulness has playing a role in her classroom

physical environment and curriculum.

> I make space in my class periods for students to take breaks, to stand up and
> move their bodies, to walk. [It also informs] the type of assignments that I
> create and the many choices within them. I have more flexibility over the
> subject matter of the curriculum. I think it informs what I'm asking the
> students to study and think about it.

In 5 of the 6 classrooms observed, student choice was observed in classroom

activities and student behavior, rather than choices being controlled by the teacher.

Teacher A's students presented posters on historical figures that included their

philosophies and the students' take-aways. During the presentations, students

explained why they had made the choice to compare their historical figure with

another of their choosing. Students in Teacher B's classroom were provided with a

bulleted handout with instructions for a written project and presentation. Within these

parameters, students searched online, in books, or on their cell phones for a speech of

their choosing that they were to examine. Teacher D's classroom activity allowed

students to actively walk around the classroom reading snippets of a story that they

would then share with other classmates to reconstruct the story collaboratively.

Students were allowed to select where in the room they went to read and then

explained their selection in their own words to a partner. In Teacher E's classroom,

students discussed how they were solving word problems on the board. Several

students came up to the board and demonstrated multiple approaches to solving the

problems, demonstrating their ability to choose multiple methods. Students in Teacher

F's classroom discussed the anatomy and language of a film clip as a model for the

follow-up activity. They were then allowed to go to the computer lab to find their own

clip. Teacher C's classroom was the only one observed that did not show evidence of

student choice during that particular class activity.

While having flexibility in curriculum allows for more teacher freedom to

mindfully design activities, the current structure of a comprehensive high school is not

believed to be conducive to students developing into more mindful people.

> I love the idea of more recognition of awareness and mindfulness and
> empowerment for students to take control of their own education in a way that
> is meaningful for them, but the paradigm is still built on a social structure that
> is antithetical to the goal.

This concern begs further consideration for the future of school reform and the

use of mindfulness intervention programs.

Mindful teachers are also mindful of their personal learning styles. Five

of the six teachers were very clear that they considered themselves visual learners.

- "For me to fully comprehend something, I have to hear it and then
  write it directly down on paper." (Teacher A)

- "It's not the words, it's the pictures by far. I have to see it to do it."
  (Teacher B)

- "If I were to explain it to you, I would use words. But I think what
  comes up to me is not words. That's images." (Teacher D)

- In reference to practicing yoga: "I think probably more of watching them to get the modeling-type of learning." (Teacher E)

- "It wasn't until I had taken my understanding and made it visual for me…that I was able to understand it." (Teacher F)

Only Teacher C described his learning style as auditory:

I think if I see a lot of visual stuff, I try to translate it into verbal. It is like one of the things that I'm horrible at is people who try to diagram on boards. I look at that and go 'I have no idea what the X really did after the first movement of the pen – I lost it. But if you say, 'You're going to do this, and then this is going to happen,' I'm fine.

Teachers who are more aware of their own learning styles may be more aware of the learning styles of their students. This allows for greater differentiation within the classroom and more opportunities for students to access the information from multiple points.

Summary

Each research question of this study was addressed in this chapter with significant findings from Five Facet Mindfulness Questionnaire scores, case study teacher interviews, and classroom observations. High school teachers who participated in this survey mostly agreed with statements on the FFMQ, with the highest scores in Observing (M = 3.70, SD = 0.64) and Non-judging of Inner Experience (M = 3.66, SD = 0.59). There was a statistically significant difference in means between white and underrepresented minorities, indicating that underrepresented minorities score significantly lower in Non-judging of inner

experience. A significantly lower score in Describing was found in STEAM teachers compared with Humanities teachers.

The case study participants scored significantly higher than the overall sample in the majority of subscales, suggesting they self-report as having higher trait mindfulness than the rest of the participants. Throughout their interviews, common themes emerged with regards to their definitions of intelligence, talent, purpose of education, role of the teacher in teacher-student relationships, and understanding of mindfulness. While they all had different personal experiences in mindfulness practices, they each described experiencing similar psychological, neurological, and physiological effects of mindfulness. From observations, these teachers' classrooms also represent shared qualities of student choice, shared power, intrinsically-rewarded learning, and respected communication. A further discussion of implications of these findings will be discussed in Chapter 5.

CHAPTER 5

Discussion

This chapter will discuss the comparison of teacher self-report measurements of mindfulness with other similar participant samples, disaggregated teacher data, and "highly mindful" teachers' conceptualizations of mindfulness, identity, and teacher-student relationships. Recognizing that mindfulness can be defined as a trait allows a closer look at teachers who may already be exhibiting high levels of social emotional competencies and a better understanding of how their own beliefs and experiences may influence the classroom environment. The findings of the current study in relation to other studies investigating the use of the Five Facet Mindfulness Questionnaire are discussed, followed by a discussion of the quantitative FFMQ data and the triangulated qualitative interview and classroom observation data through the conceptual framework of interpersonal neurobiology, attachment theory, social cognitive theory, self-theories, and language learning theory. Limitations of this study will be presented and future research and practical implications for action and practice will be discussed to continue the conversations about the role mindfulness plays in classrooms.

This study attempted to answer the following specific questions:

1. What are the levels of high school teachers' self-reported mindfulness, as defined and measured by the Five Facet Mindfulness Questionnaire (FFMQ)?

2. Is there a relationships between the teacher's self-reported mindfulness subscale scores, as measured on the FFMQ, and teacher demographics (age, gender, ethnicity, subject area, number of years teaching experience)?

3. How is a "highly mindful" teacher's conceptualizations of mindfulness, identity, and relationships demonstrated within the classroom setting?

Several important findings emerged that will be discussed in the following sections.

How Teachers Compare on the FFMQ

First, few, if any, studies have measured FFMQ scores on a teacher sample. Therefore, it is important to compare the teacher FFMQ scores with other research conducted to see if differences exist between a teacher sample and other groups who have completed this measurement. As the majority of teachers are highly educated, it is appropriate to compare their data with other demographically similar samples. Baer et al. (2008) collected FFMQ scores from 252 nonmeditators who held graduate degrees (i.e., 'highly educated') with mean scores reported in Table 5.9. FFMQ scores for 213 regular meditators, with the majority also holding graduate degrees are also reported. Bruce (2007) also used the FFMQ to measure facets of mindfulness with 20 psychotherapists utilizing the Cognitive Behavioral Analysis System of Psychotherapy (CBASP). Teachers reported similar means to highly educated nonmeditators, with

small effect sizes in Observing ($d = 0.48$) and Describing ($d = -0.21$) scores (Cohen, 1988).

The mean teacher scores were lower than meditators with medium effect sizes (between $d = -0.51$ to $d = -0.62$) in Observing, Describing, and Non-reactivity to Inner Experience, a large effect size ($d = -0.80$) in Non-judging of Inner Experience and no effect size in Act with Awareness ($d = 0.18$). These comparisons support the construct validity findings by Baer et al. (2008) and also show that effects sizes between this study's teacher participants and consistent meditators varied in each facet.

When compared with CBASP therapists, the effect size for Describing and Non-judging of Inner Experience were large ($d = -0.97$ and $d = -1.11$, respectively). Small effect sizes were found in Acting with Awareness and Non-reactivity to Inner Experience with no effect size in Observing. In comparing teacher mindfulness scores to CBASP therapists, it is interesting to note the difference in two areas that require significant formal language, Describing and Non-judging. It is also important to note that Teacher F in this study's structured interview shared the following impression:

> The educators in this building are asked to play the role of therapists far too often and I think it's not part of my [job], it should not, I'm not qualified, because what often happens when you get into the questions of, here is me on the other end of you, what's going on, are you aware of this -- now you're going to start to hear about that kid's life. And that's not a bad thing, because of course we're in relationships with people. But I'm not, I'm only qualified as a human to be empathetic and kind to other humans, but I'm not qualified to say the right things and I often find myself like, I don't know if what I'm saying is doing any damage. So the mindfulness/awareness/sticky, messy kind of ground - I'm not worried about the messy ground, but I do see a trend, a disquieting trend that rather than implement adequate social behavioral mental services for our families and adolescents, we are asking the schools to become those services. And I think that's dangerous and inappropriate for an academic institution.

This teacher highlighted the difficulty a teacher experiences in finding the right words to help students (describing) and questioning herself in whether those feelings or reactions are appropriate (non-judging). These are two areas that have been shown to be much higher among trained therapists.

Table 5.9

Participant Sample Comparison of FFMQ Scores

Facet	Group 1 Teachers	Group 2 Highly Educated*	Group 3 Meditators*	Group 4 CBASP Therapists**	Cohen's *d*		
					1 v. 2	1 v. 3	1 v. 4
Observe	29.60 (5.12)	27.04 (5.63)	31.96 (4.16)	29.33 (3.81)	0.48	-0.51	0.06
Describe	28.75 (6.39)	30.01 (5.63)	31.84 (5.30)	33.89 (3.92)	-0.21	-0.53	-0.97
Act aware	28.88 (3.58)	28.32 (5.21)	28.08 (5.10)	27.56 (4.30)	0.13	0.18	0.33
Nonjudge	29.25 (4.70)	29.13 (5.79)	32.44 (5.63)	34.56 (4.90)	0.02	-0.62	-1.11
Nonreact	22.58 (3.82)	22.82 (4.19)	25.70 (4.01)	23.78 (3.46)	-0.06	-0.80	-0.33

Note. Standard Deviations appear in parentheses after means. *Baer et al. (2008). **Bruce (2007).

While the majority of teachers reported agreement with statements in each facet, teachers, as a group, reported highest in Observing, while the case study participants reported highest in Describing. In a field where teachers are expected to scaffold information for students and provide multiple points of access for students, the ability to use language to describe thoughts, emotions, and behaviors is highly desired. While teachers, in general, believe the ability to observe is an area of strength (e.g. "I pay attention to how my emotions affect my thoughts and behavior"), case study teachers believe they are better adept at the use of language to communicate functions of the mind. The ability to use formal language to describe experiences and

connect ideas functionally also suggests that the case study teachers have greater

conceptualization (Arwood, 2011) and may be successful at promoting pro-social

student behavior through the use of language (Arwood, 2015). Non-judging of inner

experience also appears to be an area of strength by teachers in general. There is less

judgment, including disapproval and criticism, of teacher thoughts and emotions. As

both of these areas were also areas of strength among therapists (Bruce, 2007), this

suggests that there may exist similarities between the two professions. Teachers and

therapists both engage in interpersonal relationships with their respective students or

clients. As Teacher F recognized, there is more expectation that a role of the teacher

is to act as a therapist of sorts to meet the mental health needs of students.

Disaggregating Teacher Data

Second, while there exists a small underrepresented minority teacher

population at the high school where this study was conducted, a statistically significant

difference in non-judging was found. This highlights an area of further investigation

as states and districts establish initiatives to recruit more teachers of color

(TeachOregon, n.d.). It may be suggested that lower scores in this facet on the FFMQ

is reflective of a cultural difference when compared with a white majority. However,

Sugiura, Sato, Ito, and Murakami (2012) developed a Japanese version of the FFMQ

and found it appears to have psychometric properties comparable to those of the

original version, suggesting that the findings in this study are likely valid and not due

to cultural influences.

Teachers who struggle with ideas of irrational or inappropriate emotions, as identified in Non-judging of inner experience on the FFMQ, may develop a sense of self that will impact their relationships with students and staff. Teachers who are able to integrate these processes neurobiologically will be more likely to exhibit compassion and empathy (Siegel, 2012). It is also possible that students of color may also be experiencing judgment of inner experience and teachers of color may be more effective at displaying this empathy and building relationships through shared experiences. Conversely, teachers who score high on non-judging and also score low on acting with awareness, may have difficulty recognizing there exists this element of self-criticism and fail to recognize the struggles of teachers and/or students of color. This may prove to be important information for school administrators as they craft school climates that respect multiple perspectives and culturally responsive communication.

As there was a small number of teachers per subject area, teachers were grouped into teaching category: Humanities and STEAM (i.e., Science, Career Technical Education, Health, Physical Education, Arts, and Math). STEAM teachers reported lower Describing scores than Humanities teachers. Neuro-Semantic Language Learning (Arwood, 2011) explains learning to be the introduction of sensory input, development of perceptual patterns, overlapping of patterns to form conceptual meaning, and finally lexical tagging and use of language to name concepts. Difficulty putting ideas into words suggests that there may be more focus on the pattern development (i.e. repetition, practice, 'plug and chug' formulas, and recall)

rather than conceptualization and use of functional formal language. As describing requires the ability to find the right words to describe feelings, beliefs, opinions, and expectations, teachers who find describing difficult may also experience difficulty in explaining relationships between abstract concepts for students and rely solely on the pattern level of understanding.

The age of the teacher did not correlate with acting with awareness, as shown in previous research (Baer, 2008). With this teacher sample, age was only correlated with Observing and the Full-scale. This shows that younger teachers may find observing and noticing one's environment and paying attention to how emotions affect thoughts and behavior more challenging. This may be due to the sorting and processing of meaningful information. Observing sensory input that are not meaningful (such as clocks ticking, or the wind in one's hair) may not be deemed meaningful and, therefore, the person does not attenuate. This may be a generational shift as younger teachers are exposed to constant stimulus. Among the teacher sample, describing did correlate with acting with awareness as well as non-reactivity to inner experience. This suggests that the ability to put sensations, beliefs, opinions, and feelings into words is correlated to the ability to be stay attentive and focused during tasks and being able to pause before reacting or letting go of distressing thoughts of images. This again, supports that the development of language and naming of concepts promotes neurobiological executive functioning skills.

Describing Mindful Teachers

Third, by identifying teachers who self-report as highly mindful, more focused qualitative information was able to be analyzed to understand teacher perspectives, beliefs, and practices in classrooms where interactions between teacher and student may be framed with a mindful approach. Dweck (2000) suggests that those students with a more incremental theory of self, the ability to believe in the capacity and ability of oneself, will be more academically successful. Highly mindful teachers viewed intelligence as functional and a result of processing and application of information. While talent was recognized as a gift that may have different levels, there were no mentions of a limit or belief that some students cannot achieve. These teachers held beliefs that more closely matched a growth mindset (Dweck, 2000).

While much of the work examines what can be done to increase student achievement, specific desirable outcomes of educations from the perspective of these teachers only identified specific skills and literacy as one of four primary foci. A student's personal fulfillment, success in navigating the world, and contribution to society were seen as positive outcomes of education. Each teacher also spoke to how education of the individual and society are related. They viewed education as a chance for established society to share and present current knowledge to students, allowing for future generations to expand and develop those ideas. They were unanimous in describing the purpose of education is to help students develop into productive and functional citizens through their socialization. This overarching theme evoked elements of Situated Learning Theory (Lave & Wenger, 1991) and Social

Development Theory (Vygotsky, 1978), in which learning is embedded within activity, context, and culture and a function of language. These beliefs are apparent in the classroom environment. The case study participants demonstrated elements of authoritative classrooms, rather than authoritarian classrooms, as defined by Arwood (2000). All communication is valued, whether by behavior, written work, or speech. By valuing each student, teachers establish positive attached relationships in a mentorship role (Bowlby, 1999) and model positive pro-social behavior of care, kindness, and respect for students to observe and practice (Bandura, 1986).

Teachers also approach mindfulness similarly to how they approach the education of students as a unique combination of nature and nurture that can be developed, as it is a shift in perspective guided by language, rather than an explicit skill to be taught. As such, a single intervention program may be useful, yet not essential. There are multiple ways to develop these skills, through developing language, which leads to neurobiological integration reducing chaos and rigidity (Arwood, 2011; Siegel, 2012). Case study teachers suggested strategies including breathing exercises, physical exercise, engaging in meaningful learning, being present with others in stillness, practicing listening, Socratic Seminars, observing other teachers' classrooms, professional learning communities, and remaining open to feedback. By developing mindfulness, teachers feel more calm, relaxed, energized, and refreshed. Mindfulness can be a tool for self-preservation and allow teachers to be present for their students.

Implications

The use of FFMQ scores among a teacher population can be a valuable tool for self-reflection and goal setting. Teachers may be able to identify underlying strengths and weaknesses of which they were unaware and that impact the teacher-student relationships and the teacher's effectiveness in the classroom. This can be implemented in smaller professional learning communities that may already be open to feedback and working on professional growth, or in a larger setting that may need to highlight school-wide concerns related regard to classroom management, discipline, instruction, or other language-based communication.

This study also identifies multiple ways to increase mindfulness, independent of formalized mindfulness interventions or meditation. Schools wishing to implement mindfulness programs for their students should not be exclusive of teachers and staff in the building. Rather, to develop a mindful school community, the approach must be multi-pronged, recognizing personal beliefs and preferences, in addition to personal visual or auditory learning styles.

Finally, there must be a focus on developing language as the foundation for the potential of metacognition, reflection, and increased cognition and integration. By only relying on patterns of information, rather than the connection and synthesis at the conceptual level, teachers and students alike are unable to fully develop pro-social communication and a mismatch of expected behaviors will persist, particularly those which education has identified as those requiring cultural competency. As the human

brain is capable of unlimited neural connections, language and development of formal

concepts is also unlimited. With an increase in use of functional language, teachers

and students will be more capable to describe their emotions, be attentive, reduce

internal criticism, and act with reflection rather than immediately react to emotions.

Limitations and Future Research

Several limitations must be discussed in this study. First, using a self-report

questionnaire as a primary data source introduces validity issues, particularly when

reporting mindfulness. Mindfulness, by nature, is a quality of awareness. It is

possible that those who are most mindful, may in fact be more mindful of how

unmindful they are and may report lower scores. Teachers may also believe in the

importance of possessing mindful qualities and may over-report the extent that they

are actually mindful due to desirability bias.

Another limitation to the generalizability of this study is the lack of racial

diversity among the faculty and students at the school, and therefore within this study.

The demographics of this school are predominantly Caucasian with a higher

socioeconomic population than other urban high schools in the Portland Metro area.

Socioeconomic status is not directly analyzed in this particular study, yet may be

related to the parent/guardian's highest level of education which is reported in student

demographics. Those who are more educated report higher in all facets of the FFMQ

(Baer, 2008). Further studies may determine if the practices of a mindful teacher, and

specifically using more functional language to develop concepts and using an

authoritative classroom structure, are more or less impactful or are demonstrably

different in a school with higher poverty or more ethnic diversity. While cultural awareness is an important component of culturally relevant instruction, it was not addressed specifically in this study, but is certainly an area for further research.

Also related to the culture of underrepresented minorities is the non-judging of inner experience by teachers of color. While this study's results may be explained by a Type I error due to the small sample size, it is still important to recognize that the inner experiences of a minority may be different than the majority and those experiences impact the relationships they build with colleagues, families, and students. This is an area of research that has primarily been addressed in areas of sociology, anthropology and law, and applied to education. Further research should be analyzed through lenses specific to the individual's experience, such as neuroscience and psychology, with a focus on the language used to connect those concepts and communicate beliefs and emotions.

The mindfulness of teachers across a variety of subject areas is also an area for further research. This study required the grouping of teachers into categories due to the sample size, however, more powerful information may be collected and disaggregated by specific subject area. This can be useful particularly in teacher preparation programs to highlight needs in areas of discipline in pedagogy courses.

As research has correlated student academic achievement with attendance and behaviors resulting in out-of-school discipline, another area of research is if teacher mindfulness may influence student behaviors and academic achievement. This may provide schools with more detailed information as to how to curb negative student

behaviors and increase motivation to attend class, both of which impact student

engagement.

Finally, this current research study is fundamentally based on the Western

psychology assumption that mindfulness can be measured using a self-report

questionnaire asking the respondents to measure their level of agreement to self-

reflective statements. While research is being conducted in neuroscience to

understand the implications of using mindfulness strategies in neural regulation, it is

still primarily understood through theory of mind. The application of a

neuroeducational lens to future studies in mindfulness, specifically the use of language

to modulate cognitive processes in classrooms and during mindfulness practice, will

move our understanding of mindfulness forward. As the root of communication and

thought is language, an investigation of the use of functional language in classrooms,

and thereby cognition, and its potential correlation to currently described mindful

characteristics is essential in this developing field.

Conclusions

Mindfulness interventions in therapeutic settings have shown promising

results, and as such, has garnered attention from education as useful to mitigate

student anxiety, depression, stress, and other psychological or physiological barriers to

attendance. We cannot discount these findings as tools to improve overall well-being,

however, programs cannot discount the power of teacher-student relationships and the

structure and function of classrooms. Education is an incredibly complex

environment, and continues to increase in its complexity. Teachers and administrators

continue to deal with issues of legislative compliance and the stressors of performance

based on student achievement, particularly on high stakes tests. For decades, reform

approaches have been outcome-based and punitive in nature. Rather than to continue

to focus on the measurable outcome which has proved to be ineffective and

frustrating, education requires a shift in perspective. Teachers need to be educated on

the brain – the most complex organ in our body – that receives and processes and

integrates information and neuromyths need to be expunged. Educators, at the

practitioner level but also teacher preparation level, must understand the role of

language in development of the self (preoperational, concrete, formal), and learn

strategies to educate students in the way they learn, rather than how educators have

traditionally taught. Learning is life-long and is universal. People from every culture,

every socioeconomic status, and every race use their language and experiences to

make decisions in every moment of their lives through the processing of meaningful

information. Educators must recognize that their best efforts will only achieve success

if they can present information that is meaningful to students and if they focus on the

underlying functions of communication and relationships through mindful

frameworks.

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Appendix A

Teacher Survey

<u>**Teacher Demographics**</u>
Please answer the questions below by circling your answers.

Age: 18-24   25-34   35-44   45-54   55+

Number of Years Teaching Experience: 0   1-3   4-6   7-10   11+

Gender Identification: Male   Female   Preferred: _____

Ethnic Identification:
American Indian or Alaskan native   African native
African American   Asian
Latino   Mixed Race
White non-Hispanic   Pacific Islander
Decline to respond
Other:

Subject Areas taught: Arts   Career Technical Education   Social Studies
          Health/PE   Language Arts   Science   Mathematics

Please describe any experience or training you have in mindfulness or meditation practices:

_____

Appendix B

Five Facet Mindfulness Questionnaire (FFMQ)

Ruth A. Baer, Ph.D.

University of Kentucky

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

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 terribly 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 thoughts 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.

Appendix C

Semi-Structured Teacher Interview Questions

1) Mindset

    a) Please explain, in detail, your definitions of "intelligence" and "talent."

2) Educational philosophy

    a) What is the purpose of education? Please include what you think are desirable outcomes of your students' education.

3) Role of teacher in teacher-student relationship

    a) What are the role and responsibilities of the teacher, both in and out of the classroom?

    b) What strategies do you use? Describe specific strategies you use to establish your classroom environment and teacher-student relationships.

4) Semantic meaning of mindfulness

    a) How do you define the term mindfulness?

    b) Do you believe it can be cultivated or is it an inherent trait?

    c) How can a person develop more mindfulness (if previous answer indicated a cultivation belief)?

5) Meditation, mindful awareness experience

a) Please describe any experiences you may have had with meditation or mindful awareness practices.

b) How did these experiences make you feel?

c) To what extent did you use language (either internal voice or external language) to guide your understanding of the meditation or mindful awareness experiences?

Appendix D

Classroom Observation Protocol

Teacher: _____   Subject: _____

Date: _____   Class Period: _____

Number of Males: _____   Number of Females: _____

Classroom Physical Description:

Description of Classroom Activities:

Description of Student Behavior:

Description of Teaching Behavior:

Observation Checklist

☐ Choices are real: "I chose X."	☐ Choices are controlled: "I had to…"
☐ Power is freely shared: All behavior is viewed as a contribution.	☐ Power is controlled: The rules are preset and disciplines by the adults.
☐ Learning is seen as an instrinsic.	☐ Tasks and behaviors are externally rewarded.
☐ Communication is respected and all communication is validated.	☐ There is a time and way to communicate as determined by the adult.
☐ The class members are all equally respected and valued: "Authority doesn't come with size, just because the adult is taller doesn't make the adult more valuable."	☐ The class is adult directed.
☐ The class has an internal value and attachment for the group.	☐ The class has no identity but through the individual members.

(Arwood, 2000)