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Teacher as Environment: The Embodiment of Heartfulness in Teaching Practice

by

Brenda E. Mansfield

A THESIS

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Abstract

This research is an attempt to expand the topic of “heart in pedagogy” by exploring how the cultivation of positive emotional states may affect the pedagogical relationality between teacher and student and, ultimately, classroom climate. After all, “we never educate directly, but indirectly through means of the environment” (Dewey, 1944, p. 19).

A heartfulness approach in education complements the contemporary practice of mindfulness, which has been incorporated into various curricula as a component of Social and Emotional Learning (SEL) initiatives (Schonert-Reichl & Hymel, 2007; Schonert-Reichl, 2017; Zakrzewski, 2014). This paper focuses on the possibility that connecting the concept of heart in pedagogy to its physiological, social and emotional, and contemplative roots may offer new insights into heartfulness in teaching practice.

Teachers participated in a series of heartfulness workshops, which included contemplative practices such as loving-kindness, appreciation, and compassion meditations. In addition, a heart-based biofeedback stress-management program was implemented to help teachers learn to deliberately shift into positive emotional states, thereby complementing the contemplative aspect of the program with an embodied awareness of heartfulness.

Although a contemporary appreciation of the heart’s intelligence has been achieved through the natural sciences, the interpretive approaches drawn upon for this research study go beyond the natural science perspective and return the question of the role of the heart to its roots in lived experience. There are many in-depth studies on mindfulness in education, but the subject of heartfulness has not yet been given a detailed phenomenological exploration on par with the depth of study of mindfulness research. With the hope of developing a new understanding of heartfulness in teaching practice, I posed the following questions:

- How do teachers who practice HRV biofeedback understand heartfulness?
- How might the embodiment of heartfulness practice influence teaching practice?

This interdisciplinary study may provide new insight into the ways heartfulness informs mindfulness in pedagogy. Supporting teachers' well-being is one way to foster positive teacher-student relationships, improve career satisfaction and longevity, and contribute to building healthy communities.

Preface

Rhythm, as the vitalizing force, swells the limbs from within, moves the soul towards the body till soul and body, content and form, are indistinguishable in the moment of equipoise. (Pall, The Dancer in Yeats, 1976, p. 113)

Biological rhythms are generated by the heart as it pulses within us. The word rhythm is derived from the Greek *rhythmos*, which means "measured flow or movement" (OED, 2017). The concept of rhythm quickly became a metaphor for my approach to this study of the heart in pedagogy, and the imagery of rhythm kept reasserting itself in unexpected ways in my day to day life. The premise of the next yoga class I attended was *rhythm and flow* and, in keeping with that theme, the instructor called upon the river deity Sarasvati as inspiration for the class. Connecting to rhythm in this study of heart in pedagogy set the stage for my introduction to an ancient myth, a river, and a goddess:

Flowing from high in the Himalayas and meandering through Northwestern India on its way to the sea, the Sarasvati River is said to have been the lifeblood of the communities along its banks. According to the Rig Veda—an ancient and sacred Indian text containing the mythology, poetry, hymns, and prayers pertaining to the origin of the world—the Sarasvati was revered as the site where key Vedic scriptures were composed ten thousand years ago (Menziess, 2006, pp. 18-19). Sarasvati was also known as a divine deity, the Hindu goddess of Wisdom and Learning. Although she was originally considered a personification of the river itself, Sarasvati over time “came to embody sacred speech, the Word” (Danino, 2010, p. 2).

According to the ancient myth, the Sarasvati River was active until 16th century AD, after which time it is said to have mysteriously dried up in the desert, at a place named Vinasana. Some believe that the river continues to flow underground to this day (Holloway, 2014). Others believe in the literal river of the past: geological investigations and satellite imagery evidence points to the possibility that the mystical river was at one time more majestic than the Ganges

(Holloway, 2014). The search for the Sarasvati, and efforts to trace its course, have occupied scholars over the past century (Knapp, 2015).

The historical account of the upsurge and subsequent dessication of the Sarasvati River finds a counterpart in the decline of our connection to our own hearts as the dominant driving force in consciousness. In ancient Greek, Middle Eastern, and Chinese worldviews, the heart was considered the source of intelligence, wisdom, and love (Godwin, 2001; Young, 2003). This reverence for the heart as the centre of consciousness gave way following the “Great Heart Split” of the seventeenth century (Godwin, 2001, p. 111), which was ushered in by Cartesian dualism, the mechanical heart of Harvey, and a new intellectual inclination toward science. As time progressed, the age of the Enlightenment and the Industrial Revolution gave rise to an emphasis on dualities (i.e., intellect versus feeling) at the expense of wholeheartedness. As a result of these events on Western imagination, “the dead heart was born into Western consciousness.... Thought lost its heart, heart its thought” (Hillman, 1981, p. 25). Thus, until recently, the brain has been considered more essential than the heart as the coordinating force for body and mind. This perspective is currently being revisited, as new scientific studies acknowledge the dominant role of the heart in the feedback loop between the heart and the brain (McCraty, Atkinson, & Tomasino, 2001).

As a conversation between the human sciences and the natural sciences, this research seeks to re-integrate the ancient metaphorical wisdom of the heart with our contemporary scientific understanding of its function and intelligence. Ironically, science is returning us to the ways of the ancients: as ancient intuitive understandings placed the heart as the seat of intelligence and wisdom, a new appreciation for its wisdom is emerging via the scientific measurability of the heart’s rhythmic patterns (McCraty, Atkinson, & Tomasino, 2001).

The heart is typically regarded in the following ways: metaphorically, in relation to emotions and feelings, and biologically, in terms of its physical structure and function within the body. With this research I hope to form a bridge between these conceptions of the heart, and to devise a new way to consider heartfulness and its role in the burgeoning field of contemplative pedagogy, particularly within the study of mindfulness and education. The heart is intricately connected with and responsive to input from all the body's systems, so it is also important to acknowledge that the heart rhythms referred to in this study are generated as a result of *moment-to-moment* input from the body as it interacts with others and the environment (McCraty, Atkinson, & Tomasino, 2001). Kornfield (2009) prompted us to “reinhabit our body as the conduit of life energy” (p. 111). Wisdom of the heart, in the context of this study, therefore encompasses the metaphorical, emotional, and functional in an attempt at understanding heartfulness in pedagogy.

Aside from the recent scientific discoveries pertaining to the heart, this renewed interest in the wisdom of the heart has captured the attention of popular culture. For example, musician Richard Reed Parry (2014), a member of the Canadian indie rock band Arcade Fire, has created an innovative, delicate, and intimate orchestral composition entitled *Music for Heart and Breath* in which the musicians utilize stethoscopes to access their own biological rhythms as they play. Parry's vision involves replacing traditional musical time signatures with rhythms and tempos generated as players synchronize the playing of a common musical score to their individual heart rates or breathing patterns.

Likewise, a return to the wisdom of the heart is evidenced in the writings of contemporary curriculum scholars, who have taken up the topic in thought-provoking ways. Smith (2014) cited the need for “*spiritual cardiologists* who can help humans cure the diseases of our spiritual

hearts” (p. 187, emphasis added), and Fowler (2012) used the term *cardioplasticity* to refer to the heart’s capacity to respond, in the moment, to changes in our emotional environments (p. 24).

At this point, it is interesting to consider the implications of a return to the wisdom of the heart in the context of education. The most relevant link reveals that teachers’ stress levels have recently been reported as reaching a crisis point (*The Guardian*, 2013). The problem has escalated to the point that 67% of teachers report their job as having an adverse effect on their health, leading to increasing requests for time off and increasing numbers of teachers leaving the profession altogether (Espinoza, 2015). Reports such as these substantiate the call for teachers to embrace heart-based teaching as one way to promote teacher well-being.

Krop (2013) described the suffering endured by teachers who experience “extreme mental, emotional and spiritual exhaustion” in response to the overwhelming demands of the profession. Clark (2012) outlined the scope of the problem:

I’ve learned that consuming ourselves with our jobs is a disservice to self. I am more than my profession. I need to attend to my spiritual and creative well-being. My students and colleagues deserve no less, and even more importantly, I deserve no less. (pp. 269-270)

In light of the resurgence of the awareness of the heart as a source of wisdom, how might knowledge, practice, and embodiment of coherent heart rhythms influence teachers in their professional practice? This question compels us to consider contemporary contemplative initiatives in education, which place particular emphasis on mindfulness practice. This topic has been specifically embraced by Social and Emotional Learning research and initiatives, and its utility is evidenced in the availability of programs such as MindUp (2013) for students and S.M.A.R.T. in Education (Stress Management and Relaxation Techniques) for teachers, which was initiated by Passageworks (2014), a foundation devoted to engaged teaching and learning.

High levels of stress continue to pervade teaching practice, but, in the words of Carol Gilligan (as cited in Real, 2011), “*It doesn’t have to be like this.*” Pedagogical practice should function “as a healing, soothing gesture, and the work of being in the world with our whole selves” (Seidel, 2015). With this research comes an invitation for teachers to explore heartfulness as a possible way to enrich their practice with a new understanding of teaching with heart.

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Chapter 1: Introduction

Journey to the Heart

The heart in teaching is the heart of teaching. (Hatt, 2005, p. 679)

Central to this research is my belief that heartfulness is an embodied way of being in the world that may be fostered through “active and intentional engagement” (Daugherty, 2014, p. 271) with the heart and its rhythms. Researchers at the Institute of HeartMath (McCraty et al., 1995) have demonstrated that positive emotions are reflected in a particular harmonious pattern of Heart Rate Variability, and the associated physiological response is referred to as *heart rhythm (or physiological) coherence*, evidenced by particular patterns of heart rate variability (HRV). Taking the notion of heart-based teaching beyond the metaphorical, this study implemented an information-based, experiential approach to heartfulness in pedagogy, introducing participant teachers to techniques and biofeedback programs to help them become aware of the potential to generate and sustain HRV patterns in support of overall well-being. As this study has developed and grown, the experiential “training” aspect of the study has taken on a new significance for me. In the beginning, I considered biofeedback training the main focus of the study. As the literature unfolded over time, however, I began to understand biofeedback as just one tool in a body of work devoted to “heartfulness” and “heartful awareness.” This realization led me to explore the lived experience of heartfulness as it relates to mindfulness and contemplative practice in education, loving kindness meditation, and the broader notion of heartfulness as an *embodied* phenomenon.

I explored heartfulness in pedagogy by engaging in conversations with teachers about their experiences with heartfulness. It is not my intention to advocate for HeartMath and its programs, but to advocate for the notion that understanding the connection between heart rhythm coherence and well-being may provide teachers another perspective from which to work well

with students. As the world is made up of meaning-making beings, this study may shed some light on how the heart comes to mean something in the classroom.

Chapter 1 first describes how I came to the topic, then goes on to look at perspectives of the heart through history—in particular, its association with the mind, as expressed in the popular term “heart-mind.” Next, I explore the notion of rhythms, universal and physiological, and the implications they have for our connection to each other and the natural world. A rationale for the research questions is presented via descriptions of the context and significance of the research. Chapter 2 offers a review of the literature linking heartfulness to contemporary contemplative practice, the science of the heart, and the relevance of these concerns for teacher well-being. This chapter ends with an exploration of the possible implications of heartfelt awareness on teacher-student relationships and classroom climate. Chapter 3 includes a discussion of Interpretive Phenomenological Analysis (IPA) as the research methodology, followed by an outline of the research plan. In Chapter 4 the participants are introduced. Chapter 5 offers an overview of IPA as it was utilized in this study. Chapters 6 and 7 focus on the interpretation of the data and the discussion of the findings, respectively.

Coming to the Topic: One Heart’s Journey

As I consider the wisdom of the heart in pedagogy, I find myself already embedded in the work. In one moment I am held in its grasp and swept along a current of excitement and promise. Then, in the next, tossed by waves of indecision and confusion, all the while experiencing the range of emotions that attempting a project of this scope elicits. Curiosity, frustration, anxiety, surprise and, from time to time, the elation of the ‘aha’ moment as understandings begin to unfold. I am all the while acutely aware of my own situatedness with regard to heartfulness practice: the contemplative practices I explore in this study are also a part of my personal

practice, serving to provide a connection to heartfulness as a way for me to navigate these emotions in a healthy way as I proceed.

According to Gadamer (2013), we come to a topic as constituents in a field that is *always already* in play. Regarding this “prior hermeneutical situatedness,” Malpas (2014) wrote, “if we are to understand anything at all, we must already find ourselves ‘in’ the world ‘along with’ that which is to be understood.” Moules, Field, McCaffrey, and Laing (2014) emphasized that teachers need to open and adaptable:

To listen when we are addressed means that we are vulnerable and open, that we are prepared to be guided by a topic and its own form of address, rather than assumed versions of it, or by a pre-determined method. (pp. 71–72)

In this research, the focus remained on the lived experiences of participant teachers as they cultivated heartfulness, rather than quantitative outcomes related to the biofeedback techniques. I am interested in the possibility that learning about heartfulness and embodying the positive emotional states cultivated via the heart rhythm biofeedback practice on a regular basis may open up new meaning for teachers with respect to “heart in pedagogy” or “teaching with heart.”

When embarking on a research project, often the topic seems to find you of its own accord because it *speaks* to you: a research topic addresses us because there is something within it and our relationship to it that calls it to our attention in a very particular way. As Moules et al. (2014) remarked, “When topics address us, they open something, they call on us to remember why it is that certain things matter, and they ask us to bring these things alive in the here and now of our lives” (p. 6). Gadamer (1960/2013, p. 56) described *Erlebnis*, which is a quality of lived experience that stands out for us, apart from the stream of experiences that make up our everyday lives. *Erlebnis* is characterized by intensity in a lived moment that compels us to pay

attention to what is going on. My introduction to heartfulness began as just such an experience, which ultimately lead me on this research journey.

I began my master's studies in Human Development with a background in Kinesiology, Psychology, and Fine Art. I conducted a quantitative study comparing the state of physiological coherence (evidenced by a particular heart rhythm pattern that emerges with positive emotion) to the psychological state of flow (they are theoretically similar) in order to determine whether physiological coherence is induced by the flow state or vice versa. In effect, I was attempting to identify a physiological marker for the state of flow. Until that time, I had considered emotions as states that "happened" to me, essentially out of my control. As I learned about the new science of the heart and its impact on cognition and well-being, I began to understand emotions in an entirely different way. All throughout my master's degree, I practiced physiological coherence techniques, including heart rhythm biofeedback, which is aimed at generating and sustaining positive emotion. I practiced to the point where the training became a natural part of my daily routine. I began to notice changes in the overall quality of my life, particularly in the way I was able to meet with challenge, stress, and adversity in a new and more composed way. When I completed my degree I had no intention of pursuing doctoral studies, and yet over time I found myself still intrigued by the science of the heart and the sense that there was more going on with the practice of heart rhythm coherence than the science could explain.

In 2012, I attended the *Resilient Educator* training program at the Institute for HeartMath in Boulder Creek, CA. During one of our sessions, a remarkable nurse recounted her experience of sharing heartfulness in her work in a busy hospital emergency department. She described the phenomenon wherein one person's state of physiological coherence has a profound influence on those in his or her company (possibly through the natural transmission of the heart's powerful

electromagnetic fields from one individual to another or to a group). This phenomenon is referred to as *collective coherence* (Morris, 2010). The nurse noticed a transformation in her practice, in particular the influence her newfound composure was having on the overall atmosphere of the emergency ward, as she herself was able to be more resilient in the face of the constant stresses in the environment. She used the term “Nurse as Environment” to describe her practice, referring to the shared coherence she brought to every emergency patient and attending staff when she herself was in a state of physiological coherence. Hearing this nurse tell the story of how her physical, energetic presence influenced her professional *environment* became a pivotal moment in my own emerging understanding of the heart and the possibilities for sharing its energies. I was once again moved to attend to this notion, and began to relate the nurse’s experience and the concept of “Nurse as Environment” to education and pedagogy.

I have been addressed by and continue to consider the physiological nature of the heart and its influence on our overall well-being. Recent scientific research supports the role of the heart in wellness and stress reduction, and points to practical methods for achieving these goals (McCraty & Rees, 2009). This body of work may make a meaningful contribution to the discourse of heart in pedagogy. As I researched the wisdom of the heart and its relationship to pedagogy, however, I noticed that many of the references to heart in teaching are metaphorical in nature, describing heartfelt teaching practice in ambiguous terms. I refer to this metaphorical usage as an example of the way heart in pedagogy has typically been taken up in educational scholarship, and use it to highlight the need to connect the topic to its physiological, social and emotional, and contemplative roots.

The Heart of All

*The heart in thee is the heart of all; not a valve, not a wall, not an intersection is there anywhere in nature, but one blood rolls uninterruptedly in an endless circulation through all [humanity], as the water of the globe is all one sea, and, truly seen, its tide is one. It is one light, which beams out of a thousand stars. It is one soul, which animates all people. (Ralph Waldo Emerson, *Essays and Lectures*, 2009, p. 207)*

As early as the fourth century BCE, the topic of the heart has cultivated interest and inspired imagination. Aristotle identified the heart as the seat of intelligence, motion, and sensation—“a hot, dry organ” that he considered to be the center of vitality in the body, with the brain and lungs “simply existing to cool the heart” (Stanford, 2015). Taken in the context of contemporary scientific understanding of the heart, and attributable in large part to the discoveries made by researchers over the past few decades (Kristal-Boneh et. al, 1995; McCraty, Atkinson, & Tomasino, 2001; McCraty & Rees, 2009; Thayer & Lane, 2009; Thayer et al., 2012), Aristotle’s identification of the heart with the senses holds true to this day, although we frame our understanding of this ancient wisdom in the context of new knowledge. The above-mentioned researchers have discovered that particular patterns of heart rhythms (generated by beat-to-beat intervals) have the power to facilitate or inhibit cognitive function, demonstrating that the brain’s relation to the heart is far more complicated than merely “cooling” the heart. I explore this relationship more fully in subsequent sections of this dissertation.

From another perspective, in an insight gleaned from Hillman's (1981) writings on the history of the Heart of Augustine, the heart, *cor*, is seen as “‘intima mea, ‘inward dwelling’, ‘closet’, the anima or soul” (p. 27). Here, Hillman links the heart with anima or soul, conceiving the soul as the dominant force in the soul-body union. This link to ancient wisdom supports the modern scientific notion of the heart as the dominant force in the feedback loop between the heart and the brain, as, in the physiological feedback loop between the heart and the brain made

possible via the vagus nerve, the heart sends more information to the brain than the brain returns to the heart (McCraty, Atkinson, & Tomasino, 2001).

Other early references to the heart conceive it as one with the intellect, as reflected in the Chinese concept of *hsin*, or the heart-mind, which represents the unison of mind and body (Deutsch, 2015; Fischer-Schreiber, Ehrhard, & Diener, 1991; Godwin, 2001; Smith, 2014). According to Smith (2014), the concept of heart-mind was also reflected in the ancient Greek notion of the intellect (*nous*):

The Greek concept of intellect shares much with the Asian concept of mind, in particular appreciation for the unity of mind and body, especially in the heart. For Greek sages, the intellect 'constitutes the innermost aspect of the heart' and was variously referred to as 'the organ of contemplation' or 'the eye of the heart'. (p. 10)

The Greek and Asian acknowledgement of the heart and mind as one has also been described by Godwin (2001) in her exploration of our understanding of the the heart through history. She took us back over five thousand years to the ethics of “human-heartedness” emphasized by Confucious, whose teachings stressed “balance in the heart” (p. 61). Unity of the mind and body suggests a balance between the two, although contemporary perspectives tend to focus on mindfulness over heartfulness despite the fact that heartfulness is a quality that tends to grow stronger within sustained mindfulness practice (Daugherty, 2014a).

Early understandings of the heart-mind also included its emotional and relational qualities. According to Deutsch (2015), the Chinese appreciated the social rather than the individualistic nature of humans and considered *hsin* as instrumental in relating to others. This focus on the role of the heart in interpersonal relationships is also reflected in the Thai word *jai*, and the Japanese *kokoro* (Berendt & Tanita, 2011). According to Perez (2008) “the heart is the

seat of love” and “the concept of love is the most metaphorically used, probably because it does not only allude to an emotion, but also to a relationship” (p. 31).

Berendt and Tanita (2011) discussed Old English interpretations of the heart as the “locus of thinking” (p. 74), and likened this conception to our modern day concept of mind: “The expression ‘learn by heart’ still illustrates this old usage; the ‘heart’ was seen as the seat of intellectual faculties, such as understanding, intellect, mind, and memory” (p. 74). Most modern English expressions have lost this nuance and typically maintain a separation between the intellect and the “emotive-attitudinal” (p. 74). Identifying the brain *or* the heart as the sole locus of intelligence in the way described above is problematic in light of the previously mentioned physiological and biological connectivity of the heart to the brain and rest of the body.

In tracing the etymological roots of the word “heart,” Perez (2008) discovered the Latin *cor or cordis*, from which the Spanish *corazón*, French *coeur* and Italian *cuore* are derived. German (*herz*) and English (*heart*) follow from the Greek root (*kardia*). Most pertinent to this study is Perez’s (2008) reference to the Indo-European root *kr for the Greek *kardia*. The root *kr has the original sense of *vibrating* (p. 30).

It is interesting that this etymological tracing of the word “heart” from the Latin *cor* and Greek *kardia* leads to the notion of vibration, for as Muehsam and Ventura (2014) pointed out, “All life exists within a sea of vibration, and rhythm is fundamental to all of life” (p. 40). The following passage from their work captures themes and concepts upon which this research rests. Muehsam and Ventura (2014) described:

the existence of a subtle “biofield” information processing system that is intimately involved in the regulation of basic biological processes, from the molecular to organismic levels. We also note how these connections suggest an essential link between the heart

and the mind, between emotions and cognition. We have noted how these connections extend even to the interpersonal and cosmic levels, with the development of psychosocial genomics and the growing body of evidence for correlations between individuals and the natural geomagnetic environment of the Earth and Sun. (p. 50)

Rhythm and vibration are concepts that pertain to the connected nature of our embodiment within our energetic universe, and how that connection relates to well-being. With this research, I explored the meaning of these ideas as they relate to heartfulness, particularly within the context of the lived experiences of teachers in relationships with students.

Rhythms within Rhythms within Rhythms

There are rhythms within rhythms within rhythms. And these drumbeats echo all around us and within us. We are not outsiders to the process; we are part of it, throbbing to the pulse of the universe.” (Chopra, 2014)

In the midst of our busy, messy, world, individuals have lost a connection to the natural world—the complex energetic field from which we have distanced ourselves through endless streams of “distraction” (Smith, 2014). Many of us navigate the streams of experience we encounter without giving due attention to our place within the natural world and its potential as a source of replenishment, both for us as individuals and in our relationships with each other. As a result, our well-being is compromised, leaving us open and vulnerable to the physical and mental illnesses that reduce our quality of life (Kornfield, 2009). Distraction leads to disconnection with others and the natural world.

Abram (1996) described nested rhythms as “the countless worlds within worlds that spin in the depths of this world that we commonly inhabit” (p. 19). He lamented the fact that, in the culture of Western industrial society, our relationship to the earth’s biosphere has been disrupted and can “no way be considered a reciprocal or balanced one” (p. 22). Abram’s comment suggests

to us that a connection to universal rhythms is part of our history as humans in the world, and that a disruption to that connection and balance may be problematic to our quality of life.

The Pythagoreans considered the orderly, mathematical quality of universal rhythms (or cosmos) as an expression of order and beauty, as “cosmos means order” (Caldecott, 2006, p. 14). As Campbell (as cited in Osbon, 1991) reminded us, “The goal of life is to make your heartbeat match the beat of the universe, to match your nature with Nature” (p. 148). Although Campbell may have been taking a metaphorical approach here, the phrase “matching your nature with Nature” takes on a very specific meaning in the context of recent research into the heart and its rhythms. I am referring to patterns of heart rhythms (nature) that do indeed have the capacity to resonate with the rhythms of the biosphere (Nature) (McCraty, Deyhle, & Childre, 2012).

Although the disruption in our connection and balance to the biosphere may seem insoluble, Abram (1996) offered hope. He described the power of shared energy between sentient and non-sentient beings in the world, which expose the world as “alive, awake and aware” (p. 19). He wrote, “I learned that my body could, with practice, enter sensorially into these dimensions,” (p. 19)—into the worlds within worlds that constitute the universe and all its contents.

Abram (1996), however, did not offer details as to how to enter into these dimensions through his senses. In pondering the possibility of becoming in tune with these worlds within worlds, I found a connection to my research. A practical approach to this idea has been put forth in recent scientific studies such as in the work of McCraty and Childre (2010). By focusing on emotions and their relationship to the heart’s rhythmic patterns, McCraty and Childre (2010) discovered that coherent heart rhythms are shared between individuals, and this balanced harmonious state is transmitted into the earth’s magnetic field on a global level:

Most people know what it feels like to be in a harmonious state, the place where our hearts, minds, and bodies are united in a feeling of wholeness....When we are in this state, we feel connected not only to our deepest selves but to others—past, present, and future—and to all living plants and creatures and even to the cosmos itself. We call this state of internal and external connectedness ‘coherence’... Being responsible for and increasing our coherence baseline is not only reflected in our personal health and happiness, but also in the global field environment, which helps strengthen a mutually beneficial feedback loop between human beings and the earth itself. (p. 10)

The connection between coherence and the global field environment has been investigated by McCraty, Deyhle, & Childre (2012), who have implemented an innovative, global project named the Global Coherence Initiative (GCI) to answer the question of how the balanced, harmonious state of physiological coherence is transmitted into the earth’s magnetic field on a global level. The global coherence monitoring system consists of a network of 12 to 14 sensor sites, each equipped to measure the earth’s magnetic resonances. Interest in these resonances is fuelled by the fact that they have an impact on human health and well-being through a “coupling between the human nervous system and resonating geomagnetic frequencies, called Schumann resonances....These resonant frequencies directly overlap with those of the human brain and cardiovascular system” (Siegel, 2010b, p. 64).

Pert (2007) contributed to the conversation with her observation that “everything is vibrating together....Every cell is talking to every other cell in this vibrational rhythm.” Lipton (2005), with an interest in energetics on the cellular level, found that “a cell’s life is fundamentally controlled by the physical and energetic environment with only a small contribution by its genes....It is a single cell’s “awareness” of the environment that primarily sets

into motion the mechanisms of life” (p. xiii).

Entering into the conversation from the perspective of the lived experience of heartfulness, Daugherty (2014a) acknowledged that we “know that there is a deeper way to be connected to life, and we recognize it when we feel it” (p. 1). The cultivation of heartfulness in this study takes its place within the larger conversation surrounding contemplative practice. Miller (2014) described contemplative practice as “a way to connect to our souls, to others in an embodied way, to the earth, and to the cosmos” (p. 3). Miller’s statement opens up a link between the *physiological* (objective), *lived* (subjective), and *relational* (intersubjective) aspects of heartfulness practice.

The story becomes even more compelling when taken up in the field of physics, as “the pulse of the earth is the pulse of life itself” (Russell, 2015). Philosopher Alfred North Whitehead (as cited in Kuntz, 1984) alluded to “a mind that responds to periodicities, expresses patterns of nature, and sets us in sympathetic vibration” (p. 5). In a fascinating discovery, the Schumann Resonance, an earth/ionosphere biophysical frequency identified at 7.8 Hz (Bilokh, Nikolaenko, & Fillipov, 1980), has been associated with optimal brainwave rhythms in mammals (known as alpha rhythms) that have been shown to promote well-being and health (Dickenson, 2015). This connection becomes more intriguing when linked to the work of McCraty, Atkinson, Tomasino, and Bradley (2009), who have discovered that the brain’s alpha rhythms (characterized by the frequencies in the range of 7.5–12.5 Hz) are synchronized to coherent heart rhythms, with the two systems operating in a powerful feedback loop and generating optimal frequencies for promoting system-wide balance and harmony.

Since we are “beings of frequency” (Russell, 2015), by paying attention to the energetic heart as it manifests through our own bodies to those around us, and the energetic field in which

we are all connected, we may discover how to re-attune ourselves to the rhythms that sustain us.

Context of the Research

Research questions for this study were formulated within the broad context of contemplative practice in education. Contemplative practice has been largely identified with mindfulness, however the emotional aspect has been taken up by Social and Emotional Learning (SEL) curriculums as well, with the acknowledgment that mindfulness practice leads to an increase in compassion and loving kindness, or “heartfulness” (Daugherty, 2014a). Although this research is concerned with heartfulness, the physical, biological, and physiological feedback loop between the heart and the brain demands consideration of its relationship to mindfulness.

Mindfulness means “paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally” (Kabat-Zinn, 2003, p. 145). Miller (2014) also described present-moment-awareness in the context of contemplative practice, wherein “we see things in the here and now” (p. 4). He described mindfulness and compassion as constituents of contemplative practice:

Contemplation can also include spontaneous and unstructured moments when we experience being fully present...Contemplative practitioners create the possibility for more of these moments to arise. As much as possible in a hectic and frantic world, they try to live contemplatively. This means living more in the moment and not in the past or future. It also means living more compassionately, as they see intimate connections to others, the earth, and the universe. (p. 6)

Mindfulness has been extensively researched in recent decades, with neuroscientist Richard Davidson exploring its effects on the brain’s structures and how they physically change as the brain adapts to new experiences. In a talk entitled “*The Heart-Brain Connection*”

Davidson (2008) explained the relationship between emotion and cognition, and emphasized the notion that “behavioural interventions are biological.” In other words, our experience brings about changes to brain structure and function, a phenomenon known as “neuroplasticity” (Horrigan, 2005). In a parallel interpretation, Fowler (2012) used the term *cardioplaticity* to refer to the heart’s powers of adaptability to moment by moment changes in bodily and environmental input. More recently, and most relevant to this study, is Daugherty’s association of heartfulness with mindfulness:

Heartful awareness...is a non-reactive, non-judgmental present moment awareness that is acutely attuned to each momentary opportunity to foster a sense of deep love, compassion, connection, joy, gratitude, or whatever life-giving emotion may be available to us...It is dependent upon, yet distinctly different than mindful awareness. (2014a, p. 16)

Daugherty noted that heartfulness and mindfulness are rooted in awareness, which serves as a pivotal concept in the cultivation of contemplative practices. She explained that mindfulness and heartfulness are like “two halves of a transformative and healing whole” (p. 16), a concept which is explored in this study through the science of heart rhythm coherence.

HeartMath (2015) provides a non-invasive method of evaluating heart rhythm patterns with the emWave Pro software system, a biofeedback technology designed to measure heart rate variability (HRV—a biomarker for well-being). Although the HeartMath program has been chosen to measure HRV in this study, it is important to note that it is but one of many programs available, such as Cardiogem (Triguna Media, 2017), Elite HRV (Elite HRV, 2017), Coherence Breatheheart (BMED LLC, 2017), and Oura (Oura, 2017). HeartMath’s HRV monitoring program has recently been taken up by the Professional Nursing Council

(PNC) in the context of Jean Watson’s “Theory of Caring” (Watson, 1997) and has been foundational to the Caritas Heart initiative, linking well-being to caring (Murphy, 2014).

The heart’s beat-to-beat intervals generate particular rhythmic patterns that correspond to emotional states. These patterns are detected by recording pulse data via an earlobe plethysmographic sensor. Individuals using HeartMath’s biofeedback programs in this study (emWave Desktop Pro and Inner Balance for iPhone and iPad) received direct feedback on their heart rhythm patterns, which were displayed on a computer screen or other device. The goal of the biofeedback training was to teach participants how to generate and sustain high levels of physiological coherence. Visual and audio signals indicated states of low, medium or high coherence in real time and as an accumulated score. Progressing through the four available challenge levels (low, medium, high and highest) served to raise baseline coherence levels as participants learned to consistently produce more sine-wave-like heart rhythm patterns. At the lower levels, it is possible to achieve coherence via breathing alone. At the higher levels, individuals are no longer able to do so as “coherence at this level is contingent upon generating and maintaining a positive emotion” (R. McCraty, personal communication, October 3, 2011).

Additional support for coherence training is available through the Quick Coherence Technique (QCT). The QCT is a positive-emotion-generating technique involving three basic steps (heart focus, heart breathing and heart feeling), and may be incorporated into coherence training sessions as required. The physiological basis of the biofeedback training and the steps involved in the Quick Coherence Technique are discussed in the literature review in Chapter 2.

With this research, I explore heartfulness from the following perspectives:

1. Third person (objective), by using biofeedback techniques to connect teachers to their heart rhythms;
2. First person (subjective), by examining teachers' lived experiences of heartfulness in teaching practice, and;
3. Second person (intersubjective), which is concerned with the relational.

Research Questions

- How do teachers who practice HRV biofeedback understand heartfulness?
- How might the embodiment of heartfulness practice influence teaching practice?

Significance of the Research

Everything that I know about the world, even through science, I know from a perspective that is my own, or from an experience of the world without which scientific symbols would be meaningless. The entire universe of science is constructed upon the lived world, and if we wish to think science rigorously, to appreciate precisely its sense and its scope, we must first awaken that experience of the world of which science is a second-order expression. (Merleau-Ponty, 1945/2013, p. lxxii)

This research was conducted with an interdisciplinary approach that reflects my interest in and former study in the natural sciences, combined with a newfound interest in interpretive approaches. My courses in the first year of my doctoral program provided an introduction to the world of qualitative research and interpretive traditions, and exposed me to a new perspective on the conduct of research. Whitehead (1932) stated, “[s]cience is a river with two sources, the practical source and the theoretical source. The practical source is the desire to direct our actions to achieve predetermined ends....The theoretical source is the desire to understand” (p. 154). Although this research incorporated the science of the heart through an implementation of biofeedback technology, its main focus has been to discover the meaning of heart in pedagogy beyond what has been discovered through the natural sciences. I studied heart in pedagogy through an interpretive lens as well, as another way to approach the “desire to understand.”

I recognize in my topic the opportunity to combine the skills and knowledge I have acquired to date in a new and meaningful way. Foucault (1985/1990) captured this sentiment in the following quote:

After all, what would be the value of the passion for knowledge if it resulted only in a certain amount of knowledgeable and not, in one way or another and to the extent possible, in the knower's straying afield of [them]selves? There are times in life when the question of knowing if one can think differently than one thinks, and perceive differently than one sees, is absolutely necessary if one is to go on looking and reflecting at all.

(Roth, 1992, p. 693)

What has become important to me, and the main reason I have chosen to pursue my topic interpretively, is the opportunity to explore its meaning beyond the “measurables” (such as HRV, cognitive function and well-being self-report measures) that are traditionally associated with physiological coherence training, and to explore the possibility that this training may offer new understandings of the heart and heartfulness in lived experience as it pertains to teachers, classroom climate, and pedagogical relationships.

One stance taken in this research is that science and interpretive work are not necessarily mutually exclusive. Husserl and Merleau-Ponty introduced perception, praxis, and embodiment to hermeneutics, expanding its focus beyond its premodern roots. Merleau-Ponty pointed to the relationship of phenomenology to the natural sciences, emphasizing each as an important way of “knowing.” Heartfulness has been studied scientifically (McCraty & Rees, 2009), but little insight has been gained into the lived experience of those whose practice is grounded in the science and physiology involved with heartfulness—specifically those teachers who currently include mindfulness in their teaching practice and have been willing to embrace the biofeedback

training and heartfulness practices offered in workshops over the past year. Incorporating a lived experience component to the study is a strong complement to foregoing scientific research, as “the ostensibly ‘value-free’ results of our culture’s investigations into biology, physics and chemistry ultimately come to display themselves in the open and uncertain field of everyday life” (Abram, 1996, p. 33). The meaning of the topic of heartfulness as it is lived by teachers who practice mindfulness is an important focus of this research.

Gains in social competencies and well-being have been demonstrated as the result of connecting to the power of the heart to generate and sustain positive emotion (McCraty & Childre, 2010; McCraty & Rees, 2009). The data support the claim that a state of physiological coherence facilitates cognitive function and optimal performance (McCraty, Atkinson, & Tomasino, 2001). While a contemporary appreciation of the heart’s intelligence has been achieved through the natural sciences, the interpretive approaches implemented in this research go beyond the natural science perspective and return the question of the role of the heart to its roots in lived experience. Specifically, this research offers a bridge between “knowing how” and “knowing that” (Ryle, 1945) by laying out foundational steps to cultivating heartfulness and recognizing and understanding states of heartfulness.

This interdisciplinary study provides new insight into the ways in which “heartfulness” informs “mindfulness” in pedagogy. It contributes to a deeper understanding of Social and Emotional Learning (SEL) initiatives in education, turning attention to the role of the heart. Findings point to ways that the heart may come to mean something in the classroom. Although good intention accompanies phrases such as “teach with heart”, “heart-based teaching,” or “be heartfully aware,” these abstract concepts fall short of the *how to* that may support a different understanding of the terms. Heart rhythm biofeedback offers a practical way to heartfulness, and

represents another entry point for finding my way around the topic, by connecting it to embodiment. As Cohen & Bai (2007) determined, in the midst of today's "overwhelming information explosion, it makes eminent sense to incorporate meditation in our practices of education. Thus we propose an inclusion of meditation or some such practice in teacher education" (p. 6). Supporting teachers' well-being is one way to improve career satisfaction and longevity and to contribute to building healthy communities.

Alberta Curriculum. Education Alberta identified the need for programs to support teacher development (Alberta Education, 2005, 2010). Teacher capacity is supported through ongoing commitment to professional development. (Alberta Initiative for School Improvement, 2003). The statement that, "[p]rofessional development embeds teacher capacity and learning in the daily work" (Alberta Education, 2005, p. 137) has a direct connection to the purposes of this study, supporting the development of teacher Social and Emotional Competency (SEC).

British Columbia curriculum. One of the goals of British Columbia's Ministry of Education in recent years is that "students will have increased opportunities to gain the essential learning and life skills necessary to live and work successfully in a complex, interconnected, and rapidly changing world" (BC Ministry of Education, 2012). Social and emotional learning initiatives in curriculum are supported in this direction and, although the main focus is on the development of students' awareness and competencies, the ministry acknowledged the role of the teacher in supporting this growth (BC Ministry of Education, 2013).

Conceptual Framework

The welding of phenomenology to hermeneutics...also included a focus not previously found in premodern hermeneutics, and that was the emphasis arising from both Edmund Husserl and Maurice Merleau-Ponty on perception, praxis, and embodiment...this set of emphases takes hermeneutics into yet another expansion in the late twentieth century, namely, the realm of science and technology. (Ihde, 1998, p. 40)

My interest in researching the lived experience of heartfulness in pedagogy developed as an extension of the quantitative study that I conducted for my master's thesis (Mansfield, Oddson, Turcotte, & Couture, 2012). An intriguing outcome of that study was that, although participants were asked to practice with the HRV biofeedback techniques for at least 5 minutes per day, the results showed that most participants extended the practice period to several times that amount, far beyond the requirements for participation in the research. This phenomenon was not anticipated, nor did I understand what motivated the participants to engage more robustly with the practice. Questions about the “immeasurables” in the participants’ experience lingered: What motivated them to extend their practice time beyond the requirements? Were they just curious about the program itself and spent time exploring its features (such as visualizers and games)? Did they find that the HRV practice was helping them to cope with stress and burnout? Was the practice of shifting to a positive emotion such as love and appreciation contributing to feelings of well-being? Questions such as these cannot be examined solely through a positivist lens; as Rickman (1990) noted, “the danger of an excessive emphasis on physiology and behavior is still with us” (p. 314). I became interested in the meaning that participants may have discovered through practice with the biofeedback. As Moules, McCaffrey, Field, and Laing (2015) concluded, “[s]cientific research, properly conducted, may be objective, but the questions it addresses are ‘always and already’ implicated in networks of historical and value-laden meaning” (p. 37). They acknowledged that meaning-making arising from different sources of knowledge “provides a firm basis for sound research” (p. 11).

Positivist and interpretive approaches have a long history, from Aristotle’s “practical” philosophy to the emergence of the human sciences, or *Geisteswissenschaften*, of the Romantic age (Gadamer, 1996). These two disciplines continue to lie in tension and in a “debate, which is

not likely to go away” (McCaffrey, 2012, p. 231). I wonder at the continued tension between the natural sciences and human sciences, particularly in light of Gadamer’s (1960/2013) contention that openness to the other includes the possibility that the other may be right. However, I see the two sources of knowledge as complementary, and I agree with Midgley’s (2001) assertion that science does not forbid us to be human.

The human sciences opened up the scope of knowledge to include the lifeworld by taking into account people’s personal experiences, both individually and in their encounters with others. Gadamer described this human component as “knowledge that science cannot ignore” (p. 1). The two often serve each other, as “[i]nterpretation depends on factual evidence and scientific objectivity depends on reliable communication” (Rickman, 1990, p. 295). The relationship between science and the lifeworld has been established since Husserl’s time, as he articulated in the following passage:

the life-world and objective-scientific world are related to each other. The knowledge of the objective-scientific world is grounded in the self-evidence of the life-world. The latter is given to the scientific worker as ground; yet as they build upon this, what is built is something new, something different. . . .scientists are, after all, human beings and as such are among the components of the life-world which always exists for us, ever pre-given; and thus all of science is pulled, along with us, into the—merely “subjective-relative”—lifeworld. (Husserl, 1999, pp. 368–369)

Husserl’s statement supports the idea that there was something at play beyond the “measurables” in my master’s thesis analysis—particularly in the ways in which study participants engaged with the biofeedback. The research explored heartfulness in “a context of human understanding in which science occupies a space, but not the whole space” (Moules, et al., 2015, p. 37). HRV

patterns were visible to participants as they practiced with the biofeedback program and, although the rhythms were observable, their meaning in the larger context of participants' lived experience could be "given to us *only* through communication" (Rickman, 1990, p. 304).

According to Braden (2008):

There is more than one way of knowing—the scientific method is only one way to describe how the universe works. There are other ways—other 'languages'—that do so very well...The discovery that everything in our world is part of a universal field is a perfect example...individual stories become our collective history. No matter how well we preserve the information of the past, however, the words of these stories are little more than "data" until we give them the meaning that allows us to apply what we know. It's the way we apply what we know of our past that becomes the wisdom of the present. (p. 173)

Data for this study was generated through dialogue with teachers who have developed heartfulness in several ways, including the practice of HRV biofeedback. Meaning was explored through these dialogues, and was thus dependent on the interaction between myself, as the researcher, in conversation with the teachers. Naturally, in these interactions, each of us was dependent on our exchange of words to help us understand the other. After all, "[m]ost of what we know about human beings is not known by simply observing their behavior, but by grasping their communications" (Rickman, 1990, p. 302). As Hildebrand (2008) noted:

Scientific distinctions are *not* meaningful by reference to something essential or 'real' in a world beyond our experience; rather their meaning can *only* be determined by relating them to specific situations, histories, and future experimental and practical consequences. Because human beings *make* meaning—rather than discover it...in a historical, socio-

cultural matrix where organisms are trying to adapt, survive and flourish. (pp. 17–18)

Since meaning is relational, I explored my research questions using several interrelated perspectives. Varela and Shear (1999) described the utility of using first, second and third person perspectives when conducting qualitative research.

One of the prejudices I bring to this study is that I believe that the biofeedback practice and knowledge of its effects on teachers' physiology (the *knowing how*) plays a role in the meaning teachers make of *heartfulness* in their teaching practice (the *knowing that*).

Methodology

Interpretative Phenomenological Analysis (IPA) is a qualitative methodology based in the philosophical traditions of Husserl, Heidegger and Merleau-Ponty. IPA utilizes a phenomenological approach and relies on first-person accounts from the research participants, in combination with reflections from the researcher, to provide data as a basis for exploring the research questions. Larkin, Watts, & Clifton (2006) noted the importance of “giving voice” to participants and focusing on how they “make sense” of their experiences. This approach provided me the opportunity to link first person experiences to the relevant literature, thereby opening the possibility of extending concepts into possible new understandings (Larkin, & Thompson, 2012).

As this methodology acknowledges the researcher and the participants as co-creators of the interpretations that emerge, IPA is an appropriate lens through which to analyze data. According to Smith, Flowers, and Larkin (2009), IPA involves a double hermeneutic in the sense that the participants explore their own understanding of heartfulness (first-order sense-making) while the researcher connects these understandings to the relevant phenomenological research in order to shed new light on the topic (second order sense-making). A more detailed description of

IPA is presented in Chapter 3.

Limitations and Delimitations

Limitations. This exploration of heart-based pedagogy was conducted with the following limitations. First, participant teachers' individual mindfulness practices differed and involved varying levels of commitment. Second, workshops were conducted within two school terms and this level of practice may have been insufficient to achieve optimal results. Third, this research was conducted in private and charter junior high and high schools located in western Canada and therefore cannot be generalized to include all school types and grade levels. Fourth, data was derived from interview transcriptions, and therefore issues related to self-reporting, such as degree of truthfulness, must be taken into account. Fifth, teachers' demanding schedules and occasional professional commitments sometimes interfered with their consistent participation in the workshops. Sixth, it is important to note that all participants were educated Caucasians, each of whom were motivated by an interest in self-transformation. And seventh, understandings might have differed had I interviewed different participants.

Delimitations. This study was subject to the following delimitations. First, the research methodology, Interpretive Phenomenological Analysis (IPA), requires a small number of participants. This study involved six teachers. Second, recruitment of participants was limited to teachers who were already engaged in a personal mindfulness practice. Third, invitations for participation in this study were given to those teachers who had participated in heartfulness workshops.

Assumptions and key underpinnings. The following assumptions and key underpinnings informed the execution of this research study:

1. Emotion affects cognition (Varela, Thompson, & Rosch, 1993; Davidson, 2008).

2. Teachers' emotional landscapes influence classroom climate (Zakrewski, 2014).
3. Biofeedback practice and its effects on teachers' physiology plays a role in the *meaning* teachers make of heartfulness in their teaching practice.
4. Attention to the physical heart via biofeedback practice may enhance awareness of heartfulness.

Definitions

Collective Coherence. The evidence that heart rhythms synchronize across participants supports the possibility of heart-to-heart bio-communications (Morris, 2010, p. 62).

Contemplative Pedagogy. A wide range of educational methods that support the development of student attention, emotional balance, empathetic connection, compassion, and altruistic behavior, while also providing new pedagogical techniques that support creativity and the learning of course content (Zajonc, 2013, p. 9).

Heartfulness. Compassionate mindfulness (Kabat-Zinn, 2015). Paying attention to the present moment with non-reactive acceptance as in mindfulness, and then intentionally connecting with whatever life-generating emotion deep within us that the moment may offer. It is dependent upon, yet distinctly different from mindful awareness (Daugherty, 2014a, p.16).

Heartful Awareness. Because heartfulness is a trainable emotional state, a heartfully integrated way of being creates perceptual, behavioral, functional, and structural changes in the way we see our world, and the way we choose to behave in it (Daugherty, 2008, p. 140).

Heart Rate Variability (HRV). Heart rate variability (HRV) is a measure of beat-to-beat variations in heart rate—a reflection of the action of the two branches of the Autonomic Nervous System (McCraty, Atkinson, & Tomasino, 2001).

Mindfulness. Paying attention in a particular way, on purpose, in the present moment, and nonjudgmentally (Kabat-Zinn, 2003, p. 145).

Physiological Coherence. System-wide coherence emerges when beat-to-beat variations in heart rate generate a smooth, sine-like waveform in the overall pattern of HRV over time (McCraty, 2003a).

Presence. A state of alert awareness, receptivity, and connectedness to the mental, emotional, and physical workings of both the individual and the group in the context of their learning environments, and the ability to respond with a considered and compassionate best next step (Rodgers & Raider-Roth, 2006, p. 265).

Relational Energetics. The personal energy field that radiates out from our physical body...this awareness can enhance not only our own well-being but all of our living and working relationships (Petersen, 2009, p. 91).

Social and Emotional Learning (SEL). Social and emotional learning (SEL) is the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions (CASEL, 2018).

The following chapter presents an overview of the literature pertaining to the topic of heart in pedagogy, positioning it first within the broad context of contemplative practice in education and then extending the discussion to include a view of heartfulness as it relates to mindfulness. The rest of the literature review addresses the topic from the following perspectives:

Third Person: HRV biofeedback practice (embodiment);

First Person: Personal experiences of heartfulness (meaning and understanding);

Second Person: Heartfulness in the classroom (relational energetics);

The final perspective—Third Person (Plural), which relates to heartfulness in the broader system—is discussed in the concluding remarks of Chapter 7.

Chapter 2: Literature Review

One Heart, Many Facets

I came to my topic with the belief that embodiment of heartfulness, through the practice of HRV biofeedback and heartfulness meditation, may provide a unique approach with which to explore the heart's potential impact on the lived experience of teachers, their relationships with students, and ultimately, classroom climate. Through study and writing, I have come to understand the topic differently. To more fully understand the meaning of heart in pedagogy, I needed to situate it in the broader field of contemplative practice in education, and to consider heartfulness in relation to mindfulness. In light of this new understanding, a question arose: how might heartfulness practice influence the lived experience of teachers who practice mindfulness?

I offer the following overview of the literature as an entry point to my topic, fully aware that I will never arrive at a definitive answer to my research questions, but remaining open to the new information and understandings that have presented themselves to me along the way.

Overview

Contemplative practice in education.

And now here is my secret, a very simple secret: it is only with the heart that one can see rightly, what is essential is invisible to the eye. (Antoine de Saint-Exupery, 1943, p. 70)

Barbezat and Bush (2014) advocated for the benefits of contemplative practice in creating a more compassionate society (p. xii). Contemplative practice has long been associated with reflection and meditation (Zajonc, 2009), and is typically undertaken through some form of mindfulness practice, of which there are many to choose: mindful attention, mindful walking, mindful listening, and mindfulness-based stress reduction (MBSR), to mention a few. Of particular interest to this study is Zajonc's (2009) assertion that the meditative life is grounded in

love. I explored the role of the heart in contemplative practice as it manifested in the embodiment and lived experiences of teachers who volunteered to explore heartfulness in their mindful teaching practice. It is interesting to note that, although there are many accounts of teacher stress and burn-out, as referenced in the preface, burnout isn't a reality for all teachers. I believe that teachers who are passionate about their work and manage to mediate stress and burnout are those who embody heartfulness, whether or not they are aware that their practice is grounded in heartfulness, per se. Helping teachers understand the heart and its energies, may serve to introduce and reinforce heartfelt awareness in teachers' practices, and possibly provide a buffer to stressful or difficult encounters or situations that they may face over the course of their careers.

Byrnes (2012) described contemplative teaching as a framework embracing teachers, students, and educational communities. In Byrnes's view, contemplative teaching and transformation are symbiotic, and therein resides the power to support students and learning. Contemplative practice may serve as a catalyst for curriculum reform and a support for classroom practices. Seidel (2006/2014) also emphasized the link between contemplative practices and pedagogy, exploring what mindfulness might bring to the "*moment of teaching*" (p. 1903). Seidel's exploration led her to the contention that contemplative practices, rather than being merely personal and therefore disconnected experiences are, in fact, also "outward and transformational" (p. 1904) in the sense that their effects are indeed interpersonal. A teacher's mindful relationship with students embraces them in a new and connected way by opening up space and time to receive them in the moment.

Contemplative practice is deliberate in its implementation, moving away from the distancing practice of teaching *to* students, and instead embarking on an open and inviting

exploration *with* and *beside* them. This vulnerability in teaching and learning is “responsive and responsible,” and is tied intimately to “what is” (Trungpa, 2005, p. 43). In conducting this research, I hope to expand the understanding of this mindful approach to teaching by considering the contribution a heartfelt approach may offer.

Mindfulness and heartfulness.

When you hear the word mindfulness it's very important to understand that in all Asian languages the word for mind and the word for heart are the same word, so when you hear the word mindfulness, you'll have to hear the word heartfulness, or you'll misunderstand that it's simply one more cognitive exercise and it's not. The Buddhists speak of awareness as a sense in and of itself, so they speak of a sixth sense...hearing, seeing touching, tasting and smelling and then this non-conceptual knowing which we call awareness. (Kabat-Zinn, 2014)

The awareness that Kabat-Zinn referred to as “non-conceptual knowing” may be cultivated both in terms of mindfulness—by “voluntarily bringing back a wandering attention, over and over again” (referencing a popular quote by William James in the 1890s)—as well as in terms of heartfulness—by generating and sustaining heart rhythm coherence and opening our awareness to include loving kindness and compassion for others.

The focus on heartfulness practice in this study does not discount the analytical mind, as the heart and brain are intricately connected in a biological feedback loop, each influencing the other, moment-to-moment, as we experience the world through our bodies. Emotions affect cognition, and positive emotions such as love, appreciation and compassion contribute to cognitive facilitation—an enhanced capacity for reason, judgment, and decision-making that is rooted in the function of the prefrontal cortex of the brain (McCraty, 2003). This interaction is discussed in a subsequent section of this proposal. However, minds alone cannot do the work. As O'Reilly reminded us, “There is a ground of knowing below the rattle of cognitive thought” (O'Reilly, 1998, p. 38).

Mindfulness leads us to heartfulness; they are two related aspects of contemplative practice, as Daugherty (2014a) explained:

To create the conditions for heartfelt awareness to flourish, we must first clear and calm the chaos that blocks us from it. That is the gift, and miracle of mindfulness. Heartful awareness fine-tunes our human systems for receiving, and consciously connecting to the sacred energy that permeates our universe. (p. 271)

Physiological coherence, which is a system-wide state emerging from the embodiment of heartfulness, is one way to “calm the chaos” that Daugherty referred to. Coherence is generated by the harmonious heart rhythms that accompany positive emotions such as love, appreciation, and compassion. This is not to suggest that negative emotions such as anger, frustration and disappointment should never form a part of our emotional landscapes; sometimes, negative emotion is the “emotionally intelligent reaction to certain states of affairs” (Kristjansson, 2007, pp. 91). As Kristjansson clarified, “[o]ur aim should not invariably be to cool anger or extinguish it, but rather to experience it in the right proportion” (Kristjansson, 2007, p. 90). Coherent heart rhythms allow us to access our best judgment and decision-making in the face of difficult and stressful situations. The cognitive facilitation that accompanies states of physiological coherence allows us to assess an event or interaction and determine, given the situation, whether a negative emotion such as anger is appropriate, as in cases of “justified anger” (Kristjansson, 2007, p. 90). Leaving appropriate negative emotions unexpressed leaves them to “sit inside us like jagged rocks” (Pelias, 2004, p. 70).

The notion that mindfulness leads to heartfulness is also evident in Kabat-Zinn’s reference to heartfulness as *compassionate mindfulness* (2015). He offered the following definition:

Compassion is the core universal emotion. It is already here. There is nothing to get, no place to go. There's nothing to do and there is nothing special to attain. What realizing it means is making it real. And how do we make it real? By being present and trusting that the knowing is itself inherently compassionate.

According to Kabat-Zinn (2015), finding our way to our innate capacity for compassion is what is at stake: "it's more a question of uncovering our compassion rather than trying to build it up."

Other researchers have acknowledged the connection between mindfulness and compassion as well (Kornfield, 2009; Lesser, 2008; O'Malley, 2014; Salzberg & Kabat-Zinn, 2004). In her discussion of mindfulness and heartfulness, O'Malley (2014) noted "an affectionate quality in the attention" as a manifestation of heartfulness in mindfulness practice. Davidson (2015) echoed the notion of an intrinsic compassion, referring to "seeds" of compassion that flourish in community with others. And, most recently, Niemiec (2017) put the mindfulness/heartfulness relationship yet another way, asserting that, "mindfulness catalyzes heartfulness" (p. 125). He suggested that, whereas mindfulness encourages states of *being*, heartfulness involves *doing*, "taking over where mindfulness leaves off" (p. 125).

Godwin (2001), like Daugherty and Kabat-Zinn, connected heartfulness to mindfulness with the following observation: "the wisdom of the heart must catch up with our overdeveloped 'thinking heads' if we are to survive.... we must develop a new consciousness of the heart" (p. 18). Heartfulness, or compassionate mindfulness, requires cultivation through practice and nurturing. As a component of Emotional Intelligence, or "the wisdom of the heart" (Goleman, 1995/2006), compassionate mindfulness can be cultivated through training. According to Lesser (2008), "Heartfulness work is like swimming lessons: it teaches a skill that very few people seem to naturally possess" (p. 158). Lesser described the value of the relationship between

mindfulness and heartfulness as follows:

...mindfulness meditation practice can be such a powerful ally and a wonderful companion as we sail the seas of the heart. It keeps us focused and less likely to be carried away by waves of elation or despair. Mindfulness and heartfulness are a powerful duo...a quiet mind without an open heart is a pretty brittle and boring proposition. But an open heart that doesn't have the support of a quiet and tamed mind is equally unhelpful.
(p. 160)

Mindfulness has become a popular way to introduce contemplative practice in education, and many resources cite heart-based approaches to education, as mentioned previously. As an aspect of this study, I wondered how a knowledge-based (via heartfulness workshops) and experiential (via biofeedback training) approach to heartfulness may influence the scope of contemplative practice currently employed by teachers in this study.

Teaching as an emotional practice.

Emotions are at the heart of what teachers do and why they do it. (Martinez, 2015)

Hargreaves (1998, 2000, 2001) acknowledged the emotional component of teaching practice, making reference to teachers' "emotional geographies" and describing their experiences as "teaching in a box" (2001, p. 3). He stated that teachers need support in strengthening their social and emotional skills to manage the stress that comes with teaching, and to be able to stay in the profession for the long term. Resiliency has become a real issue in need of exploration if we are to understand and support teachers in their practice. An important point to note is the increasing awareness that our emotional responses guide us in our relationships. As Hatt Aoki (1993) noted, "Teachers and students often miss each other relationally, and thereby cognitively" (p. 674). Taylor (1991) described how the Western tendency to individualism is leading us to a

society where “people are enclosed in their own hearts” (p. 9), a sentiment I consider analogous to Hargreaves’ notion of teaching in a box. It is important to remember that teachers and students have not only minds and heads, but hearts and bodies as well (Byrnes, 2012, p. 22).

Embodied Practice of Heartfulness: A Third Person View

Knowing how is a statement involving a personal act...One should keep in mind the distinction between knowing that and knowing how, as the latter does not necessarily follow from the former. (Malik, 1972, pp. 4-5)

One of the assumptions underpinning this study is the notion that providing information on the physiology of positive emotion and offering biofeedback practice as a way to connect to embodiment of physiological coherence may be instrumental in establishing a base of knowledge to support the development of heartfulness in teaching practice. According to Ryle (1945):

Effective possession of a piece of *knowledge-that* involves knowing how to use that knowledge, when required, for the solution of other theoretical or practical problems.

There is a distinction between the museum-possession and the workshop-possession of knowledge. (p. 16, emphasis added)

In effect, my goal was to turn toward the “knowing how” aspect of heartfulness by providing experiences to facilitate the development of understanding, wisdom, and transformation (Hart, 2009). The following sections describe the physiological and practical foundations introduced to participants in order to provide a knowledge base to support the embodiment of their personal heartfulness practices.

Heart Rate Variability. Contemporary research offers new ways to think about the role of the heart, beyond its function as a pump (Pearsall, 1998). Researchers are investigating how emotions affect our physiology (McCraty & Rees, 2009) and ways in which heart rhythms carry emotions, all of which play a role in determining our quality of life. Harmonious function of the

heart, brain and nervous system influences the way individuals learn, think and act (Arguelles, McCraty, & Rees, 2003).

The heart is intricately connected, and highly receptive and responsive, to stimuli from all other bodily systems. These links are made possible through its unique neuronal system, referred to as the “heart-brain.” The heart-brain functions independently of the cranial brain and nervous system as a complex information processing system with the ability to constantly assess the body’s internal functions. The heart is the major generator of rhythmic information patterns in the body, affording it the capacity to synchronize the whole system by way of its extensive connectivity to all organs (McCraty et al., 2006). In fact, the heart sends more information to the brain than the brain sends to the heart (McCraty, 2003b), and it is through this relationship that the heart’s rhythms affect our perceptions and behaviour.

A normal resting heart rhythm is generally believed to be very regular; however, it has been demonstrated that the heart’s normal rhythm is highly irregular (McCraty & Atkinson, 1996). Heart rate variability (HRV) is a measure of beat-to-beat variations in heart rate and a reflection of the action of the two branches of the Autonomic Nervous System (ANS).

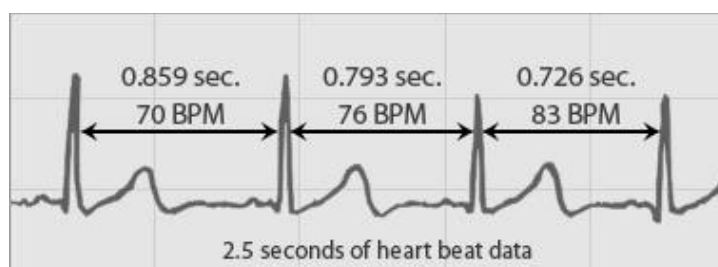


Figure 1. Beat to beat variations in heart rhythm (HeartMath, 2015).

Heart Rate Variability (HRV) has been identified as a physiological marker for wellness (Kristal-Boneh, Raifel, From, & Ribak, 1995; Krygier et al., 2013). HRV has also been studied in the context of mindfulness meditation (Delgado-Pastor et al, 2013; Krygier et al., 2013; Wu & Lo, 2008) and emotion regulation (Burg, Wolf, & Michalak, 2012; Geisler, Vennewald, Kubiak,

& Weber, 2010). A high level of HRV indicates a state of physiological coherence, which is described as an increased synchronization and efficiency among cognitive, physiological and emotional systems (McCraty et al., 2001; McCraty, Atkinson, Tomasino, & Bradley, 2006). Key benefits of physiological coherence include stress reduction and improvements in cognitive function (McCraty, 2003b).

In general, the concept of coherence can be described as “the quality of forming a unified whole” (Oxford Online Dictionary, 2015), which is what HRV coherence training technologies attempt to facilitate. These biofeedback devices are designed to help individuals learn to regulate their emotions. In this study, HeartMath’s HRV monitoring (biofeedback) programs were used to familiarize teacher participants with the heart rhythms associated with emotional states.

In the context of this study, I interpret “self-regulation of emotions” as the cultivation of harmonious heart-rhythms that facilitate our relationships with others and the natural world—connections that support our well-being and help us to flourish. Figure 2 (below) illustrates heart rhythm patterns associated with frustration and appreciation, as measured by HeartMath’s biofeedback programs (emWave Pro and “Inner Balance” Apps for iPad and iPhone).

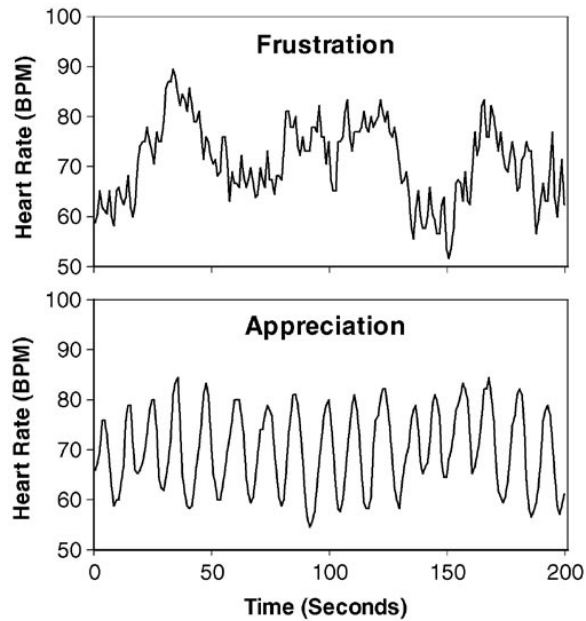


Figure 2. Heart rhythm patterns during frustration and appreciation (HeartMath, 2015).

Positive emotion has been shown to play an important role in achieving and sustaining physiological coherence (McCraty, Atkinson, & Tomasino, 2001). The discovery that emotions have a profound influence on the activity of the Autonomic Nervous System (ANS) has led to the idea that emotions are the result of the brain, heart, and body working together, mediated by the action of the ANS (HeartMath, 2002; McCraty, 2003; Yardley-Jones, 2006).

With practice, individuals have the ability to self-generate a positive emotional state, which facilitates a body-wide shift to physiological coherence. In a state of coherence, ordered and harmonious heart rhythm patterns flow along the pathway from the heart to the brain (McCraty et al., 2001; Simmons, 2010). Experiencing sincere positive emotion helps us access these highly ordered heart rhythms and allow us to stay “in sync” (McCraty, 2002).

The HRV biofeedback technology used in this study provides a non-invasive method of evaluating heart rhythms through the use of an earlobe plethysmographic sensor that records pulse data (see Appendix D). Visual and audio signals indicate states of low, medium or high coherence in real time and as an accumulated score. Progressing through the four available

challenge levels (low, medium, high and highest) helps to raise baseline coherence levels as people learn to consistently produce more sine-wave-like heart rhythm patterns. Additional support for coherence training is available through the Quick Coherence Technique (QCT), which is a basic positive-emotion-generating technique taught by HeartMath. Self-generating a positive emotion is one of the steps involved in the Quick Coherence Technique (QCT). The QCT takes advantage of the characteristic smooth heart rhythm pattern generated by positive emotions, such as love or appreciation, to influence a shift to system-wide harmony and function (McCraty et al., 2006). Focusing on the heart, when combined with feelings of love and appreciation, drives the system into a coherent state; with practice, the system is then able to help replace old incoherent patterns in the body. Three basic steps (heart focus, heart breathing and heart feeling) may be incorporated into coherence training sessions as required (see Appendix D).

Bernston et al. (1997) examined HRV and its clinical implications, exploring the caveats surrounding the use of this quantitative measure of physical and psychological well-being and autonomic system function. They noted the need for caution when considering HRV in relation to psychological states. They concluded that changes in psychological “events” may only be *inferred* by changes in HRV (p. 641). In this study, however, the practice was to learn to access an emotion or psychological event (e.g. love or appreciation) in order to facilitate a change in HRV toward physiological coherence.

In another line of research supporting this mechanism, Fredrickson’s (2004) “Broaden and Build” theory emphasized the power of positive emotion to “undo” negative emotion, thereby reducing the negative effects of stress. Fredrickson (2004) identified two distinct types of

positive emotion (mild joy and contentment) that have the capacity to undo the physiological effects of negative emotions.

Optimal states, in which we experience ease in life, are considered positive, while those we experience as chaotic are considered negative (Damasio, 2003). HeartMath's remarkable discovery that emotions are carried by heart rhythms gives us the ability to identify emotions by their particular HRV pattern. To date, the range of emotions identifiable by their HRV patterns includes love and appreciation, anger and frustration, mental focus, and relaxation.

Although our intuition tells us that a connected, heartfelt way of being is available to us, (Daugherty, 2014a), we have not typically been made aware of our ability to intentionally access this balanced, coherent state that holds such promise for improving our well-being and helping us to flourish. Daugherty (2014a) described moments of heartfelt connection with others and to the world in general as a phenomenon that we recognize:

We know those times when the life force within us is thriving.... We feel it in our hearts, our souls, our brains, and indeed in every cell of our body. Our body reflects it back and it becomes the reality we live. It is truly an embodied phenomenon. It is filled with passion and purpose, calmness and clarity; being grounded in this life force is what gives us the experience of being fully alive. (p. 2)

This study focuses on the role of the heart in mediating teachers' emotional landscapes. Consistent practice with biofeedback training has been shown to facilitate the spontaneous generation of physiological coherence over time (McCraty et al., 2009). The more often teachers access a coherent state, the more likely it is that their systems will reset, allowing harmonious heart rhythms to be sent from the heart to the brain more often than chaotic rhythms. As I am interested in the lived experiences of teachers who have engaged in regular practice with the

biofeedback training, this study did not include quantitative measures of teachers' coherence levels.

HRV and heartfulness practice.

The real voyage of discovery consists not in seeing new lands, but in seeing with new eyes. (Marcel Proust)

We face many problems, many of them man-made. It is our responsibility to solve them. We need to use our human intelligence to do this.... We are talking about coming to see things differently.... Our real responsibility is to find a new approach, a more holistic view so the generation of the 21st century will have the opportunity to make this a happier, more peaceful world. (Dalai Lama, 2015)

The Dalai Lama, in this address to the Mind and Life Institute's conference on the topic of Perception, Concepts, and Self, recognized that "seeing things differently" and "finding a new approach" may bring an opportunity to our living well together in the world. Schwartz and Russek (1998) referred to the 21st century as the Century of the Heart, invoking the term "energy cardiology" (p. ix) and calling for "a celebration of the mind that can come to know its heart" (p. xiii).

In the context of this study, heartfulness was examined as a way to expand our understanding of contemplative practice in education by intentionally exploring the affective component of traditional mindfulness and meditation practices. As evidenced by the research literature, our westernized mindfulness teaching (e.g. Mindfulness Based Stress Reduction) does not prioritize an emphasis on intentionally teaching and cultivating positive emotions. Davidson (2010) offered "the important idea that a major target of mindfulness practice is on emotion. Transformation in trait affect is a key goal of all contemplative traditions" (p. 8). He noted the need for more attention and research to be devoted "within the emotion domain of contemplative practices" (p. 11). Likewise, van den Brink and Koster (2015) indicated that loving-kindness and

self-compassion are ways to “deepen mindfulness practice and be more compassionate in life” (p. 28).

In terms of a heartfulness practice for teachers, HRV biofeedback training offers the opportunity to strengthen positive traits that are “grounded in daily actions” (Hanson & Mendius, 2009, p. 121). Teachers in this study practiced mindfulness and have participated in a series of heartfulness workshops, offered by the researcher, in their respective schools. Building on heartfulness practices was the goal of the workshops, as the consistent cultivation of physiological coherence connects to positive experience through disrupting habitual ways of being and responding. As Hanson (2014) noted, “[y]ou become more compassionate by repeatedly installing experiences of compassion. You become more grateful by repeatedly installing experiences of gratitude. You become more mindful by repeatedly installing experiences of mindfulness” (p. 21).

Hanson (2014) made a distinction between *activation* and *installation* concerning mindfulness practice. A lack of installation refers to the weakness of practice that occurs when practitioners find it difficult to establish consistency in practice. Practitioners should practice “Taking in the Good” to “increase self-acceptance, self-compassion, and tolerance” (p. 30). By consciously focusing awareness on the positive with the help of HRV biofeedback and heartfulness practices, teachers can learn to access states of physiological coherence more easily, and expand their awareness to include heartfulness more consistently, instead of falling into old habits of reactivity that may have been reinforced through our built-in “negativity bias” (p. 30).

Heartful awareness “is trainable through active and intentional engagement” (Daugherty, 2014a, p. 271), as HRV biofeedback techniques enable people to monitor their heart rate variability in real time. As teachers engaged with the biofeedback program, they began to gain a

different understanding of the notion of heartfulness: the HRV techniques afforded them new practical knowledge gained through experience, a phenomenon known as *phronesis*, or “knowledge in action” (Moules, et al., 2015, p. 37).

Attending to our “cardio-energetics” (Pearsall, 1998, p. 14) through HRV biofeedback training is a powerful way to help us develop energy-management skills that support resilience—the ability to prepare for, adapt, and recover from stress and adversity. These capacities are developed with practice as we learn to reduce energy drains and shift to positive emotional states on a regular basis.

Embodiment of heartfulness. In this study, participant teachers were introduced to several heartfulness meditations, such as Loving Kindness Meditation (LKM), Compassion Meditation (CM) and Tonglen practice. HRV biofeedback connects the emotions and feelings associated with these practices to the ways in which they are felt and interpreted in and by the body. As Daugherty (2014a) reminded us, “Heartful awareness promotes love, peace and compassion beyond cognitive understanding. It is an embodied presence we bring to the world, and the world is changed because of it. It is trainable through active and intentional engagement” (p. 271). HRV biofeedback provides the means to access this active and intentional engagement in the context of regular, physiological, heartfulness practice. Daugherty described how “momentary shifts of heartful awareness, and their great cumulative effect...create a new baseline way of being in the world” (p. 136).

Regular practice with heartfulness meditations, paired with HRV biofeedback training, may open up the possibility for teachers to embody heartfulness by making them aware of the effect that positive emotion has on physiology. Over time, teachers will come to recognize instances in which physical, emotional, and mental states are in balance and harmony, and learn

to access that equilibrium. As Siegel (2010b) described, heartfelt awareness has the power to focus attention in such way that the flow of energy can be shaped by experience.

Becoming aware of the relationship between our emotions and our energetic bodies, and their contributions to the energy fields we inhabit, is a powerful way to embrace heartfulness in an embodied way. McCraty, Bradley, & Tomasino (2004) suggested that, “consciousness actually emerges from the brain and body acting together. A growing body of evidence suggests that the heart plays a particularly significant role in this process” (p. 15). It is important to note that, although individuals may access heart rhythm coherence by focusing awareness on the heart and activating positive emotion (as in the QCT described above), this meditative practice is distinguishable from states of relaxation or deep mindfulness meditation, wherein the parasympathetic branch of the ANS is predominantly activated. In instances of physiological coherence, both the sympathetic and parasympathetic branches of the ANS work together in balance, thereby supporting harmonious communication between the heart and the brain.

Collective coherence.

*While “being with” is primary, it’s often isolated in mindfulness-based practices.
(Hanson, 2014, p. 43)*

Morris (2010) described the collective coherence that occurs when groups of individuals are in proximity to each other. Collective coherence has also been conceptualized as “heart field interactions between individuals” (McCraty, Bradley, & Tomasino, 2004, p. 17) in which the heart’s electromagnetic energies are shared between and among individuals in pairs or in groups. These researchers extended the concept of collective coherence to include social interaction, in which “energetic communication via the heart field facilitates development of an expanded consciousness in relation to our social world” (p. 17). They described how heart coherence and social coherence can “mutually reinforce each other,” meaning that, “as individuals within a

group increase psychophysiological coherence, psychosocial attunement may be increased, thereby increasing the coherence of social relations” (pp. 18-19).

Relational energetics.

I look to a tomorrow when teachers will balance their outer preparation of course content with an inner preparation in which they hold their students in contemplation and heartfelt communion.... It is time for us to give birth to a holistic vision in which individual consciousness is seen as a field embedded in living fields of collective awareness. (Bache, 2008, p. 141)

Hanson and Mendius (2009) stated, “the more you are aware of your own emotional and bodily states...the better you are at reading others. In effect, the limbic networks that produce your feelings also make sense of the feelings of others” (p. 126), thereby creating “a field of socio-emotional connection” (p. 18). Awareness of the shared energy field that we radiate from our hearts serves to enhance our own sense of well-being, and also influences all of our “living and working relationships” (Petersen, 2009, p. 91). It is possible that teachers who practice HRV biofeedback in addition to increasing their awareness of heartfulness are those who make it possible to influence classroom and school climates for the better, as familiarity with their own heart’s energies helps them to recognize similar states in others. In effect, they may become “better receivers of cardiac signals from others” (McCraty, 2003b). Regular practice with HRV biofeedback programs such as emWave Pro and Inner Balance has the potential to “strengthen the awareness that, by acting together, we create a collective energy that nourishes everyone present and helps our shared work” (Bache, 2008, p. 114).

Embodiment in heart-based teaching.

Our own body is in the world as the heart is in the organism. (Merleau-Ponty, 1945/2013, p. 209)

As a Western industrialized culture, we have migrated from the ancient wisdom of the heart to the predominant conception that the brain is the center of wisdom and intelligence. But,

although we have been distanced from the notion that our hearts are integral to our embodied experience of the world, the role of the heart in our moment-to-moment experience and in the quality of our conscious experience extends far beyond the metaphorical. As Godwin (2001) reminded us:

Wholeness and *wholeheartedness*, are concepts to be achieved all over again, but this time on a sturdier level of consciousness. We are image-making creatures, and we form our images out of the materials of our experience. The science of a given time will not only provide metaphors for its intangibles, but also images of how we see ourselves. (p. 112)

Educational discourse is imbued with allusions to the heart in teaching. Many contemporary resources for teachers embrace the notion of the heart in metaphorical terms, in some instances with reference to the contemplative in education (Heart-Mind, 2013; Schonert-Reichl & Hymel, 2007) and teacher engagement (Bennett, 2014; Weaver & Wilding, 2013), and in others with reference to the emotional domain and the relational in education (Alberta Education, 2010; Cohen, 2006). Themes of heart-based teaching infuse the discourse; however, the meaning of the term “heart-based teaching” often eludes our understanding. In many cases, the practical, prescriptive *steps* for an *embodied* view of teaching from the heart—including descriptions of the physiological workings of the heart in concert with the brain—remain vague. Investigations recognizing lived experience of heartfulness have received little attention in comparison to positivist accounts of its benefits, despite the fact that such an approach is a valuable source of insight into a “direct, hands-on, pragmatic approach to experience with which to complement science” (Varela, Thompson, & Rosch, 1993, p. xviii).

An emphasis on literacy in education has contributed to a shift in focus from body to mind, effectively disconnecting us from our senses as we engage in textual experience over lived experience (van Manen, 1991). In van Manen's view, educational knowledge is cut off from lived experience with the consequence that "understanding...has "gone to our heads,' so to speak, has become 'sense-less'" (p. 190). He encouraged us to ask "how educational knowledge can be synchronized with what Merleau-Ponty calls the 'body-subject'" (p. 190). As poet Bronwen Wallace reflected on the idea of holistic learning,

*How else to say it
except that the body is a limit
I must learn to love,
that thought is no different from flesh
or the blue pulse that rivers my hands.
(Bronwen Wallace, 1985, Common Magic, p. 59)*

Abram (1996) supported the idea that knowledge is not accumulated by a "self-subsistent, disembodied, transcendental ego," but relies on the living body to "experience and inhabit the world," affording us "the very possibility of contact, not just with others but with oneself—the very possibility of reflection, of thought, of knowledge" (p. 45). Abram's view follows the work of Merleau-Ponty, whose ground-breaking extension of phenomenology to include the body as the mediator of experience remains significant to the study of perception to this day.

Perception is not a science of the world, it is not even an act, a deliberate taking up of a position; it is the background from which all acts stand out, and is presupposed by them: The world is not an object such that I have in my possession the law of its making; it is the natural setting of, and field for, all my thought and all my explicit perceptions.
(Merleau-Ponty, 1945/2013, p. lxxiv)

Merleau-Ponty was instrumental in situating the body as indispensable to our knowledge and understanding of being in the world. His work drew upon the phenomenology laid out by Husserl, its principal founder. Merleau-Ponty acknowledged consciousness and nature as equal influences on our experience of being in the world. He became fascinated with the “meaningful organization that arises within the responsive behaviours of physical systems, animals and human beings, thereby exposing a meaning within the movements of nature” (Morris, 2008, p. 112). For Merleau-Ponty (1945/2013), the body is the conceptual bridge from perception to the heart: “Our own body is as the heart is in the organism. It keeps the visible spectacle constantly alive, it breathes life into it and sustains it inwardly, and with it forms a system” (p. 209).

Varela, Thompson, & Rosch (1993) embraced Merleau-Ponty’s conception of bodies existing simultaneously as “physical structures and as lived, experiential structures—in short, as both ‘outer’ and ‘inner,’ biological and phenomenological” (p. xv). These researchers described knowledge, cognition, and experience as the “fundamental axis” for embodiment (p. xvi). Aligned with Merleau-Ponty’s view of “double embodiment,” they called for a rejuvenation of his theory to encompass the notion of *enactivism* as a counter to traditional assumptions of cognition as a representational system independent of perception. They perceived cognition as “embodied action” (p. xx), and emphasized that the “world is not separate from us” (p. 3).

Heartful practice can allow teachers to become more in tune with the relationship between their physical and social environments. As Goldberg (2005) reflected, “[o]ur bodies, unlike our minds, are in the present moment” (p. 121). Relating this statement to heartfulness in teaching led me to wonder if teachers who are aware of their heart’s energies, and in touch with their emotional landscapes from moment-to-moment, may be better able to relate compassionately to situations and experiences as they arise in the classroom.

Gallagher (2005) posed a relevant question: “[t]o what extent, and in what precise way, does one’s body constrain or shape the perceptual field?” (p. 17). In terms of the heart in pedagogy, this research may be able to provide some insight. As has been discussed above, emotion affects cognition, and positive emotion facilitates cognitive function, allowing for a widening of perception. Fredrickson’s (2004) Broaden and Build Theory of Positive Emotion, mentioned previously, supports this view as well.

Understanding Heartfulness: A First Person View

Emotion, affect and mood.

The world in which we find ourselves before we set out to calculate and measure it is not an inert or mechanical object but a living field, an open and dynamic landscape subject to its own moods and metamorphoses. (Abram, 1996, p. 32)

Heartfulness practices in this study were introduced to participant teachers in order to increase their awareness of the affective component of their contemplative practices. Teachers were asked to voluntarily invoke states of love, appreciation, and compassion during HRV biofeedback sessions and also during the heartfulness meditations that were part of the program of workshops they participated in. By paying attention to the lived experience of heartfulness in this way, teachers were encouraged to consider heartfulness from a first person perspective.

Emotion, affect, and mood and their different usages continue to be a “source of vibrant debates” (Frevert et al., 2015) due to the overlap in meaning between the terms (Plutchik, 2003, p. 63) According to Plutchik, emotion and affect are often used interchangeably, with mood understood to be “a longer lasting emotional state...sometimes as a low intensity background” (p. 63) Kornfield described moods as “mental states that flavor consciousness” (p. 129).

Sedikides (1992) described how mood can “have its effects at the encoding stage of information processing” (p. 277). More recently, Thompson (2003) stated, “affect has a deeply rooted biological basis; affective disposition is tied to certain neuronal dispositions” (p. 121).

Both statements are consistent with the discovery that emotion affects cognition (McCraty, 2003). Although we are not always conscious of our emotions as we experience the world (Davidson, 2003), it is interesting to consider the possibility that, by paying attention to our emotional states and learning to shift to more positive emotions in the face of stress or adversity, we may create for ourselves a different “attunement to ourselves and to our situatedness in the world” (Stolorow, 2013, p. 8).

Heidegger reflected, “A mood assails us. It comes neither from ‘outside’ nor from ‘inside’, but arises out of ‘Being-in-the-world, as a way of such Being’” (Heidegger, 1962/2008, p. 176). According to Heidegger, as Thompson (2003) explained, “one finds oneself always in a certain disposition...as pre-reflective being-in-the-world” (p. 121). Heidegger introduced the concept of *bodying forth*—“the spontaneous mediating activity that I cannot get behind or objectify because it is already opening up the perceptual ‘horizon’ that I exist in” (Rafeul, & Nelson, 2013, p. 272). Heidegger’s ideas on mood and the body contribute to the interpretation of the meaning of heartfulness in this study.

Social and Emotional Competence (SEC). Teachers’ own social and emotional skills are considered an integral part of Social and Emotional Learning (SEL) programs in schools, and researchers refer to teachers’ roles as dependent on their own Social and Emotional Competence, or SEC (Beland, 2017; CASEL, Jennings & Greenberg, 2009; Schonert-Reichl, 2017; Zakrzewski, 2014). As Schonert-Reichl (2017) pointed out, “[t]eachers are certainly at risk for poor social-emotional wellbeing. Research shows that teaching is one of the most stressful occupations: moreover, stress in the classroom is contagious—simply put, stressed-out teachers tend to have stressed-out students” (p. 137). The workshops in this study provided an opportunity for participant teachers to learn about and develop SEC.

Heartfulness in the Classroom: A Second Person View

Heartfulness in the classroom involves an intersubjective, second person perspective with respect to the teachers and students who are connected to each other through the shared relational energetics of the heart. Positive teacher-student relationships foster positive classroom environments (Aoki, 1992, 1993; van Manen & Li, 2002). Bache (2008) invited teachers to meet their students in a classroom that is “more alive and more interconnected than we had ever thought possible and, in the process, take their teaching to a more conscious level” (p. 1). As Moules et al. (2014) reflected, “very often our practices go unnoticed and unexamined, lost to discourse, assumption, and involvement; often they remain in the state of being taken-for-granted” (p. 4).

In this research I examined heartfulness in pedagogy with the hope that new understandings may lead to the support for and introduction of deliberate heartfulness practices in education. As Moules et al. (2014) emphasized, “[f]or us to understand...requires that we engage with those who have lived through the experience so that we might learn from them” (p. 4). Examining the experiences of teachers who are practicing heartfulness may provide new insights into classroom dynamics.

Collective coherence.

At the heart of the universe is a steady, insistent, beat: the sound of cycles in sync.... For reasons we don't yet understand, the tendency to synchronize is one of the most pervasive drives in the universe, extending from atoms to animals, from people to planets. (Strogatz, 2004)

Rozman and Martin (2015) described the field of consciousness in which we live, contribute to, and feel in our hearts as “reflecting back to us.” They identified love and compassion as emotions that connect us to the field in a positive way, as opposed to negative emotions that cause disconnection. McCraty and Childre (2010) pointed out that physiological

coherence increases personal well-being and also contributes to the global field environment, which helps “strengthen a mutually beneficial feedback loop between human beings and the earth itself” (p. 22).

The field of particular importance to this study involves the teacher and students who are connected to each other through shared relational energetics of the heart. McCraty and Childre (2010) stated:

A growing body of evidence suggests that an energetic field is formed between individuals in groups through which communication among all the group members occurs simultaneously. In other words, there is a literal group ‘field’ that connects all the members (p. 20).

Abram (1996) linked this concept of a group field to phenomenology and embodiment:

It is as visible, animate bodies that other selves or subjects make themselves evident in my subjective experience, and it is only as a body that I am visible and sensible to others. The body is my insertion into the common, or intersubjective field of experience. (p. 44)

A teacher’s state of well-being may be shared with students through “heart-to-heart biocommunications” (Rozman, & Martin, 2015, p. 62). Rozman and Martin also put forth the notion that “we are responsible for what we feed the [energetic] field each day” (p. 62). Morris (2010) demonstrated that an individual’s state of physiological coherence facilitates increased levels of coherence in others in her presence. In a related investigation, Pittinsky and Montoya (2016) designated empathy as a contributor to “positive intergroup relations” (p. 511). Worline, in a comment offered to a workshop hosted by the Greater Good Science Center, emphasized the significance of collective coherence for education by stating, “[j]ust by virtue of your presence and by virtue of changing the conversation with people around you, you will begin to change

your school environment” (cited in Zakrzewski, 2014).

Social and emotional learning (SEL).

There needs to be attention paid to the importance of teachers’ coping, to ensure that beginning teachers are equipped in their preparatory studies with the skills and strategies to be able to cope with the considerable demands of the work they are called upon to undertake. (Richardson, Watt, & Devos, 2013, pp. 248-249)

Since this research is situated as an exploration of heartfulness in service of better classroom relationships and environments, it is concerned with “the social side of emotional experience” (Miller & Leary, 1992, p. 202). Thagard (2010) linked positive relationships and social belonging to overall well-being (p.152). Richardson, Watt, and Devos (2013) agreed, referring to well-being in terms of “a satisfying emotional balance” (p. 249). Considering the relational work inherent in teaching practice, and the importance of teacher-student well-being in educational contexts, SEL initiatives may contribute to lower stress rates among teachers, leading to effective learning in students.

A physiologically-grounded heartfelt approach to teaching practice may complement our understanding of SEL initiatives in education (Davidson, 2008). As Goleman (1995/2006) noted, some teachers may not be comfortable embracing the emotional component inherent in the teaching process, while others might teach with heart seemingly naturally. A deliberate heartfulness practice may provide support for those who are uncomfortable with the concept at first, as well as supplement those who embrace heartfulness easily.

Goleman (1995/2006) noted that standard teacher education programs provide little support in the area of Social and Emotional Learning (SEL). To reinforce the value of the emotive component in education, Hargreaves suggested that curriculum developers “incorporate the emotional dimensions of teaching and learning into learning standards or curriculum targets for students, and into professional standards or competencies for teachers and administrators”

(1998, p. 851). Recent educational researchers (Hargreaves, 1998; Schonert-Reichl & Zakrzewski, 2014) have underlined the benefit of embracing SEL initiatives, acknowledging their positive impact on classroom environments and their potential benefit to teacher training programs.

Social and Emotional Learning initiatives are currently implemented in some curricula (CASEL, 2013; Schonert-Reichl & Hymel, 2007) and are presently framed in terms of mindfulness (Kabat-Zinn, 2005; Siegel, 2010a) and emotional intelligence (Cohen, 2006; Goleman, 2008, 2005). The heart's role is typically expressed metaphorically in terms of love (Fowler, 2012; Hatt, 2006; Walsh, 2014).

Classroom climate.

I have come to a frightening conclusion. I am the decisive element in the classroom. It is my personal approach that creates the climate. It is my daily mood that makes the weather. (Ginott, 1972, p. 15)

The importance of the teacher's emotional landscape is not a new concept in education, as Ginott's quote demonstrates. I include it here to illustrate the idea that the classroom environment as a *climate* has a history in educational literature. But while Ginott seemed to imply that the teacher's daily mood is the sole contributing factor to classroom climate, I however interpret his quote as indicating that the teacher's mood is *shared* with the students, and can be influenced by their reaction to it.

Ginott offers a poignant description of the dynamic emotional landscape enveloping and influencing the relationship between teachers and students. Written in 1972, it foreshadowed the burgeoning interest in the area of Social and Emotional Learning (SEL) in the classroom. The shared emotional landscape between teachers and students creates an atmosphere in which teaching and learning occurs. Smith (1999), quoting Carl Jung, highlighted an important nuance

in adult/child relationships, stating, “children react much less to what adults actually say than to the ‘imponderables in the surrounding atmosphere’” (p. xiiv). Bache (2008) described the shared emotional landscape in which teaching and learning occurs as “the influences that radiate around us as we teach” (p. 1). In terms of the classroom atmosphere, these observations underscore the potent influence a teacher’s presence has on students, beyond what he or she may say or do in a given circumstance.

Abram (1996) referred to “the invisible atmosphere that animates the visible world—the subtle presence that circulates both within us and between all things” (p. 15). This subtle presence is sensitive to the energy a teacher contributes to it, moment by moment. Awareness of the ability to shift into physiological coherence may help a teacher influence this shared atmosphere in a positive way. Abram (1996) described this atmosphere as a living field:

Despite all the mechanical artifacts that now surround us, the world in which we find ourselves before we set out to calculate and measure it is not an inert or mechanical object but a living field, an open and dynamic landscape subject to its own moods and metamorphoses. (p. 32)

The concept of the classroom as a living field in which teaching and learning occurs has been taken up by Cohen and Bai (2007), who referred to teachers as “energy workers” as well as “awareness workers” and “modellers” (p. 8). The energy they are concerned with might be conceptualized as Jung’s *imponderables*, or Abram’s *invisible, animating atmosphere*, or, in Daoist terms, the Qi, or the “felt quality of energy” (p. 8). Awareness of Qi as an energy to be worked with and cultivated relates to heartfulness and its power to promote positive energetic relations between teachers and students. Cohen and Bai described the classroom as a “perfect

example of a *dao-field*” (p. 7) infused with Qi’s vital energy—a living field connected directly to perception and action:

Anywhere humans reside, including our classroom, there is a *dao-field*.... While it may be true that the *dao-field* is something that is there whether we perceive it or not, what we are interested in is the question of how to get in touch with it and become one with it.

(p. 7)

This research may offer some insight into the question of how teachers might get in touch with and become one with the *dao field* by exploring the energetics of the heart as they practice generating harmonious heart rhythms, thereby connecting themselves and their students to the global and cosmic rhythms in which we are all immersed. The impact of a shift to heartfulness may have wide-ranging implications for positive changes in teacher-student relationships and classroom climates.

Heart-based teaching.

It takes more than courage to teach—it takes awareness. Heart-centered teachers deliver caring, intelligent, passionate and high-quality instruction to students. The source of the ability to perform that kind of work is within the individual teacher. This source can be drained by personal overwork or by the response to the demands of an educational system that overworks and under-supports teachers. Students learn when teachers care, but when passionate teachers burn out from compassion fatigue, no one wins. Teacher engagement is diminished, student learning is compromised, and school environments suffer. (Krop, 2013)

In terms of a teacher’s experience, heart-based teaching calls for attention to relational energetics between themselves and their students in order to open up space and meet students meaningfully in the moment. By attending to her emotional landscape and learning to recognize and regulate emotions, a teacher stands to cultivate an increased ability to be open to the interpretation of others and to accommodate new and different perspectives without being judgmental and uncompromising. O’Reilly (1998) reminded us:

Whenever you move one small peg in classroom culture—or the culture of any organization—everything you used to take for granted will shift. Things get interesting because people have to wake up and move out of their programmed behavior (p. 27).

Changing familiar habits and becoming aware of one’s own emotional energies and their influence on others can have a profound impact on a teacher’s responsiveness to students and her reactivity to adversity in the classroom. Bosetti (1995) cited Matthew Fox, a Dominican priest and founding director of the Institute in Culture and Creation Spirituality, who described the heart as central to relationships and work:

When I’m operating at my best, my work is my prayer. It comes out of the same place that prayer comes out of—the center, the heart. All work is meant to be heartwork: it comes out of our heart and goes to the heart. All authentic work is an effort to move other people’s hearts...Work is relationships. And other relationships such as friendship and mutuality and community and intimacy, I hope, also come out of the same center. (p. 45)

Teachers must remain connected to students. Hatt (2005) advocated for “being with and for the child in one’s practice” (p. 672) as an important way to “occasion” learning. With this statement, Hatt implicated both teacher and student in the creation of a situation of pedagogical love, a circumstance that is not possible in the absence or marginalization of the other. Hatt referred to pedagogical love as the attending to “pathic” knowledge—a type of knowledge that resides outside of the cognitive and intellectual. This type of knowledge can be described as “relational,” as it pertains to the sensibility of being in the world as one and the other.

Maturana and Varela (1998) likewise described the “occasioning” of learning as an expression of love (p. 247). Pedagogical love can thus be interpreted as encompassing those instances in which a teacher understands and accommodates the needs of the student in the

context of a connected relationship. As mentioned previously, Aoki (1993) pointed out that “teachers and students often miss each other relationally, and thereby cognitively” (p. 674). Learning to recognize and accommodate student needs as learning opportunities constitutes an embrace of the other and opens up an environment in which learning can flourish. By engaging students with a full acknowledgement of the other, a teacher can create the space to embrace each student in the moment and respond with compassion and acceptance. In Gadamer’s (1960/2013) terms, the radiance that manifests in such instances “strikes us with immediate self-evidence as valid. It ‘appears’ or ‘shines’ (*scheinen*) as a phenomenon” (p. xvii).

So far, this discussion has focused on the possibility that a teacher’s heartfulness will enhance her relationships with students—and this is a prejudice I bring to this research. Some researchers have noted that there is a possibility that supportive, caring relationships may not always be possible, despite a teacher’s best efforts. In Lesser’s view (2008):

The journey through the landscape of the heart can be lonely. Often the other person doesn’t choose to make his or her part of the journey toward you. Even as you change and become more understanding and heartfelt, there will be difficult people in your life, people who refuse to join you in the dance steps. Things won’t miraculously mend in all your relationships. Heartfulness allows us to go halfway toward harmony with another person. (p. 190)

Regarding this difficulty, Daugherty (2014a) acknowledged that the goal is not to change anyone else, but to extend an open invitation to practice while accepting that some might not be ready or might not be comfortable enough to join you. Sensitivity to the emotional climate in the classroom can be a powerful tool that teachers can utilize in creating a positive learning environment.

Teacher as environment.

We never educate directly, but indirectly through means of the environment. (Dewey, 1944, p. 19)

The title of this work, “Teacher as Environment,” acknowledges one of the assumptions I bring to this research: that a teacher is able to create a positive and energetic classroom environment via the harmonious and shared heart rhythm patterns that emerge when she is in a positive emotional state such as love, appreciation, compassion, or joy. Noting the connectedness of thoughts and emotions between oneself and others in classroom environments, Raider-Roth (2005) observed that individuals “flourish or wither dependent on the relational climate” (p. xii). Her observation of connectedness echoes Abram’s (1996) assertion that humans exist in “not a private, but a collective dimension—the common field of our lives and the other lives with which ours are entwined” (p. 40).

The cultivation of one’s inner capacities in support of the development of leadership abilities has been embraced by Palmer (2014), whose following comments expressed the central concept grounding my research:

Teaching, like any truly human activity, emerges from one’s inwardness, for better or worse. As I teach, I project the condition of my soul onto my students, my subject, and our way of being together. The entanglements I experience in the classroom are often no more or less than the convolutions of my inner life. Viewed from this angle, teaching holds a mirror to the soul. If I am willing to look in that mirror, and not run from what I see, I have a chance to gain self-knowledge—and knowing myself is as crucial to good teaching as knowing my students and my subject.

The concept “teacher as environment” suggests that a teacher has the potential to bring an atmosphere of order, harmony, and balance to the classroom environment by cultivating these

qualities in her own emotional landscape. Although I am not trained as a teacher, I have always been involved in teaching and learning (a field) in some capacity throughout my life. As I trained at the Institute of HeartMath as a certified coach for their Resilient Educator program, it seemed quite natural for me to bring the strategies I was working on to the field of education. And that field felt open for me. As Jardine (2014) noted, “the field isn’t identical to the one who immediately experiences it. Fields are multiple, various in their nature. They are not objects that have properties or not—they are variegated. Knowledge comes from the field asking something of me in a particular way.” Answering the call to study heartfulness in teaching is my way of contributing to the field of knowledge surrounding heart in pedagogy.

Heartfulness in Schools: A Third Person (Plural) View

The biggest day-to-day repository of constructive power to improve schools is in the hearts, minds, and hands of the people who work in them. (Sirotnik 1987, p. 43)

Sirotnik’s quote, taken from the Alberta Education publication entitled “The Heart of the Matter” (Alberta Education, 2005), highlights the value of cultivating the human capacities, as Emotional Intelligence is an important component to education (Goleman, 1995/2006, p. 151). This document recommends several “small changes guided by a larger vision” (Alberta Education, 2005, p. 137), but school improvement depends on more comprehensive Professional Development for teachers, as “one-day workshops alone are not enough” (Alberta Initiative for School Improvement 2003, p. 10). In the context of this research, the specific capacities under consideration for more effective teaching involve emotional self-regulation and relationships with students, with the expectation that gains in these areas will improve classroom climate.

Heartfulness and curriculum.

Curriculum has two functions, it provides a mirror in which students see themselves, but it also provides a window through which students see others. (Alberta Education, 2005, p. 45)

Maxine Greene is one of the first influential curriculum scholars in the domains of interpretive research and education (Moules, McCaffrey, Morck, and Jardine, 2011). As a passionate curriculum reformist and fierce educational advocate, Greene retains an enduring relevance to contemporary thinking about curriculum, as her work emphasized the possibility of building a curriculum based in love and acceptance. Her insistence that we “encounter other human beings with the capacity to be concerned” (p. 189) opens up a two-way street where teachers become involved in a relationship that may enhance their own quality life while they continue to mentor the students in their charge.

Greene’s ideas are as compelling and relevant today as they were when she began writing decades ago. Her insights foreshadowed, and possibly inspired, a move to the contemplative and the holistic as elements of a meaningful curriculum. She noted the importance of “teachers who are consciously and reflectively choosing themselves as participants in school renewal” (1997, p. 2). Greene felt that, as a society, we are lacking in *wide-awakeness*, and decided that teachers should be individuals “who have learned the importance of becoming reflective enough to think about their own thinking and become conscious of their own consciousness” (as cited in Shaw, 2014).

Aoki (1992) argued that the time for examining teaching and learning from the outside is in the past, and that any useful assessment of teaching methods should take into account the present lived experiences of teachers and students. Since much of the existing discourse on pedagogy did not address the relational aspects inherent in teaching and learning, Aoki called for a return to “the humanness that lies at the core of what education is” (p. 188). Like Dewey (1954), he rejected the “*crust* of conventionalized and routine consciousness” (p. 183). Aoki’s (1993) re-imagining of curriculum included in its landscape the *lived curriculum* of teachers and

students, meaning that educational practice should be amenable to the fine attunement of the needs and requirements of both students and teachers. He was interested in classroom experiences and relationships and sought a way to situate them prominently amidst curriculum supervision, development, implementation, and evaluation. Aoki described his vision as “disturbing somewhat our curriculum landscape” (p. 200)—although I don’t see this disturbance as a threat, but more of a welcome dusting-off of the old ways in order to embrace a fresher and more relevant curriculum.

Aoki’s vision hinged on flexibility along with **reflection** and care, in tandem with the *curriculum-as-planned*. In this way, knowledge and wisdom are free to co-exist in the classroom. He thought that education functions best within a harmonious learning environment wherein teacher and student can engage in a positive relationship. As this study demonstrates, a teacher who practices and develops the ability to access a state of physiological coherence opens up the possibility for sharing a positive emotional relationship with the students in her care, *effectively shaping the social environment in which she and her student(s) coexist*.

Reflections

As I conducted this research I documented thoughts, insights, turning points, and departures as they arose. Raider-Roth (2011) described “the researcher’s train of thought as ‘data’ or ‘evidence’” (p. 78) in itself. Taking a cue from Raider-Roth’s insight, I include the following three journal entries. The first, *Teachings from Crow*, is included as an example of *knowing that* versus *knowing how*, and was inspired by my own personal experience of learning a yoga pose. *Aoki and the Click* is a response to Aoki’s description of moments of deep connectivity between teachers and students. In *Out of Order*, I try to express the idea that

sometimes our presence alone can be a powerful stabilizing influence in the face of adversity, by nature of our shared, embodied energies.

Teachings from crow.

Crow is a harbinger of change: spiritual, mental and emotional. Life, death, rebirth, transition magic, watchfulness, looks for opportunities coming up, aids in ability to move spiritually and physically. He teaches the power and balance of light/dark and spiritual/physical. He teaches us to create and manifest things in our lives, all of life is waiting...Are you aware of the nuances in life? Are you listening to signs around you? Crow can give strength and show you how to manoeuvre with intuition and insight. (Starstuffs, 2015)

I am one of a dozen women who have signed up at a city yoga studio for a seven-month Chakra Immersion course, all of us motivated in different ways to commit to this journey. For me, this is an opportunity to understand the energetic body and its rhythms in a new way. On the second day of the course we are learning about the root chakra (Muladhara), located at the base of the spine. This powerful chakra establishes the deepest connections with the physical body, the environment, and the earth. The wisdom of Muladhara encourages us to face our fears and overcome them with trust and faith. “Crow” pose (or Kakasana) is one of the yoga asanas associated with the root chakra. It is also one of the most anxiety-inducing of the balance poses, as it requires one to balance on two hands with the knees supported on the backs of the arms, heart lifted and eyes gazing forward. I have always felt uneasy about trying this pose, and have not ever found that “sweet spot” where balance allows one to settle into it. But today I decide to give it another try, this time concentrating on connecting to the root chakra as a foundation. I tilt forward on my hands, lift my heart up and direct my eyes forward as instructed, and then tentatively lift one, then the other toe off the ground behind me. It takes a moment for me to realize that I am actually balancing without toppling...there it is! I find myself precariously perched in Crow pose for the first time and wonder why it has taken me so long to let it happen.

Then it dawns on me that the pose became available when I approached it with new knowledge—a sense of how it emanates from a connection to a particular part of my physical body (the root chakra), and a new understanding of its purpose. (*Journal entry, April 30, 2015*)

I approached this research with the belief that teachers may benefit from the practical, embodied knowledge that heart rhythm biofeedback will contribute to their understanding of heartfelt teaching, thereby providing a means to make it happen. My experience with Crow pose illustrates how this may be possible.

Aoki and the “Click”. Aoki (1993) ascertained that narrative is the connector in the curriculum landscape, holding the power to engage students in a charged atmosphere of interest, emotionality, relationship and content...the *click*...“and there we all were gathered together by a tension holding us in a way that we did not want to let it go” (p. 210). Profoundly entwined with the experience of shared narrative is the shared energy between the teacher and the students in a moment of connection. I understand this moment as the key to building positive relationships in support of learning. I think it’s possible for teachers to find a heartfelt way to “click” with students. (*Journal Entry, April 8, 2014*)

I love the notion of “Teaching as Indwelling Between Two Curricular Worlds” (Aoki, 2004). I would think that a teacher occupying this space would experience “tensionality” in a good way, considering the reciprocal impact she has on her students. As Aoki described it, by virtue of a teacher’s intention and presence, she creates a pedagogic “situation” (p. 202) in which the curriculum-as-planned and curriculum-as-lived work together as catalysts for learning. (*Journal entry, April 9, 2015*)

On reflection, I realize that my own embodied experience of heart coherence is an important element to include in an interpretive study that is rooted in the physiology of the heart.

This study would not ring true if I were to leave out my background in the science of heart coherence in general, and my own personal embodied experience of heart coherence in particular. Having practiced generating coherent heart rhythms over time, I am now able to shift into a state of physiological coherence without the aid of the biofeedback provided by HeartMath. I have become quite accurate at identifying the physical sensation of coherence and have often described the moment when the shift occurs as a sort of *click*. I identify with Aoki's notion that something "clicks" when a pedagogical relationship is going well, and I relate this moment to the physiological change that occurs for me when I am able to shift into a coherent state. In the realm of education, I would describe the "click" as the moment when the energetic fields of the teacher and student synchronize and come into harmony with each other, facilitated by positive emotion. (*Journal Entry, September 14, 2014*).

Out of order.

"We need less advice and more just hugs when you have no words left."

A video shown in a class on hermeneutics included several vignettes of families who were living with cancer. A father who had lost a son expressed his feelings with the words in the opening quote in this section. He found himself in a situation in which words no longer offered him any healing. It brought me back to a moment I experienced when words did not have a place in the circumstance of grief unfolding around me. I relied on the power of my own heart's energetics to create a healing space for one who was suffering. The cascade of physiological responses occurring in and between two individuals in a loving embrace can lay the groundwork for healing. Yes, sometimes there are, as this grieving father noted, "no words left," but sometimes there are no words required.

As I began to think about the physiological process of healing, the father's statement also

spoke to me in terms of my research topic. I thought about the unspoken compassion that can occur in the energetics of the space between two people. In the context of teacher and student, Maturana & Varela (2009) described the “occasioning” of learning as an expression of love. Pedagogical love can be interpreted as encompassing those instances in which a teacher understands and accommodates the needs of the student in the context of a connected relationship. In this instance, wherein a teacher makes room for another by “fully accommodating another,” a teacher can create the space to embrace a student in the moment and respond with compassion and acceptance. By caring for her own emotional landscape, I believe it is possible that a teacher can find moments of deep connection with students in which they feel loved and cared for and, in return, offer their full attention to learning. I turn my research question toward instances such as these, hoping to capture the lived experiences of teachers who practice with “heart.” (*Journal Entry, June, 2014*)

Chapter 3: Methodology

Educating the Heart

If experience is an ongoing and cumulative coordination, then learning, too, proceeds as a living rhythm—not by a series of truncated arcs, fits and starts. Learning is movement from an initial disequilibrium (confusion, doubt) toward equilibrium (satisfaction, knowledge). The learner is not an empty vessel or a wax tablet, ‘impressed’ by discrete and external stimuli, but an agent actively engaged with her environment and growing insofar as she frames and uses events in experience. (Hildebrand, 2008, p. 18)

Theoretical Approaches to the Research

In the opening quote to this section, Hildebrand captured the living rhythm of the work of exploring and researching heart in pedagogy. After considering several approaches to this work, including Integral Theory and Hermeneutics, I determined Interpretive Phenomenological Analysis (IPA) (Smith, Flowers, & Larkin, 2009) to be the best theoretical basis with which to address the questions that drive the research. This methodology offers us the “interpretive tools...to open up perceptions, to see things not previously seen, and to notice connections not previously noticed” (Davis, Sumara, & Luce-Kappler, 2008, p. 27).

I used writing as a method of inquiry, following Richardson’s (1994) assertion that writing is “a way of finding out about yourself and your topic...a way of knowing—a method of discovery and analysis, and not just a mopping up activity at the end of a research project” (p. 516). Throughout the writing, I kept the topic at the forefront, making sure my writing was in service to the greater topic. As Jardine (1992) expressed, interpretive writing is not “*about* me and my past experiences, but that *of which* I have had certain experiences...it is *the topic*, not the *fact* of a living connection, that is the center of interpretive work. (p. 58)

Our past informs our present through the concept of tradition (Gadamer, 1960/2013). However, just because we’ve grown up in our traditions, doesn’t mean we’re always aware of them or understand them. Gadamer (1960/2013) described the concept of “historically effected

consciousness” (p. 350), which causes a topic to reside in a space between what is known about it already (including presumptions) and the topic itself, which exists as an ongoing field that our address to it initiates. We are already located within a topic as we come to research it. In my case, the wisdom of the heart had already asserted itself as a field in which I was a part, by nature of my master’s research topic and the subsequent personal life experience, or *Erlebnis* that captured my attention. My research questions arose from my previous involvement with the topic of the heart—in fact, they formed an understanding of the topic by their very expression. There is no identifiable starting point. In Gadamerian terms, “we always arrive too late to our topics” (Jardine, 2014).

Extending *Erlebnis* into the realm of research changed the experience into one of *Erfahrung*, in which we engage with an experience in a deeper way (Gadamer, 1960/1989, p. 384). The meaning of *Erfahrung* comes from “travel,” or journeying out—making something of experience. *Erfahrung* holds a special place in the conduct of hermeneutics research insofar as it is developmental, open-ended, and ongoing.

Openness is one way in which experience “extends itself and revalues itself all the time” (Davey, 2014a). This being-in-motion, or *Dasein*, (Heidegger, 1962/2008) allows experience to open up new understandings for us. Davey described the dialectical relationship between our past experiences and our present thinking. Within a hermeneutic approach, we are constantly anticipating a future in relationship to a topic we are trying to understand. Davey (2014a) reminded us that understanding is something that we are in the process of making as we practice within a field or discipline. In order to attune to a topic, we require attentiveness to it. “If philosophical hermeneutics is a practice of attentiveness, then like all reflective and spiritual

disciplines, it inhabits and articulates a tense space, the space of being in between” (Davey, 2006, p. xvi). With respect to teaching, Doll (1995) articulated the concept poetically:

Attention. A tension. A tending. These homonyms with their different meanings residing within the same sound attract me, interest me about the teaching encounter. One gives attention to what one is interested in. There arises a tension between one and the material. The tension, once felt, turns into a tending of the material, much as one tends to the needs of one’s garden or one’s child. Caretaking. (p. 128)

Davey (2014b) referred to these spaces of tension as “hermeneutic differentials,” pointing out that, in philosophical hermeneutics “the vitality of understanding actually depends on difference” (Davey, 2006, p. xii). In difference lies the possibility of encountering a topic through the perspective of the other; when we maintain openness to a topic, we are able to entertain the notion that what the other says in relation to the topic may be true (Gadamer, 1945/1989).

Interpretive practices require the researcher to attune to what is already in play, in the light of personal prejudices. In the case of my research, I entered a field that is “variegated, in which there is no one answer to my question” (Jardine, 2014). With respect to attending to the field in which we are positioned, we develop a quality of experience in ourselves that allows us to attend to the single case. We can’t catch ourselves starting to understand; it is happening already. As Jardine (2014) noted, “Hermeneutics is premised upon that feeling that ‘something is going on,’ but it’s not evident—something is already at work in situations. This is the realm in which hermeneutics actually works.”

Understanding, or “standing in the midst of,” *is* interpretation. There is always a world already interpreted, already organized in its basic relations into which experience steps as something new. We engage in a cultivation of knowledge that allows us to experience the world

we are living in as it happens in the moment. We need to do the work on ourselves in order to gain knowledge from the world and participate in something we love. This takes practice, time, and cultivation. The knowledge we are concerned with is not readily accessible.

Interpretive Phenomenological Analysis

Interpretive Phenomenological Analysis (IPA) is a qualitative, experiential method that served as the research tool employed in this research. Theoretical and philosophical foundations of IPA include phenomenology (following the lineage of Husserl, Heidegger, and Merleau-Ponty) as well as hermeneutics (in the traditions of Heidegger and Gadamer). IPA relies on the sense-making of individual participants as they reflect on, and attempt to understand, their lived experiences related to the phenomenon under study (Smith, Flowers, & Larkin, 2009). This data is then interpreted further as the researcher attempts to understand the meaning that participants express in interviews. In this way, IPA is an interpretive, phenomenological approach to the conduct of research, as understanding one's experience involves "an unfurling of perspectives and meanings, which are unique to the person's embodied and situated relationship to the world" (Smith, Flowers, & Larkin, 2009, p. 21). IPA is also idiographic, or case specific, in that it involves examination of particular cases provided by individual participants (Smith, Flowers, & Larkin, 2009, p. 21).

IPA arose as a research methodology in the mid-1990s. In a seminal paper, psychologist Jonathan Smith (1996) "advocated for an approach to psychology that was able to capture the experiential and qualitative, and which could still dialogue with mainstream psychology" (Smith, Flowers, & Larkin, 2009, p. 4). Over the course of its development as a research tool, IPA has been utilized in studies across multiple domains including social psychology, educational

psychology, and counseling psychology. Over time, it has been referred to as “applied psychology or a “psychology of the real world” (p. 5).

Theoretical foundations. Smith (1996), when establishing Interpretive Phenomenological Analysis as a research method, included three philosophical traditions in its framework: phenomenology, hermeneutics, and idiography. Table 1 (below) illustrates the relevant philosophical contributors drawn upon as guides for the implementation of the method. A brief description of each tradition is included below the table.

Table 1

Theoretical Foundations of IPA

PHENOMENOLOGY	HERMENEUTICS	IDIOGRAPHY
Husserl	Schleiermacher	Münsterberg
Heidegger	Heidegger	Windelband
Merleau-Ponty	Gadamer	Allport

Phenomenology. The phenomenological roots of IPA are derived from the lineage beginning with Husserl, further developed and expanded by Heidegger, and culminating in Merleau-Ponty’s ground-breaking contributions regarding embodiment. Husserl introduced the notion of the lifeworld, Heidegger contributed the concept of *Dasein* as a way to consider our thrownness into the world, and Merleau-Ponty broke new ground by describing our relationship to the world in terms of the primacy of embodiment.

Hermeneutics. The hermeneutic component of IPA rests on the work of Schleiermacher, who advocated hermeneutics as a systematic approach to the interpretation of all texts, not just biblical texts. The next important contributor to hermeneutics was Heidegger, whose phenomenological roots led him to consider *Dasein* as the way in which we are “always already engaged in interpretation” (MacAvoy, 2016). Gadamer introduced the concept of the

hermeneutical circle, in which a dialogue emerges between the reader and the text in the act of understanding, as well as the “dynamic relationship between the part and the whole” (Smith, Flowers, & Larkin, 2009, p. 28).

Idiography. IPA is also guided by idiography, an approach that was popularized by Allport (1937), a personality and social psychologist who expanded on the work introduced by Münsterburg in the 1800s (Hubert & Knapp, 2006). Idiography has most typically been associated with the human sciences due to its “concern with the particular” (Smith, Flowers, & Larkin, 2009, p. 29) and, in this way, differs from the nomothetic approach, which is predominant in the natural sciences. Nomothetic inquiry translates experience into numbers (statistics), leading to generalized analysis of the phenomenon at hand. Individual experience and a connection to the meaning of a phenomenon to an individual are thereby overlooked. An important nuance regarding idiography is the recognition that, although “experience is uniquely embodied, situated, and perspectival,” it is simultaneously “immersed and embedded in a world of things and relationships” (Smith, Flowers, & Larkin, 2009, p. 29). This characteristic of idiography makes it particularly suited to answering the research questions, as participants’ experiences are examined from both the first and second person perspectives.

Interpretive Approaches in the Context of this Research

We are connected, like wind and chimes. Be grateful I am here. You need me as I need you. I've come clinking and clanking, catching my breath, ready to listen. I want nothing more, nothing less. I come out of necessity. (Pelias, 2004, p. 39)

Interpretive researchers bring a set of prejudices to a topic. As wind and chimes, these biases exist as conditions by which we experience something, and they provide us with an entry point into conversations about a chosen topic. I approached this research with prejudices that have informed my interactions with my participants, and my interpretations of their statements.

Some of my prejudices are old and some are new, based on my experience with heart coherence biofeedback throughout the past five years.

Pelias (2004) captured the notion of interdependency as a quality of hermeneutic conversations, and the sense of the address of the topic, which moves the researcher to explore it further. Biases are what help us to recognize that which has something to say to us within a field and, for this reason, hermeneutic researchers choose participants who have ventured into a particular field.

An interpretive approach such as IPA implicates the researcher in any new understanding that arises from the study as one who may or may not recognize significant insights and circumstances that impact the topic. Understanding the subject matter happens in the space in between myself and other. Maturana & Poerksen (2004) referred to understanding in terms of a multiverse:

The other person becomes a legitimate other with whom I am able to talk. Friendship, mutual respect, and cooperation emerge. It is no longer possible to demand submission; the universe changes into a multiverse within which numerous realities are valid. (p. 39)

The dialogic that occurs between myself, as a researcher and participating teachers encourages openness, which, in interpretive practice, is suited to my research question. According to Gadamer (1960/2013), openness is the determining factor in establishing connection:

Without such openness to each other there is no genuine human bond. Belonging together always also means being able to listen to one another...Openness to the other, then, means that I must accept some things that are against me, even though no one else is forcing me to do so. (p. 369)

Belonging, by itself, isn't enough, as dialogical engagement "requires a willingness to be subject to the address of the other and to place one's self-understanding before the other's claims" (Davey, 2006, p. xv). Openness must be achieved, however, and once you've got it, you don't necessarily keep it: "Understanding begins with an address but it only just begins there. Understanding about a topic has to be cultivated. Everything is potential data if it helps to further the interpretation of the questionability of the topic" (Moules, Field, McCaffrey, & Laing, 2014, p. 10). In hermeneutics, a researcher must keep applying herself to a topic with flexibility and adaptability. The nature of knowing itself requires susceptibility to what happens, constantly and consistently. Curiosity allows us to stay open to the newness that comes to meet us.

Life writing.

I want to write in another shape. I seek a space that unfolds softly, one that circles around, slides between, swallows whole. (Pelias, 1999, p. xi)

I incorporated life writing into this study to supplement the interpretive phenomenological approach, as described above, and broaden possibilities for understanding heart in pedagogy. Smith (1999) noted that "All writing is autobiographical" (p.43), and determined that in life writing, "there's an unusual attendance to the details of material existence and the experience thereof, alongside a heightened awareness of the intractability of our human interdependence, sabotaging the myth of autonomy" (2012, p. xiii). With this insight, Smith addressed the significance of life writing as a tool for understanding by emphasizing the way in which it addresses the relational nature of experience. Life writing is an attempt at understanding, and serves to function as a further avenue of interpretation of the topic at hand. Richardson (1994) described writing as "a method of discovery and analysis, and not just a mopping up activity at the end of a research project" (p. 516). Through writing, as Richardson (1994) explained, we are able to discover new aspects of our topic and possibly understand how

we are connected to it. Adding to Richardson's notion of connecting to a topic through writing, Franzmann (2000) shared the importance of recording and writing about the "feelings" that accompany the researcher in the process. As a researcher, "If I am aware of my feelings, I can be more alert to their influence on my interpretation of the data and to what that implies for a richer or more limited interpretation" (p. 23). Feelings are regarded as important harbingers for instances of change and adaptation to circumstance as the work unfolds.

In an interpretive study, understanding arises in the midst of the new insights that occur in the *in-between*—in the space where the interviewer and the participant meet and are immersed in the rhythm of their own dialogue. Gadamer (1960/2013) referred to this process as a *fusion of horizons*, an interpretive space that is open to the arrival of new knowledge and which forms the basis for possible new understandings of a topic. The fusion of horizons occurs through the dialogue between the researcher and participants within a given field (p. 317).

In reference to this concept, Davey (2014a) suggested that "in terms of enabling horizons of mutual being, the more you bring, the more you can become witness to." This insight supports the notion that the researcher is indeed an integral part of the research process. A researcher who is well practiced in a field will be able to recognize more of the relevant information manifesting in the field of interest and, thereby, increase the likelihood that new understandings come forth from the research.

Gadamer's (2013) reinterpretation of the hermeneutic circle of understanding suggested that the hermeneutic circle is not closed in any way, but continually moving forward in anticipation of that which may arise in the text that speaks to the topic in a new way. Virginia Woolf mused that a "sight, an emotion, creates this wave in the mind, long before it makes words to fit it," (1975, p. 247), highlighting the rhythmic nature of the hermeneutic circle and pointing

out to me that connections made with participants may occur at a level that goes beyond the spoken words. In the case of the wisdom of the heart, the more practiced I am in heartfulness and in the process of educating others about it, the more I am able to recognize it in the texts that emerge in my research. To avoid the *vicious circle*—just seeing what I *think* is there according to the prejudices I bring to the research (Gadamer, 1960/2013)—I must remain open to what arises in the course of a study in order to gain a sense of the possibilities within the field of interest.

Rigor and validity.

However, as soon as one has realized that there is no single privileged access to reality, and that perception and illusion are indistinguishable in the actual process of an experience, then the question arises what criteria can be used by a human being to claim that something is the case. The very possibility of posing this question opens up a space of common reflection, a sphere of cooperation. (Maturana & Poerksen, 2004, p. 39)

Smith, Flowers, and Larkin (2009) pointed out that rigor in IPA rests on thoroughness (appropriate sample, quality of interviews, completeness of analysis) in combination with sufficient idiographic and interpretive components (p. 181). Moules, McCaffrey, Field, & Laing (2015) emphasized the different meaning of the term *rigor* when applied to interpretive work, releasing it from its quantitative research connotation (precision, accuracy) and redefining it in terms of a “cohesive, comprehensive, cogent, and expansive contribution to understanding of the topic” (p. 172). With regard to validity, they point out that the understanding that is brought forth through interpretive work “can only be shared when it is put forward in a convincing, understandable and telling way” (p. 172). Validity in IPA takes direction from the work of Yardley (2000), who identified the following as criteria: 1) sensitivity to context; 2) commitment and rigor; 3) transparency and coherence; and 4) impact and importance. Valid research is received as trustworthy and faithful to the topic, without being subject to a prior hypothesis.

Support for the validity of life writing has been put forward by Pelias (1999), who considered four criteria that render a poetic account “acceptable and authoritative: coherence, plausibility, imagination, and empathy” (p. xiii). In comparing a poetic essay, journal, or diary to a quantitative research report, Pelias (1999) noted, “The latter...marks an event that occurred; the former tells of its character” (p. xi).

The combination of interpretation and life writing in this study allows for an examination of heart in pedagogy from different perspectives. Richardson (1994) described this type of approach as a “postmodernist deconstruction of triangulation”:

Crystals are prisms that reflect externalities and refract within themselves, creating different colors, patterns, arrays, casting off in different directions. What we see depends on our angle of repose. Not triangulation, crystallization. In post-modernist mixed-genre texts, we have moved from plane geometry to light theory, where light can be both waves and particles. (p. 522)

Recognizing that there are more than three sides from which to approach a topic, Richardson used the word *crystallization* as a substitute for triangulation, invoking the multidimensionalities of the crystal as a metaphor to describe the variegated means of finding validity in writing as research.

Overview of Research Design and Implementation

I conducted heartfulness workshops with teachers in two western Canadian schools throughout fall 2015 and winter 2016. In the first school (charter) workshops were scheduled twice per month in a designated classroom or study/office area during times that were convenient for participants. In the second school (private) initial meetings took place on site and in person; however, due to scheduling issues, it was decided that we would share heartfulness workshop

content weekly via an online Learning Management System (LMS). Participants were encouraged to ask questions and to contribute comments and insights pertaining to heartfulness practice as they arose.

Participants. I conducted heartfulness workshops with six elementary and secondary teachers, males and females, 25-40 years of age. Each of these teachers demonstrated an interest in contemplative practice in education and was involved in a personal practice of mindfulness. I worked with teachers in two schools to increase the chances that a suitable number would volunteer for this research. I initially assumed that there would be a difference in emerging themes between the schools however, on completion of the analysis of themes, I found no difference between participants in each school (See Appendix K). Thereafter, all six participants were considered in one group.

Heartfulness workshops. Each workshop began with the Quick Coherence Technique (see Appendix D) to help focus the group on heartfulness and to generate shared coherent group energy. Sessions typically began with a “check in,” during which I asked how the HRV biofeedback practice was going and responded to any questions that had arisen regarding technology or heartfulness practice since the last meeting.

Workshop content included heartfulness meditations, including Loving Kindness Meditation (Hutcherson, Seppala, & Gross, 2008; Fredrickson, et al., 2008; Salzberg, 2016), Heartfully Engaged Awareness Programming Tools (Daugherty, 2014a), and The Loving Benefactor Meditation (Latz & Ross, 2015). These were combined with a Heart Rate Variability (HRV) biofeedback stress-management program to help teachers learn to deliberately shift into positive emotional states such as love, appreciation, and compassion.

In each of the workshops we explored an aspect of the “science of the heart,” taking time to explore the concept of physiological coherence, the heart-brain, and the physiological impact of positive emotion (McCraty & Rees, 2009). Then we took a few moments to practice a new heartfulness meditation (see Appendix E). The sessions ended with a chance for more questions and/or reflection on the material we had just explored. For examples of content for the heartfulness workshops, see Appendix F. All workshops concluded with a few moments of practice with a new heartfulness meditation. Heart-Mind lesson plans from the Dalai Lama Center for Peace and Education (see Appendix F) were also included in the sessions. These lesson plans may have served to reinforce the concepts we explored in our heartfulness workshops as well as provide teachers with a way to incorporate them in their teaching practice, thereby opening up the possibility of facilitating social connectivity in the classroom (Heart-Mind, 2014).

Recruitment. Teachers were made aware that I was conducting research on heartfulness in teaching practice and they showed great enthusiasm for the topic. I clearly explained to them that their participation in the workshops did not commit them to be participants in my study. Upon completion of the workshop series, six teachers volunteered as participants.

Each participant in the heartfulness workshops was given a personal letter of invitation (see Appendix B) outlining the study details, which they received at least four weeks prior to the commencement of research interviews. I shared information about the research study, indicated my interest in their involvement, discussed the content of the invitation, and invited them to ask questions related to the study and their involvement. No remuneration or compensation was offered.

Participation in the research study was not mandatory, and the six teachers who became participants indicated a willingness to commit to a dedicated practice with the biofeedback programs in order to facilitate a consistent ability to shift into the positive, physiological state of coherence. Participants also agreed to explore heartfulness as a practice, including heartfulness meditations, to complement the biofeedback sessions.

Interviews. The goal of IPA interviews is to enter into conversations with an open attitude toward what participants bring to light in the context of their experiences. In other words, the goal is to “enter the participant’s lifeworld” (Smith, Flowers, & Larkin, 2009, p. 58). Qualitative interviews approach topics through the nature of conversations that occur during semi-structured interviews. The interviews rely on questions that open up space to allow participants to share experiences, understandings, and meanings in a way that best illuminates the topic in question. Questions in IPA are designed to generate a dialogue describing the observations, insights, and lived experiences of study participants in order to contribute to a new and deeper understanding of the topic at hand.

The research interviews serve to shed some light on the topic of interest beyond the understandings that the researcher contributes. As such, semi-structured interviews were conducted with the mindset that, in interpretive research, interviews “need to be topic-focused but cannot be determined in advance” (Moules et al., 2015, p. 45).

Commencing in spring 2016, I conducted interviews with participant teachers, which were approximately one hour in duration and took place at an agreed upon time and location. My goal was to enter into conversations with an open attitude toward what the participants brought to light in the context of their experience with heartfulness as a practice. Qualitative interviews open topics through the nature of *conversation*.

Questions were directed toward descriptions of teachers' embodied experiences of heartfulness and its manifestation in relationships with students. They were designed to generate a dialogue concerning the lived experiences of teachers in order to contribute to a new and deeper understanding of heart in pedagogy and how it functions in teacher-student relationships. For examples of interview questions see Appendix G. Concerning effective interviews, Josselson (2013) described a way of "moving with the participant and trying to ask as few questions as possible" (p. 8). She referred to the interaction of the interviewer and interviewee as a metaphorical "dance," the back and forthness of which relates to the hermeneutic circle described by Gadamer (1960/2013). As discussions emerged, it was important to keep the conversation open to possibility and give participants the opportunity to describe their experiences in their own particular ways. Josselson urged researchers to "encourage elaboration and extension" (p. 11) as points of interest arise. There is a "relational and emotional interchange that takes place as we 'collect' qualitative data" (Josselson, 2013, p. 13):

In terms of the relationship with the interviewer, the emotional climate of the interchange will be determined by whether the interviewee is feeling understood and accepted, or misunderstood and/or judged. There is no way to be "neutral" or "objective" as the interviewer in such a situation. The research encounter is filled with affect— both the researcher's and the participant's. (p. 33)

None of the participants in this study fall into a vulnerable population and, in our connection through the heartfulness workshops, there were no power or authority issues present in our relationships.

In addition to dialogues with teachers, I invited each of them to submit pieces of writing (poetry, narrative, life writing) about their experiences with heartfulness as they practiced in their

classrooms. I asked them to include any thoughts or insights they may have gained regarding their relationships with their students or with the overall classroom climate.

Data. The data gathered for this research was comprised of my understanding of the relevant literature, interviews with participant teachers, life writing from my personal experience as I conducted the research, and personal journal entries documenting the decision-making process throughout the research. Although teachers were invited to contribute artefacts, none chose to contribute in this way.

I generated study data through transcriptions of audio-recorded interviews with teacher participants, augmenting these with my personal field notes, which informed my research decisions and interpretations throughout the process. My own accounts include general descriptions and insights into the research process as I navigated the stages, and more specific detailed accounts of the interviews with participants. These more in-depth accounts focus on the particulars of the interview situation (place, context, body language) and sensitivity to the unspoken communication present during our conversations. Participants are referred to by pseudonym to ensure confidentiality. One participant personally chose a pseudonym and I assigned the rest.

Analysis. As I conducted interviews and transcribed interview data, I aimed to be consistently sensitive to the manner in which the topic of heart in pedagogy was described in the lived experience of participant teachers. I paid close attention to the ways in which participants spoke, including their choice of words and how they formed conceptual connections to the topic, as “these aspects of discourse are repositories of meaning and important elements to interpret” (Josselson, 2013, p. 6).

I acknowledge that insights into the topic may be best achieved through careful attention to the particularities within each account of heartfelt teaching, and that interpreting the data in a meaningful way will depend on keeping the topic as the central focus during the process.

Josselson (2013) described important elements for the researcher to attend to during the interview process:

As researchers, we pay attention to both the content of the narration (the told) and the structure of the narration (the telling). The phrasing used by participants and the particular words they choose indicate something about how they locate themselves (or find themselves positioned) in the social world. (p. 3)

Participant teachers are regarded as co-authors to my study (Jardine, 2014), meaning that their experiences and insights are integral to the understanding of the topic as it emerges through dialogue and writing. Smith, Flowers, and Larkin (2009) noted the high priority placed on participant voice in IPA.

Ethics. Prior to inviting teachers to participate in the proposed study, and to conducting the research as described, I received ethics approval from the University of Calgary's Conjoint Faculties Research Ethics Board (Appendix A), and from the school board for each of the participant schools, as required. Ethics requirements for both schools were met by securing approval from the University of Calgary's Conjoint Faculties Research Ethics Board. A copy of this approval was provided to each school.

Informed consent. All participating teachers were required to provide informed consent for their participation in this study. The first step in securing this consent was to include details regarding the purpose of the study, possible risks and benefits of participation, and, in a letter of invitation, contact information for the researcher and the University of Calgary's Conjoint

Faculties Research Ethics Board (Appendix B). Teachers who read the invitation and agreed to participate were then asked to sign a Consent Form (Appendix C), which gave them more details regarding the research process itself, how they were being asked to contribute, and addressed issues of confidentiality. The consent form also indicated that their participation was voluntary and they were able to withdraw from the study at any time. Participants were also asked to consent to publication of all or parts of their oral or written contributions to the study.

Confidentiality. Every effort was made to protect the confidentiality of the participants, including the option of choosing a pseudonym to be used when referring to their data. One participant chose her own pseudonym and I, as the researcher, assigned pseudonyms to all other participants. Transcripts are kept on a password-protected computer. Access to the data is limited to myself and my thesis supervisor. All participants' contact information is either already known to me or is freely available in the public domain.

Reflections

Always the same beginning: words and the cells that make them all that will carry us into the future. (Wallace, 1989, p. 67)

This research itself is pedagogical—it involves teaching and learning. I participated in the conversations as they unfolded, contributing my own insights along the way rather than looking at it from an outside perspective. As Jardine stated, “[we] are already in the lifeworld, no method required. Implications, hopes, and desires are already happening. Often times these are taken as a given; the Latin word for given is data. All of the lifeworld is data” (Jardine, 2014). With these words, Jardine justified an interpretive study of the lifeworld as a source of new knowledge. “The question is how and where to join the conversation” (Davey, 2006, p. xi).

It is worth noting the meandering path I have taken in arriving at IPA as a research method. I spent the first months of this doctoral program exploring Integral Theory (Wilber,

2000) as a possible method. However, with its broad, all-encompassing AQAL approach, I didn't feel as though I would have the time and resources to utilize Integral Theory to its full potential. Next, I decided to explore Hermeneutics (Gadamer 1962/2000), as its emphasis on interpretation seemed to link to the notion of "understanding heartfulness" in the research questions. As my research progressed, it became apparent that the phenomenological component, given my study's focus on the lived experiences of teacher participants, would be an important research tool to utilize. This led me to decide on Interpretive Phenomenological Analysis as my research method. It is interesting to note that IPA is founded on phenomenology, hermeneutics, idiography, but, had I not explored other methods prior to taking it up, I would not have been able to recognize it as a good "fit" for the present research.

IPA has provided an opportunity to explore the research questions from phenomenological and interpretive perspectives. Thus far, the topic has been situated in a "big picture" look at the relevant literature. Analysis of the data (participant voice via interviews) in subsequent chapters moves the exploration from the general to the specific by embracing the idiographic (first level analysis) component of the method. At this stage, themes revealed both individually as well as across participants are featured. Furthering this analysis by introducing the interpretive contributions of the researcher (second level analysis) sets the stage for expanding the scope to include new literature.

As a researcher, and the research "instrument" (Richardson, 1994, p. 517), I extended to participants an invitation to "complicated conversations" (Pinar, 2012, p. 47) that may expand the current understanding of heart in pedagogy. I remained focused on the topic and open to iterations of understanding in the interpretative process as the topic unfolded—without seeking answers, but striving for transformation.

Chapter 4: Initial Findings

Heart Whisperings

At this point, it is important to introduce the study participants. In this chapter I attempt to situate each within their own particular contexts as teachers as well as in relation to the present research. As mentioned previously, participants were recruited from two schools located in Western Canada. I approached two schools to increase the likelihood that there would be a sufficient number of volunteer participants for the study. Although it was anticipated that noticeable differences would be evident in the interview data between participants from different schools, the analysis of emerging themes did not support this notion. I decided to combine the volunteer participants from both schools (four from School One and two from School Two) into one group of six to analyze the relevant study themes.

In the descriptions that follow, the first four participants (Rose, Ava, Ella and Ren) teach at School One. The next two (Declan and Emma) teach at School Two. Introductions to each participant are interwoven with descriptions of their teaching experience and present practice, previous experience with mindfulness, motivation for heartfulness practice (in their own words), and my own reflections on the interview experience, recorded post-interview.

Rose

Rose is a Teaching and Learning Assistant (TLA) who has been working with students on a one-to-one basis for the past 16 years. Her background includes training in behavioural learning, speech therapy, and autism. In her practice as a TLA she is involved with students who have issues with anger management or depression and anxiety.

Rose and I met at the end of a school day outside the office where our interview was to take place. As she ushered me in to the room, she turned with a welcoming smile and, instead of

expecting me to set the stage for the interview, she inquired about which chair I'd be most comfortable in and whether or not I'd like some water before we began. I could immediately tell that Rose cares for others, and that she encounters and engages with her world with compassion.

When asked about her previous experience with mindfulness, Rose responded:

I've been growing more interested in the idea of meditation and yoga in recent years, and in mindfulness, which was one of my workshops about a year ago, which went nowhere.

As mindfulness practice has found its way into educational discourse and practice in recent decades, it is understandable that an educator with Rose's capacity for care would pursue an interest in the practice. It is notable that, despite her effort to learn more about mindfulness, her attempts at understanding the practice were curtailed, as the workshops "went nowhere."

Rose nevertheless attempts to incorporate aspects of mindfulness in her TLA practice. She described her ongoing practice of mindfulness with students:

I work with kids all the time. And they're anxious kids. For a lot of them anxiety is a major problem, or depression. And I work with them all the time that way...So I had done a little bit of breathing with them, or taking them for walks or, you know, just kind of calming them down by being next to them and maybe holding a hand or touch, a little bit of touch, that kind of thing...the idea of meditation is something that might, knowing yourself, being able to bring that to the children...and helping them to deal with their own emotions.

In light of Rose's interest in mindfulness and her attempts to incorporate mindfulness into her teaching practice, I was interested in her motivation for participating in the heartfulness workshops offered in her school. In our interview, she mentioned a presentation for teachers in which this research was introduced:

I've always had an interest and never pursued it and I think belonging to the group helped me to, to have more purpose with that.

Researcher's notes. Rose is the first participant I interviewed and, although I had anticipated a difficult and/or awkward encounter, I was surprised at how easily we were able to

enter into conversation and how quickly the hour passed. Rose is devoted to her profession and eager to continue exploring ways in which heartfulness may help her connect with her students in meaningful ways. As I transcribe our interview, I notice that each of Rose's descriptions of practice (biofeedback and/or meditation) is accompanied by laughter. I wonder: Is she self-conscious about the practice? Does it make her uncomfortable in some way? (*Journal, April 27, 2016*)

Ava

Ava began her teaching career in a Junior High School ten years ago. She is now teaching Grades 5-10 Spanish and Phys Ed. In addition to her academic subjects, Ava teaches mindfulness and yoga at the school.

I arrived early to our interview and, as the meeting room was open, I entered and set up my computer and audio recording equipment as I waited for Ava to arrive. At the time of our meeting, everyone else had left the space, leaving me to steep in the wake of a busy school day and quiet residue of all that had transpired in the space that day. I was thus acutely aware of Ava's arrival long before she entered the room. The rush of footsteps and rattle of keys heralded her entrance.

We greeted each other and I settled into my chosen seat for the interview. Ava sat to my left, taking the first available chair as she wrestled to untangle the array of sports equipment slung across her body (racquet, running shoes, yoga mat) so that she could take her place comfortably. She was quick to note that she was under a time restraint. I offered to reschedule the interview but she declined, indicating that this day was no better or worse than others and we should take advantage of this opportunity in her busy schedule. I was aware of being drawn into her jangled presence, and proceeded to ask about her previous experience with mindfulness:

I've been teaching yoga for thirteen years. And in the beginning it wasn't about meditation. It was more physical. And then, as the years went on, of course, learned more and, um, even the practice of yoga itself, for me, is like a meditation. My moving meditation, flowing with breath. And then I slowly became more interested in meditation itself and then I did some training.

Ava's interest and training in mindfulness evolved out of her original interest in yoga and then extended to heartfulness as she participated in workshops with me. I was curious about whether her personal interest and dedication to contemplative practice had found expression in her teaching practice:

I think all that knowledge was really helpful to share 'cause I don't really know anything about heart rhythms or anything like that. It was interesting to [my students] because maybe they never thought about, like, their nervous system, having the parasympathetic and the sympathetic and what happens in fight or flight and what happens in rest and restore. I think they're not really aware of that, so sort of eye opening.

Ava's decision to participate in heartfulness workshops came naturally to her when the opportunity arose at her school. She described her motivation:

I'd say I'm always interested in this kind of stuff. This is my realm, and...it's interesting to see the technology that's kinda come out for monitoring this kind of stuff. I think students could learn this at a young age and this would like, save their entire life. Really. This is my opinion (laughing). But uh, yeah, 'cause I feel like (long pause) we're always in our heads.

Researcher's notes. It is easy to discuss heartfulness with Ava. I feel as though we have a shared language established via yoga practice. I have noticed her eyes light up during workshops when certain ideas or terms are brought up. I remember mentioning "right action" in relation to anger in one of our sessions, and we recognized that we had been exploring the same concepts. During our interview, Ava mentioned how she "sneaks" mindfulness into her yoga and homeroom classes, leaving me wondering about the need to sneak contemplative approaches in a school where a study on heartfulness is supported and encouraged. Today, though, I think it's interesting that, as one of the participants with the most experience of mindfulness practice, Ava

is also struggling to be “in the moment.” I notice a feeling of urgency, impatience, and also distraction in our interview today, leaving me feeling as though this interview is a great example of the stress under which teachers find themselves. I am grateful that she took the time to discuss her practice with me. (*Journal, May 25, 2016*)

Ella

Ella’s teaching career began ten years ago in an elementary Arts school. For the past two years she has been teaching Grade 5 and 6, specializing in Math, Science and Phys. Ed.

At our appointed interview time, Ella entered the meeting room and greeted me with a hug on her way to taking a seat opposite me at the table. She curled her legs up underneath her body as she settled in for our conversation and, although she appeared relaxed, she was busy setting up her phone, notebook, and a couple of books on the table in front of her. I took notice of this immediately and wondered what she had possibly prepared ahead of time as she anticipated our interview. During the heartfulness workshops, Ella had always been one to ask questions, request clarifications of concepts, and offer insights from her practice. Being very verbal in nature, Ella was always easy to communicate with and eager to discover and embrace new concepts that might expand her understanding of contemplative practice and its impact on her personal and professional experiences.

In our interview, I asked Ella what brought her to mindfulness practice:

In the past my practices were very body oriented, very physical. So yoga, you know, deep breathing, um, then I started moving into...quieting the mind, being still.

...and if she shared any of her knowledge with her students:

So I just ended up running a stretch class with about, I had maybe an average of ten kids. So it was for those kids that were anxious all the time. So they would come and we would talk and we would deep breathe. And I’m giving them some visual imagery, you know, of being on a beach and we’d do some different relaxation techniques. And then we’d do some stretching and just hang out together and have the lights off, and really soft and

quiet. And sometimes I'd play soft music. So that was my original goal was to really start bringing this in.

Ella's deep interest and engagement with contemplative practice began early in her teaching career, starting with her introduction to yoga, which led to an expanding interest in and exploration of mindfulness practice. When I asked what prompted her to commit to the heartfulness workshops, she readily responded:

*Well, I think probably my initial was I remember reading *The HeartMath* solution ten years ago, eight years ago, somewhere around there and I was fascinated by it. And so when I saw your email or something about *HeartMath* I had that connection right away and I thought I hadn't revisited that for eight years or whatever, or ten years. I want to go back. And I think just through all of my, kind of, personal growth, you know, spiritually, you know, and mental well being and that kind of thing. Every teaching I've been attracted to brings you back to the heart. And so I knew that there was going to be a powerful connection for me so that's why I wanted to look into it further. Now I've listened to Marianne Williamson and I'm inspired by the messages, but once I picked up *The Course of Love*, it was immediately to the heart. So it makes you go to the heart. And that connected with me, just made sense. So it just seems like, you know, this evolution that's happening, and I feel it, even on our planet, we're moving from the head to the heart and at least trying to make those harmonious, right? And that's why I think *HeartMath* was attractive to me, because it is heart based.*

Researcher's notes. The first time I met Ella, almost a year ago, we sat together in her classroom to discuss a possible timeline for heartfulness workshops—and before we knew it, we had spent an hour discussing contemplative practice and her interest in living and teaching from the heart. I remember being struck by the intensity of her questions and her dedication to seeking answers. Our interview felt like an extension of that initial conversation. I am happy to know that she gained some useful information from our explorations together. (*Journal, May 18, 2016*)

Ren

Ren is currently teaching Art at the Junior and Senior high school level, but her background (a total of 8 years) includes a year teaching foods at a Junior High and another as a

substitute teacher “all over the city.” At the time of our interview, Ren’s teaching practice was focused mainly on Grades 7-11.

Our interview took place in Ren’s Art classroom, and she greeted me with her customary warmth. I was interested in the students’ work she had displayed on the walls and she was quick to offer a tour of the room. As we stopped from time to time to look at a drawing or a painting more closely, she slipped easily into descriptions of moments and memories that accompanied the generation of each piece. We ended our tour with a stop at her personal corner of the room where she showed me a painting of her own, a work in progress. We then settled in at one of the large art tables to begin our conversation.

Although Ren has explored mindfulness practice over the past decade, she reveals that her experience has been tentative and sporadic:

I have done some yoga. So there’s the mindfulness through yoga and stuff like that. I’ve done it for a couple of years. And then just hearing like meditation workshops and I hadn’t gone to a full meditation workshop but I’ve read a lot about it and that kind of thing. I’ve sort of experimented a little bit with starting a meditation practice but it’s always really hard to establish that habit for me. I can do it for a little while and then, like, your schedule changes. And I find that with being a teacher that your schedule changes so frequently. You know, like, you are good for a few months and then it’s Christmas holidays or whatever.

Ren’s persistence and curiosity, despite her limited success at establishing a mindfulness practice, led her to investigate heartfulness with peer teachers as a participant in the workshops offered at her school. I found it interesting that her motivation for contemplative study was not dampened by her ineffective attempts at mindfulness practice. Ren describes her motivation to participate in the heartfulness workshops:

When our school brought in somebody to do a workshop, it was just like, “oh this makes sense.” This is something I can focus on. And it helped calm my mind a lot more than the other stuff I tried.

Researcher's notes. After sharing time together viewing and commenting on the art in her classroom, Ren and I entered seamlessly into conversation about heart-based teaching. Although a major issue for her centers around time and scheduling, she expresses an interest in learning more about heartfulness practice and ways that she might make it more consistent in her personal life and in relationships with her students. We discussed the possibility of introducing the biofeedback to students in her homeroom class in the future. (*Journal, June 6, 2016*)

Declan

Declan began his teaching practice internationally, with positions teaching Math at Grades 6 to 10 level. Over the past 13 years his practice has included teaching Elementary, Junior High, and High School Math and Physical Sciences, including “stretching to advanced physics ideas into university level.”

I entered Declan's school and waited in the common area for him to meet me. As with our previous meetings, he greeted me with a smile and words of welcome. It was always easy to be swept into Declan's high energy, evident in his athletic stature and bright, shining eyes that never failed to convey an excitement about life. This day was no different. We found an open classroom and fell easily into conversation.

I asked Declan to describe his previous experience with mindfulness practice. I knew that he was interested in exploring contemplative practice in education, as he had previously invited me to take part in a yoga nidra class offered at his school.

Since about the end of February last year, I've been meditating twice a day for twenty minutes a day. It's a...samadhi which is a 'doing nothing' most of the time. So we'll be just sitting and recognizing thoughts as they come up. Those that really have no traction are just allowed to go...I've done some guided meditations as well, focusing on a number of different ideas and topics and have used the HeartMath during some of those meditations to provide a different focus along with loving kindness meditations. Most of it came through an introduction to yoga and realizing that the practice of asana and the physical practice of movement of yoga bring about a spiritual feeling that was something

really familiar from the exercise that I've done. For fifteen years I've been fairly intensely exercising on a regular basis. And find that I get a clarity of vision, a clarity of thought while doing that as well as for a period of time after that and yoga practice is beyond the asanas, recognize that the asanas are there to prepare your body to be able to sit and to have those thoughts. So exploring that, meditation just seemed an obvious direction to go. I was doing it anyway while I was running, I just wasn't really aware of it. And there's so much more to yoga than the asanas and the movements. And within the movements there's always more. The depth is just fascinating.

When asked about his motivation for heartfulness practice, Declan responded in his typical enthusiastic and detailed manner. It's interesting to note that yoga and contemplative practices entered his life "all at once" and, rather than being overwhelmed by it, he was able to embrace new ideas and recognize opportunities to expand his horizons. He described his motivation as twofold:

There's layers and levels. One is that, pursuing my own doctoral research, I have an interest in helping others because it can be very difficult to find people who are willing to participate.

Concerning motivation for heartfulness practice, he offers the following:

I think I'd been hearing the messages over and over again but not listening, not really hearing. V pushed us to do a meditation in one of her classes. And that seemed tremendous. That seemed such a huge amount of time. And through that experience, coupled with one in yoga nidra, that just...Here at the school we have a "choice" Friday. And in one of the periods there was a yoga nidra class, sleeping yoga, that I just popped into and tried and it was a really transcendental experience. Those two things, I think, combined, brought to light that there is this whole other world of experience that we can imbed ourselves in and investigate. And it's worthwhile because it's personal growth.

Researcher's notes. I left my interview with Declan so inspired about the inclusion of contemplative practice going forward in schools. I can tell that he plans to continue exploring heartfulness in tandem with his other practices. He enthusiastically highlighted specific instances in his classroom in which he remedied problematic circumstances by caring for his own emotional state in the moment. I appreciate his whole-hearted engagement with heartfulness in

particular and dedication to “growth” for himself and his students. I know he will make a difference in his classroom and within the school community. (*Journal, June 13, 2016*)

Emma

Emma has been teaching for nine years altogether: five years at her first school and four at her current school. Over the years she has taught Grades 4 to 12, High School English for one year, and currently teaches Grades 4-12 English.

I met Emma after school on a weekday and, although she always arrived on the heels of a situation that threatened to override her time with me, I could sense that she was excited to meet and continue our explorations together. We wandered through the school halls until we found a suitable classroom in which to meet. We exchanged news and updates as we both settled into the space. When I initially offered to meet teachers one-on-one, I wondered about the possibility that our interactions might be awkward, or feel contrived in some way. I have been relieved to discover that, despite my early reservations, the atmosphere of the teacher meetings to date has been one of shared interest and a sense of inquiry mixed with practice. Today was no different. We launched effortlessly into the interview.

As with all other participants, Emma’s introduction to mindfulness followed her attempts at yoga:

I’ve done a bit of yoga. But some yoga felt stressful to me (laughing). I know it sounds weird, but certain yogas are more intense than others and then there are the more relaxing yogas, which I liked. And then I tried meditation before, but I just felt like I couldn’t figure out how to get thoughts out of my head (laughing)...And I guess it’s better if you’re focusing on something positive and that kind of stuff. ‘Cause yeah, I just try to blank out, which is really hard. And then I’ve done things like breathing practices, but not all the ideas behind the breathing practices here. I just did the trying to take breaths and soothe yourself, not thinking about different things and connecting to happy ideas. Which was, yeah, was not as helpful if you’re just breathing (laughing).

Emma and I shared an interesting connection, as I discovered in her description of her previous experience with mindfulness. The HeartMath program was offered in the first school she worked at, but, although she was curious and took time to find out more about the practice, she found that the program wasn't presented in a way that helped her understand what it was about. She explains:

Well the weird thing is, my old school did have HeartMath but I didn't know really what it was. I just knew that it was something that was supposed to help kids calm down. And so when you came and presented, I just thought "Oh I should really figure out what it is that they were doing." Cause I was kind of curious about it. It sounded like it was a really useful practice but I didn't know how they did it. They probably didn't do it very detailed at that point, cause I think they just had the program and nobody really specialized in it.

Researcher's notes. Of all the participant teachers, Emma is unique in that, at the beginning she was the most tentative and one of the least experienced with contemplative practice. However, as she engaged with heartfulness practice over the year, she became increasingly devoted to learning more. During our interview, she repeatedly mentioned her gratitude at having been exposed to a new way to understand how her own well-being influences students in her care. Emma had not been responsive on the LMS established for the group, although she did engage with the materials privately. Once we had moved from the LMS and began to meet in person, she participated in all of our heartfulness workshops with enthusiasm and a great curiosity.

As I transcribe our interview, I notice the many instances of laughter punctuating our discussion and wonder if Emma's positive disposition facilitated her openness to heartfulness practice. Emma quite readily disclosed and described the circumstances she found "weird" in her attempts at practicing heartfulness. She is hoping that the end of this research project will not curtail opportunities to continue learning about heartfulness at her school. Considering the many

failed attempts to introduce HeartMath to regional schools (including Alberta Health Services initiatives in 2012), I wonder if there will be an opportunity to extend this work in area schools in the future. (*Journal, December 6, 2016*)

Reflections

I have included this reflection in order to offer greater detail regarding the study participants as a group. First, I discuss the circumstances and decisions that were in play as teachers from two schools were merged into a single participant group. Next, I comment on group characteristics that may have had an impact on interpretation.

At the outset of this research project, I contacted teachers from two Calgary schools with an invitation to participate in heartfulness workshops over the school year 2015/16. Originally, four teachers from School One and five from School Two signed up for heartfulness workshops. On completion of the workshops, teachers were invited to participate in this research study. All four teachers from School One became study participants, while only two out of five teachers from School Two participated in this research.

In School One, all workshops were held in the school. Teachers who were not previously familiar with each other were able to meet and connect with the researcher through shared meditations and discussions, as well as exchange insights and encouragement regarding ongoing practice. Over time, the teachers developed relationships that offered support for heartfulness practice, and I believe it was this establishment of relationships that fostered the desire to participate in the study.

School Two presented a different set of circumstances. It was difficult to coordinate schedules, as all teachers were involved in after school activities and programs. The following excerpts are samples of the researcher's communications via LMS as a virtual meeting venue, as

it was too difficult to arrange meetings as a group. The excerpts illustrate the ongoing challenge of engaging virtually with teachers.

Wednesday February 3, 2016: *Hello! I'm writing with an update on a possible way to stay connected re: HeartMath and heartfulness practice in 2016. D and I spoke yesterday, and I was so encouraged to hear that most of you are finding time to practice with Inner Balance or the emWave Pro biofeedback programs. Such great news! I'm happy to hear that you are still interested and would like to practice further:)*

Considering our challenges re: meeting face-to-face, D. suggested I post information and resources that you may all find time to connect to individually and perhaps share in conversations at the school whenever possible. I am always available to Skype with you if you have questions as well. I'm excited at this opportunity to continue expanding this topic over the term!

Thursday March 3, 2016: *Hi everyone - Hope you are well! How is your practice going? Are you finding time to use the Inner Balance and/or emWave programs? I'd love to hear from you if so, and am always available for a chat or email if you have questions.*

Wednesday March 30, 2016: *I'm planning ahead and wonder if it would be at all possible to set a date to meet in person during April sometime. At this point I'm not sure about how your practice(s) are going or if you have all been able to connect to the biofeedback programs. Also, do you find the posts useful? Is there anything specific you would like me to post or discuss? I'd love to hear from you and hope we can meet sometime soon!*

It was at this point in time (with minimal response from the teachers) that I became certain that using the LMS was not going to be the best way to introduce heartfulness practice to teachers. I then suggested, via personal email to each teacher, that I would be available to meet with them one-on-one if that might work better for them. Of the two teachers who agreed to meet me individually, both continued on and volunteered as participants in this research.

So far, I have introduced study participants individually. I conclude this chapter with some reflections on the characteristics of the group as a whole in order to give a sense of their collective contribution to the research.

Participants indicated several motivations for practice, including interest in:

- A novel way to engage with contemplative practice.
 - *It's interesting to see the technology that's kinda come out. For monitoring this kind of stuff (Ava)*
 - *I've done things like breathing practices, but not all, like, all the ideas behind the breathing practices here (Emma)*
- An established interest in heartfulness.
 - *Every teaching I've been attracted to brings you back to the heart (Ella)*
 - *We're always in our heads (Ava)*
- Curiosity about new ways to experience the world.
 - *There is this whole other world of experience that we can imbed ourselves in and investigate. And it's worthwhile because it's personal growth (Declan)*

Next, I'd like to discuss a common thread evident throughout all the interviews: each of the participants came to mindfulness as an extension of yoga practice. Each mentioned yoga in our discussion, although some of the participants recognized, to a greater degree than others, the significance of the physical practice of opening up awareness to include mindfulness, heartfulness, and spirituality. Ava and Ella commented on yoga and mindfulness, while Declan described how mindfulness leads to heartfulness, and spirituality:

- *I've been teaching yoga for thirteen years. And in the beginning it wasn't about meditation. It was more physical. (Ava)*
- *In the past my practices were very body oriented, very physical...then I started moving into...quieting the mind, being still. (Ella)*
- *Most of it came through an introduction to yoga and realizing that the practice of asana and the physical practice of movement of yoga bring about a spiritual feeling. (Declan)*

This chapter introduced the participants and described our interactions as the workshops progressed. Themes such as “embodiment” and “heart-based teaching” will be explored more

fully in Chapter 6. Chapter 5 contains a description of data analysis and the process of identifying emerging themes, and suggests a foundation for interpretation.

Chapter 5: Developing Themes

Heartsongs

In keeping with the central metaphor of rhythm in this dissertation, it is fitting to consider heartfulness as a topic that is “always already going on” (Gadamer, 1960/2000). Having been “addressed” by this topic, I have posed questions which, by their very nature have already contributed to an understanding of heartfulness (Gadamer, 1960/2000). An epistemological concern pertinent to this research concerns the sources of knowledge that underpin the topic of heartfulness. As has been noted, this study addresses the scientific basis for heartfulness from the third person perspective in tandem with the first and second person ontological perspectives, which are evidenced by the phenomenological or “lived experience” of the participants.

This chapter includes a big picture overview of the findings from the interviews. It is intended as a shorthand way of familiarizing the reader with the maps and contents of the interviews. This will enable the reader to contextualize the discussion of unique themes in the concluding chapters. This approach to IPA has been used by Fade (2004), who used theme cluster maps to demonstrate the development from analysis to theory building. The first section discusses analytical techniques used in this research. The second section discusses the content of the analysis. These sections are followed by a description of the process of identifying themes and the foundation for interpretation, which follows in Chapter 6.

Description of the Process of IPA in this Study

IPA is one method of many that may have been chosen to examine the questions this study set out to explore. It is a qualitative, experiential method appropriate for conducting this research in the following ways. Analysis in IPA relies on the sense-making abilities of individuals as they reflect on and attempt to understand their lived experiences related to the

phenomenon under study. Participants' understandings are given first priority, and the researcher's interpretations are grounded in the participants' perspectives. Analysis takes into consideration the "distinct" or idiographic nature of participants' accounts in combination with a wider focus on "what is shared, or commonalities" among participants (Reid, Flowers, & Larkin 2005, p. 20).

Reid, Flowers and Larkin (2005) noted the increasing focus of IPA research in health psychology, underlining its strength in contributing to biopsychosocial perspectives:

In keeping with the broad premise of positive psychology...there is scope for IPA research to become less disease-and deficit-focused, and for participants to be given a chance to express their views about strength, wellness and quality of life. (p. 21)

A unique feature of IPA as a research method is the combination of phenomenology with interpretive approaches. In the case of this study, participants were asked to consider the meaning of heartfulness in terms of their own lived experience of it and within the context of their teaching practice. IPA recognizes the "central role for the analyst in making sense of that personal experience" (Smith, 2004, p. 40). The researcher moves the focus of the research beyond description of a personal experience to meaning-making, encouraging the understanding of lived experience in wider contexts. For example, the researcher is encouraged to contribute her own insights to those contributed by participants. Within IPA, the researcher is also encouraged to relate participants' experiences to existing literature, thereby expanding the perspectives from which the topic may be understood. Reid, Flowers, and Larkin (2005) described the process of IPA as follows:

IPA makes inferences cautiously, and with an awareness of the contextual and cultural ground against which data are generated, but it is willing to make interpretations that

discuss meaning, cognition, affect and action. These interpretations may be drawn from a range of theoretical perspectives, provided that they are developed around a central account of the participants' experiences (their phenomenological world). (p. 20)

Application of IPA in this study. Interpretive Phenomenological Analysis rests on the voices of the participants in conjunction with researcher interpretations. IPA research has typically demonstrated a “healthy flexibility” (Smith, Flowers, & Larkin, 2009, p. 79) in terms of analytic style. Smith Flowers, and Larkin (2009) included numeration as one of the ways researchers engage with the data, taking into account the frequency of occurrence of emerging themes—which, can “be thought of as a patterning within emergent themes” (p. 96). Researchers are given latitude in the manner in which they engage in reflexivity, dialogue, and interpretation; however, Smith, Flowers and Larkin (2009) offer guidelines to the process (p. 79):

1. A “set of common processes”
 - from the particular to the shared
 - from the descriptive to the interpretive
2. A “set of common principles”
 - commitment to participant’s point of view
 - focus on personal meaning-making in particular contexts

Generally, the process of IPA progresses in the following pattern: identification of relevant quotes in transcripts, development of emergent themes, search for commonalities between themes, and a return to transcripts for validation of themes. This process is illustrated in Figure 3.

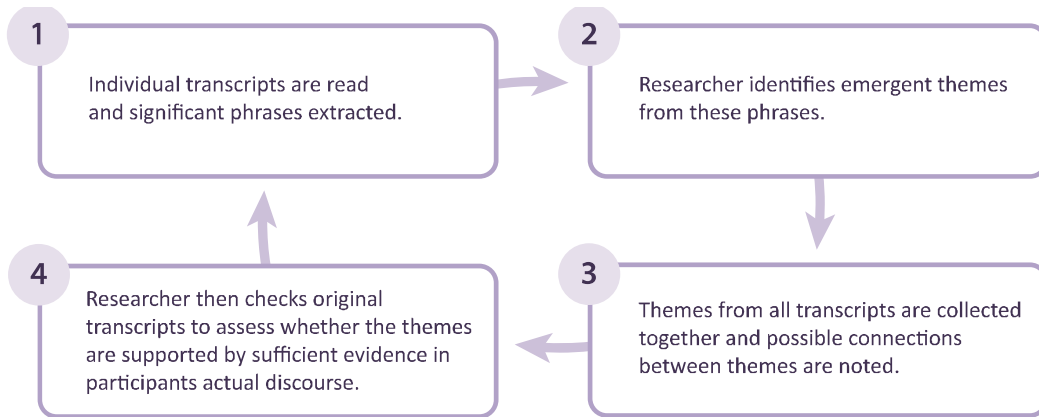


Figure 3. Process of Interpretive Phenomenological Analysis (IPA). Adapted from Frontiers, 2018.

IPA directs attention towards participants’ attempts to make sense of their experiences.

Figure 4 illustrates how the process loops interpretation back to the original transcript, and represents more precisely the steps I took in conducting this research.

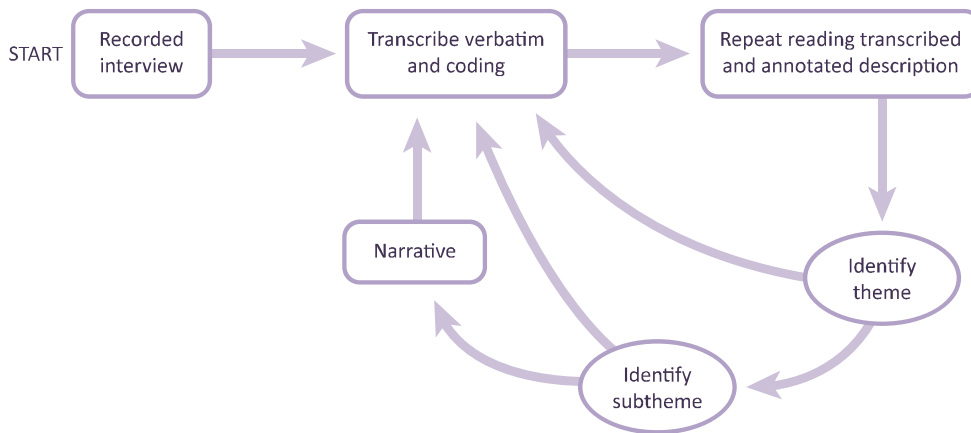


Figure 4. Steps in Interpretive Phenomenological Analysis. Adapted from Talaei, Labbaf, & Barekattain, 2015.

The concept of a “double hermeneutic” (Giddens, 2013) is at play when conducting IPA research. According to Smith, Flowers, and Larkin (2009), the double hermeneutic refers to the notion that “the researcher is trying to make sense of the participant trying to make sense of what

is happening to them” (p. 3). The idea of the double hermeneutic is applicable to IPA research, given its focus on “participants’ meaning-making as first-order and the researcher’s sense-making as second-order” (p. 36). Figure 5 demonstrates this relationship.

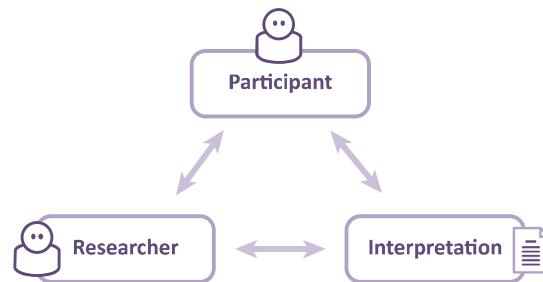


Figure 5. Reflective engagement with the participant's account.

Organizing the data. IPA research involves a series of steps designed to give voice to and make sense of participants’ lived experiences (Larkin, Watts, & Clifton, 2006). As such, it gives priority to participants’ quotes as cited in transcripts. This idiographic focus allowed me to concentrate on “specific individuals as they deal with specific situations or events in their lives,” resulting in a “detailed analysis of the accounts produced by a comparatively small number of participants” (p. 103). Two aims of IPA analysis drive the exploration of the topic at hand. Initially, IPA is an attempt to describe the participants’ experiences of what a phenomenon “is like”; next, it involves an interpretive approach, which attempts to place this description in a “wider social, cultural, and theoretical context” (p. 104). The dual goal of discovering meaning and commonality involved the study participants as well as myself as the researcher, whose role it was to take participants’ accounts of their experiences deliberately *beyond* those accounts in order to reveal a phenomenon in the context of other possible associations (Dreyfus, 1991).

Levels of analysis. This study involves participants from two schools, merged together to form one group, as discussed in Chapter 3. Analysis was conducted at three main levels: themes for each participant, themes across participants, and researcher’s interpretation.

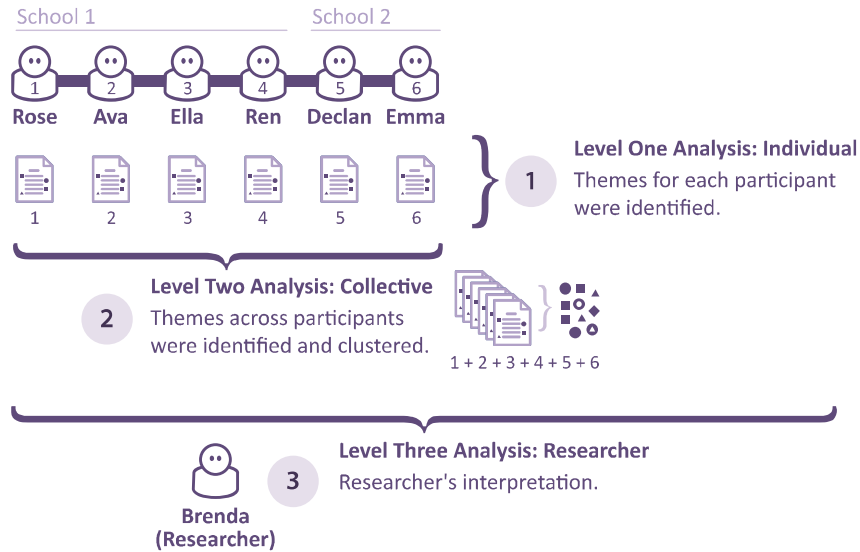


Figure 6. Levels of analysis.

Conducting IPA Analysis in this Study

As an IPA researcher, I remained close to the transcripts throughout the whole of the analysis. This immersion in the original data involved the following steps (Smith, Flowers, & Larkin, 2009):

- Reading and re-reading
- Initial noting
- Developing emergent themes
- Searching for connections across themes

Reading and re-reading. As has been previously established, IPA rests directly on the quotes of participants, so it was in the best interest of the research for me to engage with the original transcripts several times in order to gain a sense of the context of the themes (text and audio clues) that emerged in the analysis.

Initial noting. As the most detailed process involved in IPA, initial noting required that I keep an open mind regarding comments offered in participant interviews. I considered the following as I engaged with the transcripts (Smith, Flowers, & Larkin, 2009):

- *Descriptive comments:* focus on the participants' thoughts and experiences
- *Linguistic comments:* the ways in which language connects to concepts
- *Conceptual comments:* interpretation and researcher's personal reflections

According to Smith, Flowers and Larkin (2009), the IPA method offers guidelines for the investigation of a topic, but the "route through them will not be a linear one" (p. 80). In this study, descriptive and linguistic comments were included in the analysis phase of the work. The conceptual comments were developed as part of the interpretation, and are presented in Chapter 6.

The first step involved reading through the transcripts and underlining text that may be important to interpreting the data. The following excerpt provides an example:

Researcher: *And so when you took those moments, were you thinking specifically of heartfulness practice? Were you invoking the heart, or were you relying more on the breathing?* (Line #)

Participant: No. I was doing the heartfulness because I was practicing it. You know, on a regular basis. So I WAS doing MY version of it at that point, you know, at a moment of crisis, right? (laughs). So I was finding something that worked for ME, in it. (Line #)

I then copied the highlighted quotes directly from original transcripts and placed them in a table along with location information (line #) and an "exploratory" comment, which was used in order to identify the general content of each quote. (Table 2, below)

Table 2

Themes Table Version 1. Quotes from Original Transcripts Showing Location and Exploratory Comments [Related to the Cluster “Social and Emotional Learning”]

QUOTE FROM ORIGINAL TRANSCRIPT	LINE #	EXPLORATORY COMMENTS
Very new to my practice. Just asking and feeling like it’s not always up to me. That there could be, you know, a divine flow that will guide me to the best interests of everybody that’s there. But you need to ASK. So, and again, you can relate that to asking to God, or asking the heart, you know. To me, there’s no difference, when we ask our hearts, we’re asking God. So, that’s my spiritual philosophy.	1580-1584	Spirituality
...it was a complete flip. Yeah. And just, yeah, and it was just the calmness. I just remember. It was just everybody was calm, everybody was attentive. Um, yeah. And those moments don’t happen a LOT. I want, you know, that would be something again I want to evolve, right? to have it all the time and notice it.	1590-1593	Heart-based teaching
And I’m sure they’re, they are happening at some level, but, again it depends on how I respond, you know, and being open rather than having a preconceived idea, “This is what’s going to work and why.” Do I really know?	1593-1596	Openness
I mean, there’s a lot of beings involved here. What is best for everyone? It’s a totally different perspective. But it’s tough in a teaching position. You’re set up on a pedestal. You feel like you’ve gotta be in control. You’ve gotta manage things, you know.	1596-1599	Relationship with students

A list of all identified themes is presented in Table 3 in Appendix I. In the next step, I listed the frequency of each theme and identified emergent themes. I then searched for patterns between emergent themes, which allowed me to cluster “like” themes and then develop a “super-ordinate” theme for each cluster (Smith, Flowers, & Larkin, p. 96). A name for each cluster was either taken directly from one of the themes in the cluster, or abstracted from the general concept shared by the cluster. Table 4 in Appendix J illustrates this process. Themes and frequencies are presented alongside a listing of emergent themes and the total frequency for each.

Once the themes had been clustered and given super-ordinate category names, I returned to the first version of the themes table to examine the chosen quotes in greater detail, giving priority to those that seemed most appropriate to a given theme. In this case, colour coding of categories and quotes was used to support emerging themes in greater detail. (See Figure 7 below).

QUOTE FROM ORIGINAL TRANSCRIPT	LINE #	EXPLORATORY COMMENTS	Emergent Themes	F
I have done some yoga. So there's the mindfulness through yoga and stuff like that. I've done it for a couple of years. Um and then just hearing like meditation workshops and I hadn't gone to a full meditation workshop but I've read a lot about it and that kind of thing	2003-2005	<ul style="list-style-type: none"> • Previous experience with mindfulness 	<u>Mindfulness</u> Previous experience with mindfulness Meditation	4
and have sort of experimented a little bit with starting a meditation practice but it's always really hard to establish that habit for me. I can do it for a little while and then, like, your schedule changes. And I find that with being a teacher that your schedule changes so frequently, Um, you know, like, you are good for a few months and then it's Christmas holidays or whatever. So you sort of get into habits but then when school starts then the habits shift and change and it's hard to keep them up (laughing)	2005-2009	<ul style="list-style-type: none"> • Challenges to practice 	<u>Social and Emotional Learning</u> Connection Relationship with peers Relationship with students Relational energetics Classroom climate	26
	2017-2018	<ul style="list-style-type: none"> • Habit 	<u>Embodiment</u> Coherence Value of learning about the physiology of coherence Cat	11
I think it has. It's given me a different focus. Cause so much of mindfulness has been, I guess learning to focus either on you know, letting go and emptying your mind. Or learning to focus on your body and your breath. But nobody's really connected it to the heart and focusing there.	2023-2025	<ul style="list-style-type: none"> • Impact of heartfulness practice 	<u>Heartfulness</u> Understanding heartfulness <u>Effect of heartfulness practice</u> Meaning of heartfulness	5
And even the first time we did it, when Westmount brought in somebody to do a workshop, it was just like, oh this makes sense. This is something I can focus on. And it helped calm my mind a lot more than the other stuff I tried.	2015-2028	<ul style="list-style-type: none"> • Motivation for practice 	<u>Heart-based teaching</u>	1
Part of it was being a visual person. And so as soon as it was like "focus on your heart" I could picture it and got a really, like, strong visual connection to it. As opposed to, you know, emptying your mind or whatever, cause then it's a little harder	2034-2036	<ul style="list-style-type: none"> • Embodiment • Visualization 	<u>School context</u> Time	10

Figure 7. Identifying quotes to support emergent themes.

I then developed a second table of themes (Version 2) from the colour-coded quotes, which I used to connect themes to concepts relevant to the research questions.

Table 5

Themes Table Version 2. Quotes from Transcripts Supporting Emergent Themes

EMERGENT THEMES	QUOTES FROM ORIGINAL TRANSCRIPT	LINE #
Connection	...it's interesting because I think this year I probably have been the best TEAM member that I've been in any year of my career. And I think it's because of this practice. That, you know, I'm so much more accepting and less controlling. But, you know, I still have my moments. Don't get me wrong.	1654- 1657
Relationship with peers	I mean, there's a lot of beings involved here. What is best for everyone? It's a totally different perspective. But it's tough in a teaching position. You're set up on a pedestal. You feel like you've gotta be in control. You've gotta manage things, you know.	1596- 1599
Relationship with students	I would just say there's a lot more lightness, um, there's a lot more...I think you just, you SEE your students better. You observe them better. Um (.) You're more compassionate, more patient. Yeah. I think, yeah, you just start in a much better place.	1552- 1554
Relational energetics	I just think when you're calm and open and you kind of go with the flow of what everything, of course everyone's going to be more engaged and be able to learn better. There's no doubt about it.	1837- 1839

Up to this point, my analysis has been concerned with the preliminary steps of IPA (specifically, the processes of reading and re-reading, and initial noting) in identifying emergent themes. The next two steps of IPA involved developing emergent themes, and searching for connections across themes. These steps directly impacted the course of interpretation, as discussed in the next section.

Foundation for Interpretation

Levels of interpretation in IPA are “grounded in the meeting of researcher and text” (Smith, Flowers, & Larkin, 2009, p. 36). Participants remain at the center of the interpretation

since all emerging themes are constructed directly from quotes in the original interview transcript (as described in the previous section). Although I moved progressively away from the transcript throughout the interpretive process, IPA required that the interpretation consider the “parts in relation to the whole” at all stages, thereby placing the onus on me to ensure that the interpretation remained true to the participants’ accounts. This required that I returned to the transcripts from time to time in order to set a context for a particular quote, or to clarify a response, by relating it to the question posed during the interview. In this way, IPA is both phenomenological and hermeneutic in nature, contributing insights from both traditions. Smith, Flowers, and Larkin remind us that, “[w]ithout the phenomenology, there would be nothing to interpret; without the hermeneutics, the phenomenon would not be seen (2009, p. 37).

Different levels of interpretation in IPA may include any or all of the following: social comparisons, metaphor, connecting parts to the whole, and “invoking an extant theory which is then ‘read into’ the passage, offering a different epistemological perspective” (Smith, Flowers, and Larkin, 2009, p. 105)

Developing emergent themes. This stage of analysis required me to recognize and map the “interrelationships, connections and patterns” (Smith, Flowers, & Larkin, 2009, p. 91) that I encountered in the original transcripts. At this point, I moved away from a sole focus on transcripts and began to consider interpretation in terms of the exploratory notes that I made to accompany the participants’ accounts. It is here that the notion of the “hermeneutic circle” encouraged me to take into account the “parts and the whole” of the interview and consider both when moving toward interpretation of the data. Taking this perspective led me to “break up the narrative flow of the interview” (Smith, Flowers, & Larkin, 2009, p. 91) in order to focus on emerging themes.

Searching for connections across themes. Once I had identified themes, the next step was to determine connections among existing themes and to organize relevant themes. I discarded some themes, as they were not directly relatable to the original research questions. At this stage, I was “looking for a means of drawing together the emergent themes and producing a structure which points to the most interesting and important aspects of participants’ accounts” (Smith, Flowers, & Larkin, 2009, p. 96).

As Smith, Flowers, and Larkin (2009) described, “You will be inevitably influenced by what you have already found (in hermeneutic parlance, your “fore-structures” have changed). However there is an important skill in IPA in allowing new themes to emerge with each case” (p. 100). Fidelity to the systematic steps in organizing data should allow for this level of flexibility in analysis.

Content of the Analysis

Keeping in mind the steps to IPA outlined above, and moving on to the process by which certain emerging themes were chosen over others present in the transcripts, it was useful to return to the research questions:

- How do teachers who practice HRV biofeedback understand heartfulness?
- How might the embodiment of heartfulness practice influence teaching practice?

Distribution of themes in the data. The distribution of themes among participants for the two schools is illustrated in Figure 8 (see Appendix K). The data for School One represent themes identified for four participants and the data for School Two represent themes identified for two participants. These Figures were constructed using data from Figures 9 and 10 (Appendix L), which lists the frequencies of emerging themes. The data reveal that themes are distributed in similar proportions when the two schools are compared. Practice and Social

Emotional Learning are themes that appear in the greatest proportion of interview data. The emphasis on practice may be partly attributable to the notion that, although one of the research questions addresses meaning and understanding of heartfulness, it may be difficult for participants to describe experiences of such an ineffable concept as heartfulness. It may also be the case that heartfulness is a practice that must be cultivated, requiring time to develop the skills required to move from novice (explicit) to expert (implicit).

It is interesting to note that this distribution of themes may have been driven to some extent by the nature of the semi-structured interview questions. Included in Appendix N is a table representing the research questions, assigned to quadrants according to the organizing concepts included in the literature review. Themes were also represented in Figures 8–10 in Appendix K and L, which include the frequency associated with each.

Identifying super-ordinate and subordinate themes. A final stage of analysis in IPA involves the identification of super-ordinate and related sub-themes. Figure 11 (below) illustrates the chosen super-ordinate and sub-themes that formed the basis for interpretation and discussion in this study. According to Smith, Flowers, and Larkin (2009):

themes reflect not only the participant's words and thoughts but also the analyst's interpretation. They reflect a synergistic process of description and interpretation. Whilst initial notes feel very loose, open and contingent, emergent themes should feel like they have captured and reflect an understanding. (p. 92)

The most typical choice for a super-ordinate theme is determined by the strongest evident themes, meaning those that are most repeated. Although participants in this study discussed aspects of practice most often during our interview sessions (for reasons discussed in the previous section), I chose (1) Embodiment of Heartfulness; (2) Understanding Heartfulness; and

(3) Teaching as Heartwork as super-ordinate themes. The corresponding sub-themes include (a) embodiment and coherence; (b) meaning and understanding of heartfulness; and (c) relational energetics and classroom climate, respectively. IPA supports interpretation of special or single case themes. In this study, that category is devoted to spirituality. See Table 6 in Appendix M for an overview of unique themes for each participant.

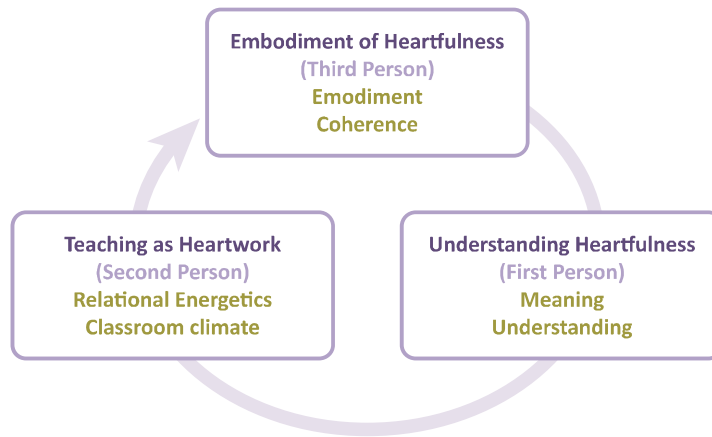


Figure 11. Main super-ordinate themes and related sub-themes.

In addition to the themes discussed above, I included participants’ quotes (those which included metaphors and descriptive language) to refer to their experiences of heartfulness in the interpretation. Reid, Flowers, and Larkin (2005) described the researcher’s role as twofold, embracing both ‘emic’ (phenomenological, insider) and ‘etic’ (interpretative, outsider) positions. This is “underpinned by a process of coding, organising, integrating and interpreting of data” (p. 22). These authors also noted that adherence to recommended structure of an IPA study (a coding overview, table of themes, hierarchy, or model) serves to provide a basis for representing “commonalities across the participants’ accounts, but should also attempt to accommodate the variations within the data set” (p. 23).

Smith, Flowers, and Larkin reminded us that within IPA research, “We are trying to understand, both in the sense of ‘trying to see what it is like for someone’ and in the sense of analysing, illuminating, and making sense of something” (2009, p. 36).

The next section briefly describes the process of writing in an IPA study, presented here as a guide to reading the analysis of themes presented in Chapter 6. In accordance with the method of IPA, close attention is paid to the voices of the participants via illustrative quotes in the context of identified themes.

Steps to Writing in IPA

Smith, Flowers, and Larkin (2009) described the process of writing in an IPA study. The standard approach is to introduce a super-ordinate theme, connect the theme to the literature, introduce a participant, and extract an illustrative quote from the participant. Presentation of analysis is not prescribed, but depends largely on the researcher’s decision-making in relation to the data collected. In this study, I have decided to analyze the themes by taking a “case within theme” approach (p. 109), which involves exploring themes (super-ordinate and subordinate) within the context of illustrative participant quotes. To this end, I have chosen to pursue the following steps to analyze the data in Chapter 6: introduce a theme, situate the participant’s relation to the theme, present theme-related data in the participants voice, and, finally, relate the participant’s quote to the relevant literature.

The first level of analysis for this study has now been completed with the identification of major themes. In Chapter 6, the second and third levels of the analysis are presented. The discussion now turns from the development of themes to the analysis of themes. Second and third level analyses feature data in the form of participant quotes regarding the research questions

along with the interpretation of the researcher in an attempt to explore meaning-making and connections to the relevant research.

Levels of Interpretation in IPA

Interpretation in an IPA study allows for, although does not require, up to four levels of interpretation which Smith, Flowers, and Larkin (2009) described as varying in intensity from simple description (choosing participant quotes), to intermediate levels involving the researcher's own "microanalysis of the text" (p. 104), most often involving a specific portion of a quote to examine in greater detail. Moving to the most demanding level, researchers are invited to invoke a "particular extant formal theory, which is then read into the text" (p. 105). It is interesting to point out that selecting the literature and situating a discussion of the topic within it is, in itself, a form of interpretation, and reflects the particular perspective of the researcher with regard to the research questions. The interpretation employed in this study utilizes aspects of all the above-mentioned levels.

*Rhythms of the heart
Universe collaborating
Life written on waves*

Chapter 6: Analysis of Themes

Heart to Heart

The writing has changed, in your hands, and in a twinkling, from an expression of your notions to an epistemological tool. The new place interests you because it is not clear. You attend. In your humility, you lay down the words carefully, watching all the angles. (Dillard, 2014)

Arriving at a Method

The opening chapters of this dissertation laid out the initial groundwork and theoretical foundations taken into consideration when embarking on this study. At this point, the participants have been introduced and situated within the context of their experiences with contemplative practice. As noted in Chapter 1, the establishment of a method for this study has been fluid in nature, spanning a range that can be mapped from Integral Theory, to Hermeneutics, and on to a final commitment to Interpretive Phenomenological Analysis (IPA). With each transition, the focus changed considerably. Integral Theory opened the door to multiple perspectives on the questions at hand. The hermeneutic lens opened the examination to the insertion of the researcher in the process of interpretation and exploring possibilities surrounding the topic. Moving on to IPA turned the study's focus to the primacy of the voices of the participants in conjunction with a "second level" analysis that includes the interpretation of the researcher. Embodiment has been identified as a central theme emerging from the data. It is important to note the coherence between the theoretical background for embodiment (the contributions of phenomenologists such as Husserl, Heidegger, and Merleau-Ponty as significant influences from the literature) and the theoretical foundations for IPA (see Chapter 3, Table 1).

In this chapter, I "engage with the research question at an idiographic (particular) level" (Reid, Flowers, & Larkin, 2005, p. 20). Quotes from the participants provide insight into their lived experiences of heartfulness in teaching practice. It is at this point that I am called to reflect

on and interpret the participants' own interpretations of their experiences—the double hermeneutic described by Smith Flowers and Larkin (2009) and mentioned in the previous chapter. IPA offers the chance to infer meaning from interview data by seeing participants as “embodied and encultured beings” (Reid, Flowers, & Larkin, 2005, p. 20). Reid, Flowers, and Larkin (2005) noted that IPA condones the second order (researcher) interpretation, connected to relevant research literature, “provided that they are developed around a central account of the participants' experiences (their phenomenological world)” (p. 20).

Expanding on the Literature

As discussed in the previous section, choosing Interpretive Phenomenological Analysis (IPA) grounds this study in phenomenology. In addition, the interpretive, hermeneutic component of IPA situates me as an active, although secondary, voice in the analysis. It is evident to me now that taking a meandering path in arriving at this method—exploring Integral Theory and Hermeneutics as possibilities—prepared me to recognize IPA as an appropriate and realistic approach to this research. Through course work and the process of exploring other possible research methods, I established an initial familiarity with phenomenology (Husserl, Heidegger) and hermeneutics (Gadamer). My interest in embodiment led me to Merleau-Ponty's writings on perception.

My research took a significant turn once I was introduced to Maturana and Varela's (1987) ground-breaking assertion that, “we have only the world that we can bring forth with others, and only love helps bring it forth” (p. 248) and Zajonc's call for an “epistemology of love” (2009, p. 181).

The following analysis is also grounded in the notion of shared energetic “fields,” optimal levels of which have been related to positive emotion, connection, and well-being

(Bache, 2008; Braden, 2007; McCraty, Bradley, & Tomasino, 2004); McTaggart, 2008; Muehsam & Ventura, 2014; Sheldrake, 2006).

Having established the above-mentioned work as relevant to my topic, I went on to discover “The Embodied Mind,” a work devoted to “cognitive science and human experience” (Varela, Thompson, & Rosch, 1991). In it lay the foundation for much of my further research, including links to Buddhist thought (Bush, 2011; Ekman, Davidson, Ricard, & Wallace, 2005; Flanagan, 2011; Kornfield, 2009; Varela & Poerksen, 2006; Vokey, 2008) and enactivism (Thompson, 2007; Varela, Thompson, & Rosch, 1993).

It is important to note that states of physiological coherence, as instances of cognitive facilitation, can be discussed in terms of embodied cognition or *enaction*—perceptually guided action. The relevance of this point will be expanded upon in subsequent sections.

Chapter Overview

In this chapter, I present an analysis of major themes. As discussed in Chapter 5, these themes were chosen as those most closely responsive to the research questions—even though participants devoted a greater amount of discussion to issues surrounding heartfulness practice and program development in their schools. It is interesting to note that some of the content of chosen themes, as concepts concerning meaning and understanding the ineffable, are to an extent, “unexpressable in the current Anglo-American language of logical positivism” (Malik, 1972, p. 54). Malik went on to mention the “failure of the cold logic of the physical and social sciences to satisfy the inner recesses of the human heart” (p. 54).

The major themes presented in this chapter are contextualized with respect to the research questions according to third person, first person, and second person perspectives. The analysis begins with a look at the third person perspective (objective), in which participants make

observations about their experiences with HRV biofeedback and then describe their physical embodiment of coherence. The first person perspective (subjective) explored in the next section is concerned with participants' understanding and meaning-making regarding heartfulness and expressions of their lived experiences of heartfulness. Next, in accordance with the notion that the physiological body is the lived body and vice versa (Carman, 1999; Gallagher, 2005), the concept of embodiment of heartfulness is further discussed in the context of first and third person perspectives combined. Moving on from the individual to the collective, the second person perspective is represented through an exploration of teaching as an emotional, relational practice with implications for classroom climate. Spirituality, a minor theme that emerged in the study, will be briefly addressed in the final section of this chapter.

HRV Biofeedback and Heartfulness – Third Person Perspective

The Heart Rate Variability (HRV) biofeedback practiced by participants in this study provided a platform for their perspectives and observations on the objective aspects of heartfulness practice as described in their responses to interview questions. The process of engaging with the HRV biofeedback practice relates to Hart's (2009) idea that knowing and learning consists of a mapping through "six interrelated layers" (p. 2): information, knowledge, intelligence, understanding, wisdom, and transformation. The participants themselves describe aspects of these layers in their observations about HRV biofeedback practice. Individual, third-person (objective) descriptions of the practice, and the ways that they physically experienced heartfulness, are presented below.

Descriptions of HRV Biofeedback and States of Coherence.

Rhythms show up in many aspects of life. They affect the way we feel by day or throughout the seasons. They affect our moods and attitudes deeply, even on a personal basis, so that some activities and personal disciplines "click" with us while others don't. (Muehsam & Ventura, 2014, p. 41)

Heart Rate Variability (HRV) biofeedback practice offered the participants the opportunity to monitor their HRV patterns in the context of their emotional states in order to learn to evoke states of physiological coherence and to demonstrate the “fundamental interconnectedness of mind and emotion, brain and heart rhythms” (Muehsam & Ventura, p. 40). Coherent heart rhythms convey system-wide bio-information to the body in support of health and well-being (McCraty, Atkinson, Tomasino, & Bradley, 2006; Muehsam & Ventura, 2014).

In the following quotes, participants described their HRV practice and the third person perspectives regarding instances of physiological coherence.

***ELLA:** I think the biggest connection was the whole idea of coherence...it wasn't until I started feeling the loving presence...then I could feel a shift into coherence. Like it deepened, I guess, the state that I would want to be in.*

***AVA:** Certainly when I'm thankful and grateful, I think the coherence level went up for sure.*

***DECLAN:** It's when my mind begins to creep back in, and I get stuck in the narratives, I can feel that the coherence level changes, depending on the topic. Just observing the way my heart is behaving in terms of coherence really changed the way that I can interact with my world.*

The concept of HRV and the HRV biofeedback practice were new to all participants. I remember when I first heard that the heart sends more information to the brain than vice versa, and I wondered, “Is this true? If so, how is this possible? and if there are health benefits, why is it that these ideas are not more mainstream?” I saw the same reaction in the participants as they first encountered heartfulness in this way. Their descriptions expressed the novelty of the idea of coherence, the connection to love and appreciation, confidence in recognizing coherence, and the ability to sustain it. In Declan’s case, he identified a particular distinction between states of coherence (heart-based) and the way the mind “creeps back in” during the practice, effectively lowering the level of coherence previously experienced when attentive to “heart.” With

experience, the teachers developed a new awareness of their capacity to deliberately invoke instances of positive emotion and the impact of that shift on their well-being.

HRV Biofeedback and Embodiment.

The life of the body always seems to me to be something which is experienced as a constant movement between the loss of equilibrium and the search for a new point of stability. (Gadamer, 1996, p. 70)

From a third person perspective, the body is considered an object, and its physiology has historically been considered as “mechanistic” (Merleau-Ponty, 1945/2013, p. 101). The HRV biofeedback practice was utilized in this study to provide a means for participants to become aware of the physiological responses accompanying their emotional states.

McCraty, Bradley, and Tomasino (2004) referred to *the resonant heart*, a perspective that incorporates the body’s “heart field” (p. 15) as a vital synchronizing influence on bodily functions system-wide. These researchers described their perspective as follows:

...the encoded information acts to *in-form* (literally, *give shape to*) the activity of all bodily functions—to coordinate and synchronize processes in the body as a whole. This perspective requires an *energetic* concept of information, in which patterns of organization are enfolded into waves of energy of system activity distributed through the system as a whole. (p. 16)

Physiological coherence arises in the body via the emergence of smooth, sine-wave like heart rhythm patterns that accompany positive emotional states such as love, appreciation, and compassion. These emotional states also accompany the body’s biological electromagnetic fields (EMFs), which function as a “dynamic bioinformation network, or “biofield,” intimately involved in regulating many vital biological processes” (Meusham & Ventura, 2014, p. 48). McCraty, Bradley, and Tomasino (2004) referred to the body’s “heartfield,” which acts as “a

carrier wave for information that provides a global synchronizing signal for the entire body” (p. 15).

The following descriptions of HRV practice situate teachers’ observations of embodiment in the sense of the “physiological” body (Gallagher, 1986). According to Paulson (2007), this objective perspective is concerned with the “physical body of cells and organs” (Paulson, 2007, p. 368). HRV biofeedback practice develops structural changes in our bodies by influencing the system-wide patterns of information exchange.

In response to the question, “Can you describe your physical experience with the biofeedback program?” teachers responded in this way:

ROSE: *Being more aware of your body and how your body is reacting, and your emotions and how they’re being affected and I think it’s all connected.*

REN: *It’s focusing on that gratefulness and appreciation as well as focusing on your heart as an organ and sort of feeling the way that it beats...And just being aware of that movement...you can sort of feel a little bit of tension released. I tend to move around or fidget or whatever and when I’m in that coherent state I don’t need to do that as much.*

EMMA: *When I just do the breathing and I don’t do the connecting to the heart it doesn’t do the same thing. It seems more mechanical, I guess...it feels different if you’re focusing on how it’s coming in and out of your heart. Much different feeling.*

AVA: *The biofeedback was just nice because then you can tap into what’s going on in your body and then you have, like, this gauge of what is going on. It’s almost like I can feel the breath moving from navel to throat and throat to navel. And so having that connection through the spinal channel. So I think I can FEEL that when I’m really in that coherent state. If I’m in a coherent state my body’s not so rigid...like my body will like just sink into the seat and I feel comfortable.*

The insights provided in the participant quotes above suggest a new awareness of the body as a resource capable of interacting with the world with more ease. Focusing attention on the heart as opposed to concentrating on thoughts sets the stage for a connection to the energy generated in our moment-to-moment experience. States of positive emotion, physiological coherence and heartfulness influence the *biofield* or *heartfield* (mentioned above) in a positive

way, noted by participants as *release of tension* (Ren), *breathing not so mechanical* (Emma), and *a new sense of comfort while meditating* (Ava). In Emma's case, the focus on breathing took on a new quality when she connected the breath to an awareness of her heart, taking it beyond a mechanical exercise. The shift from thinking to feeling is expressed in Ava's comment that her body is less tense during states of coherence; this experience can be understood in terms of the engagement of a balance between the parasympathetic sympathetic branches of the ANS coming into play to increase the sense of the whole body feeling at ease. Forbes (2011) suggested the following connection between body, emotion, and healing:

Conceptual insight is not required for change; in some cases it actually interferes with it. By working in a body-based realm, we can bypass this mental interference. We can feel rather than think the emotional experiences that heal us. (p. xiii)

Teachers reported experiences that connect previously overlooked emotion (when engaged in mindfulness practice) as important factors in relating to experiences and environment. Over the course of the heartfulness workshops, as they increased their knowledge of the science of the heart and continued with their personal HRV biofeedback practice and heartfulness meditations, they progressed from *knowing that* heartfulness promotes positivity to *knowing how* to develop it personally and incorporate it in their teaching practices.

Reflection. In the fall of 2018 I participated in an 8-week Mindfulness Based Stress Reduction (MBSR) program offered in support of faculty and staff at a western Canadian university. One of the introductory exercises was the body scan, in which participants were guided through a meditation wherein participants were instructed to pay particular attention to the body in a sequential manner (in this case from toes to crown). As participants in the workshop reflected on the exercise, I was surprised by the admission of one participant that, in

her daily life prior to the MBSR program, she had not paid any attention to her body and the ways in which attending to its messages may contribute to her pursuit of well-being. I recognize in this woman's story the importance of extending the scope of embodiment in mindfulness meditations to include discussions of emotions and their impact on our physiology.

Understanding Heartfulness – First Person Perspective

The first person perspective concerns the subjective, individual perspective, or that which Gallagher (2012a) described as “the way we experience things” (p. 8), which is made available to us through conscious awareness. As Paulson (2007) explained, this first person (subjective) perspective includes “one's feelings, meaning, values, thoughts, and concepts” (p. 368) concerning the topic. Through this lens, heartfulness may be viewed phenomenologically. Participants in this study were asked to comment on their personal experiences of heartfulness practice:

***ELLA:** It's just being in the moment and being open to listen to your heart...your heart is wise. It will tell you, it will lead you in the right way. This thing (pointing to her own head) won't.*

***DECLAN:** It's been an aspect of something really transformational. It's brought a different light into my life. And I appreciate that very deeply. The new perspectives that I have to interact with people and the way I can interact with myself and appreciate myself has been tremendously eye opening. It has enriched my life in great ways.*

Participant teachers reflected on appreciation, a new perspective on relationships, and personal transformation. Ella's and Declan's first person experiences of heartfulness are examples of understanding a topic in a new way. This new understanding is already an interpretation (Gadamer, 1960/2013). If we consider the idea that “the world is interpretable” (Moules, 2015), understanding can then be situated as a process including the relationship between the parts and the whole—in effect, the relation between subjective experiences and the new meanings that they may contribute to the understanding of the topic in the world. These new

understanding create new associations and serve as a “connection to a perspective that is broader than my opinion” (Moules, 2015). Teachers incorporated new understandings into their lived experiences in a very personal way and noted how they found a new source of direction and enrichment.

Participant insights into heartfulness.

Wisdom mind needs to be wedded to a tender heart. Kornfield (2015)

There has been a renewed interest in the notion that mindfulness leads to heartfulness (Daugherty, 2014a), which has incited a turn toward considering the heart, emotion, and embodiment as important facets of contemplative practice. This is not to say that mindfulness programs such as Mindfulness Based Stress Reduction (MBSR) and other mindfulness meditation practices exclude the influence of the heart altogether. But expanding the conversation surrounding heartfulness as a complement to mindfulness in the pursuit of well-being may be an important direction to pursue (Campbell, 2016; Chauhan, 2016; Davis, 2015; McKenzie, 2018; Searle, 2016; Sofer, 2016; Teoh, 2018; Van den Brink & Koster, 2015).

As mentioned in the literature review (see Chapter 2), heartfulness has been referred to as “compassionate mindfulness” (Kabat-Zinn, 2015) and “pristine mindfulness” (Kwee, 2015). These concepts are not new, as pristine mindfulness is associated with a Buddhist perspective and, as Kabat-Zinn reminded us, compassion is the core universal emotion. However, these concepts are gaining ground in current discourses regarding contemplative practices in general.

As participants explain below, HRV biofeedback practice, along with heart-focused meditations (i.e. Loving Kindness and Compassion), brought a new awareness to the emotional aspect of their contemplative practice, and brought about noticeable changes in their perspectives and experiences, both in their personal lives and in the context of their teaching practices.

AVA: Bringing attention to this positive feeling is maybe something I didn't think about before.

EMMA: I'm more aware. I really didn't get it I guess. It just seems like it was hard to connect with those ideas? Or it was for me? And now it's almost like, maybe all the times when I was trying to get relaxed, now I am more focused on being aware but calm...so it's kind of shifted...It's more about what you're feeling and what you're offering to the kids. I could feel more connected and I could see more benefits as I practiced it. Whereas maybe before I just couldn't find the foundation to build anything off of.

ELLA: Connecting to the heart has brought it to a whole new deeper level. So that's my connection now...is heart and then of course, love. Am I making every decision with the intention of love behind it? ...now it's like asking within...it's a journey that's continually evolving.

Participants' comments support Daugherty's (2014a) view that mindfulness leads to heartfulness. They reveal the movement toward heartfulness to be the result of a new attention to and awareness of emotion—in particular, love. Ella's expression of a deeper level of connection to her own heart is a journey that she now embraces. As I read these insights into heartfulness, I recognized the consequent transformative journey it initiates and how this transformation may be the result of a new quality of presence.

Meaning of heartfulness. Kornfield (2009) described heartfulness as a unique and different state of being, one that offers dimensions of experience that uncover capacities that you may not have been aware were in your reach. As discussed in introductory chapters, contemplative practices in education have been typically focused on mindfulness practice (Miller, 1988, 2014; MindUp, 2013; Zajonc, 2009), but “the wisdom of the heart must catch up with our overdeveloped ‘thinking heads’ if we are to survive...we must develop a new consciousness of the heart” (Godwin, 2001, p. 18). Carmen (2015) asks, “Given this seeming dominance of the mind and intellect, what does it mean to be guided by one's heart?”

A primary focus of IPA studies is the sense-making, or meaning-making, of individuals concerning the phenomenon under study (Smith, Flowers, & Larkin, 2009). Teachers in this

study were mindfulness practitioners in one form or another, mostly familiar with focusing their attention on calming the mind by returning attention over and over again to the breath. The concept of heartfulness as a practice was new to all participants, and learning to focus on the qualities of the heart took time and practice. As demonstrated in the quotes below, participants developed meaningful interpretations of their experiences with heartfulness practice.

***REN:** The heartfelt is more emotional right? It sort of connects more into those deep emotions as opposed to the rational thought.*

***ELLA:** I just feel enveloped by love or joy. I can feel the shift of lightness...it's just being in the moment and being open to listen to your heart.*

***DECLAN:** It's connecting with the feeling of love. And that...while it's timeless, it's something we seem to have lost connection with...to me, the heartfulness really is a connection with myself that allows me to connect through love to other people. I think I'd been hearing the messages over and over again but not listening, not really hearing. There is this whole other world of experience that we can imbed ourselves in and investigate. It's worthwhile because it's personal growth.*

Most notable from the above participant quotes is the emphasis on the affective component of heartfulness practice as meaningful in their experiences. Particularly interesting is the way heartfulness practice has taken their contemplative practice into this new and complementary dimension. Participants expressed these new meanings in terms of connection and personal growth as a positive new aspect of contemplative practice.

Lived experience of heartfulness practice.

Habits connect the biological and cultural. (Hildebrand, 2008, p. 26)

Heartfulness workshops with participant teachers were conducted over two school terms in which heart-based practices, including HRV biofeedback and heartfulness meditations were introduced. Participants' commitment to heartfulness practice can be considered as taking steps to establish a new habit, and habits "are not simple things; they are composed of acts" (Hildebrand, 2008, p. 24). In terms of the study of habit, the body can be simultaneously

understood in terms of phenomenology and in terms of its capacity to structure experience (Gallagher & Zahavi, 2013; Moya, 2014). Wallace (2006) noted that developing the ability to consistently focus attention supports the cultivation of positive qualities that can be “used to develop an openhearted stance toward others” (p. 8). Teachers’ contemplations on their lived experiences of heartfulness practice demonstrate a heightened connection to awareness, emotion, and the discovery of spaciousness:

***AVA:** I am more aware of the space and finding this positive feeling when you’re maybe not in a good space and coming back to the heart...I guess feeling appreciative and feeling gratitude for things in my life and just being open in that space, heart space.*

***EMMA:** I just do it even in a conversation... the practice just becomes how you **live** then, which is really neat...I just feel like I’m just kind of “with” whatever’s happening. I’m aware and I can be responsive, but effectively responsive? It feels like there’s space. Whereas I guess when I used to be all stressed and panicked I just felt like there was nowhere to move. It does feel open.*

***ELLA:** Then right when I start thinking of love and making those connections, whether it’s praying, or whether it’s seeing an image or being somewhere that I just feel enveloped by love or joy, that I can feel the shift of lightness.*

***DECLAN:** As soon as I realize that I feel different I can drop everything analytical and say, “I like to feel” and now I can just go feel.*

Spaciousness, openness, and lightness were concepts highlighted by participants when they were asked to describe their lived experiences of heartfulness. This open-hearted perspective fosters resilience—the ability to prepare for, respond to, and recover from adversity (McCraty & Childre, 2010; McGonigal, 2015).

Positivity accompanies coherent heart rhythms and is characteristically expansive in nature with regard to emotion, connectivity, and well-being (Fredrickson, 2004; McCraty & Rees, 2009; Forbes, 2011). Establishing a habit of responding positively becomes, as Emma explains, *how you live*. And how you live, in turn, affects those you live *among* and *with*, as we are accountable for the contributions we make to the fields of energy in which we exist.

Over time, the habit of heartfulness helps us to acquire new “tendencies” or “dispositions” that are not fixed in any way, but “capable of redirection and change” (Hildebrand, 2008, p. 25). The new openness referred to as a new aspect of lived experience can be linked to the system-wide physiological reset that accompanies sustained practice with HRV biofeedback practice and heartfulness meditations.

Metaphor and lived experience of heartfulness. As discussed earlier in this dissertation, physiological coherence manifests in the body through a particular pattern of HRV, which accompanies states of positive emotion such as love, appreciation, and compassion. One of the ways to understand the experience is through the use of metaphor, especially since we do not always have appropriate language with which to describe such experiences (Foster, 2009). Dale (2009) introduced the notion of *the immeasurable* as a foundational component to experience, a perspective that is being increasingly illuminated as qualitative studies continually gain ground and stand alongside the quantitative in our attempts to explore ways of being in the world. Acknowledging metaphor allows for the inclusion of “an emotionally vulnerable, linguistically evocative, and sensuously poetic voice can bring us closer to the subjects we wish to study” (Pelias, 2004, p. 1).

According to Lakoff and Johnson (1999), metaphor constitutes “the very means by which we make sense of our experience. Conceptual metaphor is one of the greatest of our intellectual gifts” (p. 129). Johnson (1989) connected the bodily patterns we experience to the ways in which these experiences may be expressed in words:

...the cyclic patternings of our meaningful experience are *known rhythmically through our bodies*...We experience this flowing, pacing, cycling, speeding up, slowing down, rushing, tumbling rolling movement of time (and even of our spatial sense)...We have

meaningful experiences that we can deal with precisely because we are un-reflectively responding to and modulating the cycles within which we find ourselves. (p. 369)

In the above quote, Johnson connected the rhythms and patterns of the physiological body to the senses, a link that pertains directly to the experiences described by study participants as they attempt to express their lived experiences of heartfulness.

ROSE: *It can take me a little while to get into coherence. But the moment I hit that I can feel a, like a wave of calm almost, and peace. And so I often end the session as peaceful.*

EMMA: *For me it's mostly like getting over a speed bump in your heart. ...You kind of flip over or something right? And then you're into the sailing. (laughing). You just kind of smooth yourself over, yeah, and then you're good...that's exactly what it feels like to me.*

DECLAN: *For me, it's felt like the heart-strings. As though there are, in fact, heart strings and I can go grab them and I can pull them where I want. So I can actually lift my heart up and have it into this higher state if I want to.*

As Lakoff and Johnson (1980) stated, “understanding a sentence as true in a given situation involves fitting our understanding of the sentence to our understanding of the situation” (p. 172). Rose’s *wave of calm*, Emma’s *getting over a speed bump, smoothing, and sailing*, and Declan’s reference to *heart-strings* are all indicative of “*cordiology*”, a term coined by Swiss cardiologist Nager (1995) to describe “the symbolic language of the heart” (Godwin, 2001, p. 141). Godwin explained:

The cordiological heart sings, laughs, rejoices, cries, awakes, flourishes, complains, trembles, shatters, bleeds, languishes, breaks...Making room for myth and symbol can enable us to see how one thing depends on another...Cordiology could show us that cardiology is part of a network of correspondences, analogies, and deeper relationships of which, up to now, too little account has been taken. (p. 142)

Metaphors such as *whoomph* (Varela, as cited in Goleman (2008), *ping* (Hart, 2009, p. 110), and *click* (Aoki,1993, p.210; Muesham, 2014, p. 41) have also been used to describe

aspects of mental and emotional harmony, physiological coherence, and instances of heart-opening. In a subsequent section, describing her experience with placing her hand on her heart during heartfulness meditation, participant Emma refers to the lived experience as a *whoosh* in her body. In my own experience, I have used *spilling over* and *falling into* when trying to find the words to describe my experience of coherence and heartfulness.

Reflection.

Whatever we give space to can move and reveal itself to us. (Kornfield, 2018)

When I reflect on participants' comments regarding awareness, emotion, and spaciousness, I find myself looking once again to yoga practice to find another way to express these insights. Experiential practice of yoga offers "embodied insights" (Forbes, 2011, p. 7) such as those that the participants articulated above. These insights transfer from the physical practice into our lived experience.

A common instruction during yoga practice is to pay attention to the breath as you move through the postures, inhaling to support effort and activation and exhaling to enhance relaxation as the pose is released. In this way, yoga poses can be seamlessly linked together with breath. With each breath, the body is able to move toward the full expression of a pose as the muscles and connective tissues open. The breath is used to support the poses and may be considered as a way to create spaciousness in the movement. I liken this opening to that which takes place during heartfulness meditation. The spaciousness described by participants might be considered as the expansion of the heart's energetic field to include an acceptance of self and others. Meditating in this way creates space in the heart to hold the self and its emotions, and also creates space to receive others. Strom (2012) described heart-centered meditation as "revolutionary" (p. 50) in that, "in our own hearts we can reach out to heal the world and by doing so, heal ourselves" (p.

51). By extension, expansion of the heart field may result in more positive relational energetics that contribute to healthy and supportive classroom environments.

Embodiment of Heartfulness – First and Third Person Perspectives

What is the relationship between science and bodily experience? How does one arise out of the other? Can science be connected again with our own lived experience? (Gadamer, 1996, pp. 71-72)

Gadamer expressed enduring questions concerning the connection between embodiment, science, and lived experience—ideas that were opened up by Merleau-Ponty (1945/2013; 1996) and Husserl (as cited in Welton, 1999) and continue to resonate today as we explore possibilities for a deeper understanding of the connection between first and third person phenomenological perspectives. Taken in terms of relationship to consciousness in general, the importance of these issues is expressed contemporarily by Zahavi (2012):

Rather than taking the objective world as the point of departure, phenomenology precisely asks how something like objectivity is possible in the first place. How is objectivity constituted? ... Phenomenology is not interested in consciousness per se. It is interested in consciousness insofar as consciousness is world-disclosing. (p. 2)

The primacy of participant voices has been acknowledged as central to IPA and every attempt has been made to focus on participant quotes that may be considered “world-disclosing” in relation to the research questions. As shown in the previous sections, it was possible to present quotes from the first and third perspectives discretely, when participants were asked to respond to questions that addressed these perspectives separately. However, some responses to questions regarding embodiment were not so easily distinguished as first or third person stances.

Teachers’ connections to embodiment via the HRV biofeedback practice provided the impetus for an increased awareness, beyond the focus on breath, to the ways in which

connections to the heart may be made available to consciousness. Both quotes below note the potential for a different experience than mindfulness practice alone had provided:

EMMA: *Cause with the biofeedback and also just with the ideas, like, even the weird thing when I'm breathing deeply I'm thinking about my diaphragm or whatever, my lungs and stuff. But when you're saying breathing in and out of your heart it gives you a different focus, which actually helps, I think. Rather than, I don't know, it's more not just physical, physical and spiritual at the same time which is much more soothing, right? I don't know. So that I found, that helped. Put all the pieces, like make them all come together.*

REN: *Part of it was being a visual person. And so as soon as it was like "focus on your heart" I could picture it and got a really, like, strong visual connection to it. As opposed to, you know, emptying your mind or whatever, cause then it's a little harder.*

A focus on the heart opens up awareness of embodiment of the affective component of contemplative practice. As mentioned earlier in this thesis, "we see the world through how we feel." In this way, the "physiological body" can be seen to influence the "lived" body, effectively altering the way we interact with our world.

Hand on heart.

...the more I tried to control my experience, the more I was kind of in that prison as a small, limited self. And that instead of controlling what was going on, there was a quality of kindness, and when I put my hand on my heart, if in some way I could pause and offer some compassion inward, and if in some way I could just rest in what was actually happening, things would open up. So there was a movement, the insight that controlling keeps me suffering, kindness and letting be relaxes me open. (Brach, 2017)

Teachers were invited to place a hand over their hearts while practicing the heartfulness meditations, if they chose to do so. For some, this altered the experience in remarkable ways.

Emma described her experience:

EMMA: *It feels like, it's almost like connecting with another person...you feel more of a connection, which is weird 'cause it's just you but there's an additional layer. I don't how to explain that. 'Cause it feels like another person (laughing). Like if you're hugging someone or you've met someone you haven't seen for a long time. Like there's just that "whoosh" feeling. I get that feeling, yeah.*

Emma's experience illustrates the concept of double embodiment that Merleau-Ponty so eloquently and provocatively put forward:

We say therefore that our body is a body of two leaves, from one side a thing among things, and otherwise what sees them and touches them; we say, because it is evident, that it unites these two properties within itself, and its double belongingness to the order of the "object" and the order of the "subject" reveals to us quite unexpected relations between the two orders. It cannot be by incomprehensible accident that the body has this double reference: each calls for the other" (Merleau-Ponty, 1964, p. 137).

Emma's experience of placing of her own hand on her heart is an example of the capacity of our bodies to be at once the subject and object (Varela, Thompson, & Rosch, 1993). Taking the participant quotes into consideration and recognizing how they place their experiences in *both* the physical and phenomenal realms provides support for Merleau-Ponty's of the *chiasm*, which refers to the idea that:

every relation with being is *simultaneously* a taking and a being taken, the hold is held, it is *inscribed*, and inscribed in the same being that it takes hold of.... It is not *above* life, overhanging. It is the simultaneous experience of the holding and the held in all orders. (Merleau-Ponty, 1964, p. 266).

Merleau-Ponty's view of embodiment may be extended to the previously mentioned relationship between physiological coherence and cognitive facilitation, thereby linking states of coherence to the view of cognition as embodied action or *enaction* (Varela, Thompson, & Rosch, 1991, p. 22). According to Varela, Thompson, and Rosch (1991) the world as enacted is "inseparable from the structure embodied by the cognitive system" (p. 140)

A Buddhist perspective on double embodiment is expressed in the notion of The Two Truths—the view that our lives are experienced simultaneously through the personal and the universal (Kornfield, 2008; Varela, Thompson, & Rosch, 1991). Kornfield described The Two Truths as “two complementary aspects of reality” (p. 80).

These ideas, including the view that “enactive accounts of perception that draw from both phenomenology and natural science” (Gallagher, 2012b) will be more fully discussed in Chapter 7, in the context of the possibility of naturalizing phenomenology (Gallagher, 2012b; Roy, Petitot, Pachoud, & Varela, 1999).

The next section in this chapter extends the exploration of the heartfulness in pedagogy to include “teaching as heartwork” (Bosetti, 1995), which takes into account emotion, mood, and presence as points of reference. The relational aspects of heartfulness practice, and their influence on classroom climate, are also discussed.

Teaching as Heartwork – Second Person Perspective

...heartening the human in us and humanizing the heart in us. (Godwin, 2001, p. 26)

When discussing intersubjectivity in the context of this study, it is important to note that there is the potential for confusion when considering two existing notions of the second person perspective. In the first instance, Varela and Shear (1999) described the second person perspective as related to method, and referred to the *heterophenomenologist*, or the “individual who is present as a situated individual who has to generate intentional interpretations of the data” (p. 10). They described the *heterophenomenologist* as an “empathic resonator with the intention to meet the other on the same ground, as members of the same kind” (p. 10). In this study I, as the researcher, occupy this second person position while conducting the interpretive portions of the analysis, especially the hermeneutic component. In the second instance, the second person

perspective takes into account intersubjectivity, and the ways that interpersonal relationships contribute to group experiences and culture in particular environments. The latter position is the intended use of “second person” as it relates to data analysis in this study. The discussion now turns toward heartfulness in teaching practice.

Weaver and Wilder (2013) recommended several practices that teachers can use to inform their “own teaching practice and to support [their] capacity to create connections and positive relationships with [their] students and colleagues” (p. 22). Among these principle/practice dimensions, Weaver and Wilder include the following guidelines:

1. Sustaining an open heart by overcoming obstacles to caring, including vulnerability, and considering forgiveness.
2. Investing in relationships and community building by modeling and encouraging authentic self-expression, cultivating gratitude and helping students develop compassion (pp. 22-30).

Weaver and Wilder described this process of fostering aliveness and interconnection in the classroom as “cultivating an open heart” (p. 21). Caring, vulnerability, gratitude, and compassion are concepts that were embraced and interpreted by participant teachers and, as such, have been included in the following discussions.

Teaching as an emotional practice.

It is only as a body that I am visible and sensible to others. The body is my insertion into the common, or intersubjective field of experience. (Abram, 1996, p. 44)

The notion of teachers’ social and emotional competencies (SEC) was discussed in the literature review in Chapter 2. Resilience is a major competency that teachers are able to cultivate with the practices of mindfulness, heartfulness, and HRV biofeedback as ways to facilitate development of SEC. An argument could be made that presenting teachers with yet one

more task to do, one more program to follow, or one more new idea to incorporate into practice may be adding to their already full workloads and the stress they report as a consequence of the circumstances surrounding the practice of teaching itself. However, “almost all teachers want training in social-emotional learning, but only half actually receive any kind of training—and most of it is incomplete” (Zakrzewski, 2014). Mindfulness practice is incorporated into the SEL curriculum, although I suggest that a focus on mindfulness without a consideration of heartfulness—as in the exploration of compassion and loving kindness—renders a curriculum incomplete.

Concerning the meditative aspect of contemplative practice, Salzberg (2016) stated, “Meditation practice is training resilience—we are always having to begin again—this is the human condition.” Resilience may also be understood in terms of Buddhist perspectives, specifically, The Four Immeasurables, or *Brahmaviharas*: loving-kindness (metta), compassion (karuna), empathetic joy (mudita), and equanimity (upekka) (Ekman, Davidson, Ricard, & Wallace, 2005; Eppert, 2010; Salzberg, 2016; Wallace & Houshmand, 1999). This complement of practices has long been associated with heart-opening and an increased capacity to connect with others.

Participant teachers contributed the following observations regarding the role of emotion in their practice.

ROSE: *When we're calm, we can pass that on to them because they can read it in us... we can offer that as a way of teaching the children how to manage their day and manage their relationships.*

ELLA: *Sometimes I think, “Is it because you don't want to FEEL the sadness? Do you not want to connect to the heart?” So let's just get busy. Let's just get busy, right? And not really feel what you're feeling. So I think that's a process that I have to accept. Honour that part.*

EMMA: *If previously if I was worried about something or upset about something that would kind of distract me from whatever's happening right in the moment with whoever's in front of me. But now I can sense that straying and I can pull myself back.*

The teachers noted the capacity of their own emotion regulation as a means to model emotional intelligence, instances of using *busyness* as a distraction from emotion, and recognition of emotional states as “markers” for potential negative responses to adversity and signals to “respond rather than react” when worried or upset.

Emotion/Mood.

It is not enough to say that the mind is embodied, one must say how.
(Edelman, 1992. p. 15)

The link between the body and emotions has been acknowledged as far back as the 1800s, with James's (1890/1950) observation that “bodily changes follow directly the perception of the exciting fact, and that our feeling of the same changes as they occur IS the emotion” (p. 449). James used the term *thought-feeling* to refer to the connection of the two (Johnson, 2016).

As aforementioned in the literature review, Plutchik (2003) stated that emotion and affect are often used interchangeably, with mood understood to be “a longer lasting emotional state...sometimes as a low intensity background” (p. 63). Kornfield (2009) described mood as, “mental states that flavor consciousness” (p. 129). Heidegger connected this bodily characteristic of emotion to “our situatedness in the world” (Stolorow, 2013, p. 8), and expressed it as a “bodying forth” (p. 9). Todres (2007) reminds us that, according to Heidegger, “mood is intimate to understanding. He restores emotional atmosphere or heart to the experience of understanding by indicating how understanding is existentially situated” (p. 10).

Edelman (1992) called for attention to be paid to the “how” of embodiment. As emotion and feeling are gaining consideration as important components of cognition (Colombetti, 2010; Colombetti & Thompson, 2007), more attention should be paid in terms of “how the body shapes

the mind” (Gallagher, 2005), as this may provide insight into the “how” of embodiment.

The notion of emotions as “*energy in motion* or *e-motion*” has been put forth in contemporary research (McCraty, 2003; McCraty & Rees, 2009; Pert, 1997; Ward & Stokes, 2018). As Pert expressed it, “what is it that flows between us all, linking and communicating, coordinating and integrating? ... The emotions are the connectors, flowing between individuals, moving among us as empathy, compassion, sorrow, and joy” (p. 312). Muehsam and Ventura (2014) describe the *biofield* (p. 41) and McCraty, Bradley, and Tomasino (2004) referred to the body’s *heartfield* (p. 16) with regard to the electromagnetic, rhythmic, and oscillatory nature of emotions.

Teachers commented on the ways emotion manifested in their lived experience during their heartfulness practice. Their experiences reflect the second person perspective as follows:

ELLA: *I would love us to start our day, every day, just connecting with our hearts. ‘Cause not only will it benefit them, but it will also remind ME, you know, CONNECT*

ELLA: *I have come to the point because of this practice. I’m not embarrassed to cry into front of the children. I mean if I read a story and it’s sad, I’ll cry. And if something happens, I’ll cry. I hear teachers going like, “That would be the worst thing to do. Like, don’t ever cry.” Right? And so we’ve had those conversations. Like, why? Why is it bad to show emotion, you know?*

REN: *I’ve also noticed a difference in my classroom If it’s sort of like a calm, coherent space, versus like that chaotic, everybody’s really high-energy kind of a space. So there is a difference.*

DECLAN: *So many people seem to conceive of themselves as, “I am this entity” and don’t think of that reflexivity of “I interact with my surroundings, it interacts with me” and we both end up changed...understanding that the way I feel is just that. It’s a feeling. It’s something that can pass. If you want it to be different, change it.*

Teachers’ comments on the emotional aspect of their practice support the notions of connectivity (Ella) and energetics (Ren). Declan’s account illustrates the transitory nature of emotion (*e-motion*) and the transformative aspect of a connection with one’s surroundings. Ella

offers an interesting perspective with her question, *Why is it bad to show emotion?* This question helps to position emotion as requiring more support in order to become a valued component of teaching practice.

Presence.

...under it all runs this cello note of presence, and that's what makes the thing work.
(O'Reilly, 1998, p. 17)

The notion of presence is encompassed in the title of this dissertation—Teacher as Environment. The assumption is that, by caring for her own emotional well-being, a teacher may influence her relationship with students and, ultimately, classroom environment through a shared energetic environment (*heartfield, biofield, social field*). O'Reilly (1998) commented further:

I've spoken of presence as an aspect of hospitality; now I'd like to focus on it more specifically as a central premise of classroom "management." Presence, mindfulness, or—as I sometimes introduce it to students—*being awake* is an important Zen discipline, a dimension of contemplation, carried into the world. (p. 9)

In the previous section, emotion was discussed in terms of opening the possibility for connection, and its relationship to how we experience our situatedness in our environment. Emotions contribute to the shared energetic fields in which we conduct our everyday lives, effectively colouring our experience of *presence*—both our own and that of others. Rodgers and Raider-Roth (2006) defined presence as:

a state of alert awareness, receptivity, and connectedness to the mental, emotional, and physical workings of both the individual and the group in the context of their learning environments, and the ability to respond with a considered and compassionate best next step. (p. 265)

Miller (2014) noted that “presence of the teacher,” as one of teaching’s “basic factors,” (p. 139) is often overlooked in teacher training in favour of theory and teaching practices. He acknowledged that “teacher presence” is “critically important, especially in holistic education” (p. 140). In terms of the contemplative in education, Kabat-Zinn (2010) refers to the *nian*, the Chinese ideogram for mindfulness, reminding us that it contains “the character for presence over character for heart—you have to understand that it is presence of heart.” Nhat Hahn and Cheung (2011) noted that, “the combined character means the act of experiencing the present moment with your heart.”

Miller (2014) addressed *presence* as mysterious. He stated, “Although attentiveness is at the core of presence, there is also a mysterious element—soul” (p. 9). O’Donohue (1999) expressed the mysterious aspect of presence as *soul-atmosphere* (p. 53) and related it to personal experience in the following passage (2015):

One of the sad things today is that so many people are frightened by the wonder of their own presence. They are dying to tie themselves into a system, a role, or to an image, or to a predetermined identity that other people have actually settled on for them. This identity may be totally at variance with the wild energies that are rising inside in their souls.

Many of us get very afraid and we eventually compromise. We settle for something that is safe, rather than engaging the danger and the wildness that is in our own hearts.

Teachers’ comments demonstrated an acute awareness of the energetic environments in which they work. They offered the following insights, which include descriptions of the impact that emotions and their energies exert on themselves and their students.

ELLA: *You’re just kind of like going through the motions and you’re on your way rather than actually being present and open to that energy that you’ve come upon.*

ELLA: *When my energy is high and I'm all in my head and I have this preconceived agenda, they're rank. They're crazy. Like, the energy is just bouncing off the walls...I just think when you're calm and open and you kind of go with the flow of what everything, of course everyone's going to be more engaged and be able to learn better. There's no doubt about it.*

ELLA: *They were noisy, out of hand, you know, disrespectful to each other. It wasn't going well. And I REMEMBER stopping, 'cause normally I would just blurt out, saying, "This is what I'm seeing. This is what we need to do to fix it, blah, blah, blah". All head, right? But I remember stopping and taking a deep breath and asking "How best would this be to handle the situation?" And I was extremely calm, 'cause I remember being amazed at how calm I was. And we just had a lovely conversation, you know "What do you think?" And to be quite honest, I can't even remember what I said...And those moments don't happen a LOT. That would be something I want to evolve, right? To have it all the time and notice it.*

REN: *Your energy can have a really big impact on the classroom. Like, you know if you're coming in tired and exhausted that the kids are going to feed off that and being able to enter to that coherent state and think more clearly can help settle everything down.*

EMMA: *And I think people probably notice in general I'm calmer, but they don't notice that I'm actually going through a process to calm myself down. It's kind of cool 'cause nobody notices, but you notice yourself pulling yourself back into whatever you're doing at the moment. I think they see me as happier and calmer, but yeah, they don't see the behind the scenes stuff. (laughing)*

DECLAN: *If you choose a different perspective, you can see how many layers of protection you've built around yourself and around your ability to feel and your ability to love.*

Declan's insight regarding the *layers of protection you've built around yourself and around your ability to feel and your ability to love* is a wonderful recognition of the emotional "armour" we sometimes envelop ourselves in. Strom (2012) reminded us that, "[t]he more we protect ourselves, the less we are seen; the more we reveal ourselves, the more we touch others" (p. 93). Emma reflected on the *outward* manifestations of an *inward* practice and the shift her colleagues notice in her as she found a new composure in her interactions with them.

As O'Reilly (1998) reflected, "[i]f we are well and truly present, no doubt we will say what students need to hear" (p. 35). Ella provided a powerful example of this presence with her

response to an unruly classroom situation after consulting her heart for guidance: *And we just had a lovely conversation, you know. "What do you think?" And to be quite honest, I can't even remember what I said.*

Worline (as cited in Zakrzewski, 2014) articulated the significance of collective coherence for education: "Just by virtue of your presence and by virtue of changing the conversation with people around you, you will begin to change your school environment." Teachers' attention to their personal well-being through contemplative practices such as heartfulness meditation has consequences for their teaching practice.

Relationships with students.

In our interactions with others, and in the case of teachers, with students, we are constantly in a position to "gather my attention and really be here." This is an act of love. This is an act of loving kindness. (Salzberg, 2016)

Presence, as discussed in the previous section, has important implications for student-teacher relationships. Positive student-teacher relationships have been explored by educational and contemplative researchers alike, and, from both perspectives, has been associated with expressions of love (Hatt, 2005, 2006; Maturana & Varela, 1987; Salzberg, 2016; Zajonc, 2009).

Bai (2001) expressed the "oneness of the perceiver with the perceived, calling on the experience of *interbeing* as the foundation of "empathy, compassion, love and care" (p. 91). This excerpt references Thich Nhat Hahn's contention that "to be is to 'inter-be'" (Nhat Hahn, 1997). The concept of interbeing may also be expressed in terms of relational energetics (Sills, 2006). McCraty, Bradley, and Tomasino's (2004) concept of the heartfield is illustrated in the following passage:

It appears that the heart's field plays an important role in communicating physiological, psychological and social information between individuals"...In short, energetic

communication via the heart field facilitates development of an expanded consciousness in relation to our social world. (p. 17)

In the following quotes, participant teachers reflect on love, empathy, and energy in their relationships with students. They described a notable difference in connection to students when they embodied heartfulness in their interactions.

ROSE: *I think being more deliberately conscious of how I am reacting to others and how I can influence them in the way they're feeling by the way I react...I visualized myself and my own heart and all the things that I had in my life that made ME stronger and then I was able to go out and be stronger for the kids.*

ROSE: *Actually it was with a student that I don't generally enjoy that much - that irritated me (laughing). I deliberately made myself sit back and try to think more generously and more calmly and put myself through those steps (laughing) and then returned and dealt with it. And did much better because I was calmer, I was giving off much more positive vibes and it was a much more positive response than it would have been...I knew it was ME calming down and I just went in and just spoke to him about the issue in a very neutral way and kept it totally unemotional and let HIM respond what HE thought and that totally changed the dynamic in the relationship and it was great.*

AVA: *Well, there's one student that I struggle with quite a bit and most teachers struggle with him. And I guess I just started trying to think about seeing things from his perspective. I'd say our relationship has improved over the year...It offers the space for you to open up to other students that you might have those barriers with. I feel like this deeper heart connection.*

REN: *Recognizing the kids that like, you know, biologically affect me, right? There's a kid that comes in that like, immediately my heart races or whatever...So I'll take a second and do a coherence technique and then go into it as opposed to "Ok I'm going to go into it and hope something works" (laughing)...And then usually the conversation doesn't escalate so it's easier to sort of deal with the kid. I'm not coming into it as primed for conflict. You're going into it primed for conversation...My heart doesn't race as much.*

ELLA: *Then right when I start thinking of love and making those connections, whether it's praying, or whether it's seeing an image or being somewhere that I just feel enveloped by love or joy, that I can feel the shift of lightness...I think you just, you SEE your students better.*

EMMA: *You're able to respond in a really empathetic way 'cause you can kind of sense where they're coming from and what their needs are. Again, it would be more connected to empathy...you get a sense of what's really happening with them...I always think they can sense your energy too, like if you're stressed or flustered, they kind of lose*

themselves too. And then other times, just with kids specifically, like working with one, kids one on one, I do notice that they're able to focus on something when I've kind of reached that coherent state...sometimes they just kind of fall into it too. Which is interesting to think if we all practiced that way and we got really, really good at it, how different our classrooms would be...It's more about what you're feeling and what you're offering to the kids. And how different our students' experiences would be of school on a regular basis. That'd be pretty amazing.

DECLAN: *It's that connection...where you're really taking that internal experience and connecting it with somebody else...It's how you relate to students...It's definitely something that you can play with and manipulate - especially with younger students because they bring in so much random energy that's scattered. It's a flurry of activity that, being able to bring something grounding in and then focus that, channel it into something that's beneficial, that's useful, that's caring can certainly be done. But definitely, with older kids too. And both would be really beneficial.*

Situating this research as an exploration of heartfulness in service of better classroom relationships and environments leads to a consideration of “the social side of emotional experience” (Miller & Leary, 1992, p. 202) which supports the development of SEL in teachers and students in consideration of the relational work inherent in teaching practice.

This research reflects on the possibility that a physiologically grounded heartfelt approach to teaching practice may complement our understanding of Social and Emotional Learning initiatives in education (Davidson, 2008). As Goleman (1995/2006) noted, some teachers may not be comfortable embracing the emotional component inherent in the teaching process. Others *teach with heart* seemingly naturally. Teachers in this study, all experienced mindfulness practitioners, reflected on the differences they noticed as a result of their new focus on heartfulness. Their insights included:

- a new awareness: *being more deliberately conscious of how I am reacting to others (Rose);*
- a new approach to interacting with difficult students: *changed the dynamic in the relationship, and it was great (Rose) and you're going into it primed for conversation*

(Ren); and

- empathy and connection: *You're able to respond in a really empathetic way (Emma); It's that connection...where you're really taking that internal experience and connecting it with somebody else. (Emma)*

Mindfulness practice is incorporated into the SEL curriculum, although I suggest there is more room to focus on heartfulness as its complement in the exploration of compassion and loving kindness.

Classroom climate.

In classrooms and schools, there are fields of interrelationship that, while noncausal and invisible, seem to permeate the context of our interactions. (Fleener, 2002, p. 63)

Emotion, presence, and relational energetics together contribute to the quality of classroom environments. One focus of this study is on the teacher's role in creating positive classroom environments, in particular the ways in which their own states of heartfulness may facilitate positive responses to the difficult situations they face on a daily basis. McCraty and Childre (2010) stated:

A growing body of evidence suggests that an energetic field is formed between individuals in groups through which communication among all the group members occurs simultaneously. In other words, there is a literal group "field" that connects all the members. (p. 20)

Morris (2010) demonstrated that one's state of physiological coherence facilitates increased levels of coherence in others in her presence. This finding forms the foundation for my belief that a teacher's state of well-being may be shared with students through "heart-to-heart biocommunications" (p. 62) and the notion that "we are responsible for what we feed the [energetic] field each day" (Rozman, & Martin, 2015).

Recent research supports the existence of the dynamic emotional landscape enveloping and influencing the relationship between teachers and students. Bache (2008, 2015) described the shared emotional landscape in which teaching and learning occurs as a “living classroom,” referencing the “collective energy at work in the classroom” and the fields that “emerge out of the unified nature of consciousness.”

Taking these observations up in terms of the classroom atmosphere underscores the potent influence a teacher’s presence has on students, beyond what he or she may say or do in a given circumstance. Ren and Declan provided powerful and poignant reflections on their experiences as agents in supporting positivity in the classroom:

REN: *Your energy can have a really big impact on the classroom...When you start to get more into the coherent state, things start to settle and everybody starts to be a little bit more still...I think the classes that get into that state more often tend to be more supportive of each other...when it’s not in that state, there’s...lots of moving round, lots of talking... it’s really dynamic, like everything’s just moving. Whereas when you start to get more into the coherent state, things start to settle and everybody starts to be a little bit more still. That’s probably the best way I can describe it.*

DECLAN: *...feeling the pressure and took a minute to step outside and got into a high coherence state and walked back in and suddenly had an understanding of where these kids were coming from...and you know, the entire class environment shifted. And it was because of that, taking that five minutes to change where I was at so that I could come back in with a refreshed outlook and more control...So many people seem to conceive of themselves as “I am this entity” and don’t think of that reflexivity of “I interact with my surroundings, it interacts with me” and we both end up changed.*

DECLAN: *And you can feel, you feel a difference in the room and in the students as they leave. And often I just linger. Everybody else can leave, and I’ll just stay in the room because there’s a revelling in the joy that was there a moment ago. And it still feels like it’s present in the room.*

These teachers demonstrated that their commitment to heartfulness practice contributed to a change in the way they were able to influence classroom climate, and how the classroom climate was able to influence them. Ren observed that *Your energy can have a really big impact on the classroom* while Declan stated, *I interact with my surroundings, it interacts with me.*

Reflection. Softening and letting go of the body to rest in ease through heartfulness practice can be compared to the consistent, fluid and responsive quality of energy required to perform yoga postures with strength and grace. I liken this notion to the letting go required in contemplative practices—the softening and opening allow the body and mind to expand and generate positivity rather than contracting and remaining in negativity. The experience of opening and softening points to another way of being that facilitates a deeper connection, fostering the development of vulnerability in the teacher. Showing this human side of oneself may serve as a catalyst to encourage students to express their emotional selves in the context of the classroom. As Ella so poignantly expressed it in her interview, *Why is it bad to show emotion, you know?*

Spirituality

In this greater network of all humanity, all life, we are each of us an individual nodal point, each an access point to a larger intelligence. It is this shared connection that gives us our most profound sense of spirituality, making us feel connected, whole. (Pert, 1997, p. 312)

Spirituality is included here as a minor theme. Although other topics were addressed by participants in addition to those chosen as super-ordinate themes according to IPA, spirituality ties directly into the concept of our embodiment, which connects us from the cellular level to the universal (cosmos), a connection linked to the divine (Daugherty, 2014; Gaia, 2017). Embodiment as a connection to the divine has also been expressed by Muehsam and Ventura (2014) who stated, “[t]he physiological correlates of the rhythms of the breath, heartbeat, and brain...have been shown to be intimately related to our emotions, thoughts, and psychospiritual state” (p. 40). O’Donohue (2014) reminded us that we are “at one with the universal energy, which is a spiritual connection.”

An important intersection between first and third person perspectives in terms of

embodiment has been discussed in previous sections of this dissertation. Clarke (2002) noted the importance of “scientists who span the boundary between scientific rationality and spirituality.” She asks the question, pertinent to the interests of teachers in this study, “So where (or why) does spirituality fit in school change?” Rose and Ella reflected on the impact of the opening of the heart they experienced as they participated in the heartfulness workshops. They indicated that connection to the heart naturally led them to spirituality:

ROSE: *I think that it's making me stronger. I think I have more understanding of it. I would like to do more of it. I'd like to get more into meditation and spirituality, the spiritual studies. I think that that's where my interests are right now. So I need to follow that, you know. I'd prefer to see sort of a united concept for spirituality, for the way the body responds to things, and the way the HEART feels.*

ELLA: *My whole life I've been driven by my mind instead of feeling and making that connection. And now, through the years, I'm relating heart to God. So God is from the heart. So if I go to my heart I'm going directly to the divine. I'm still very much in my head. So I see the power of connecting with the heart as kind of even getting closer to God. To the divine, yeah. To me, there's no difference, when we ask our hearts, we're asking God. So, that's my spiritual philosophy.*

ELLA: *I just wish personally, I wish we could talk more spirituality. That's what I wish. I wish all education would go there. We don't have to go with religion...But I still don't want to offend those that may find even talking about a spirit as new age, not good, against our faith...So, to get away from that, then, we can just talk about our hearts. Like, why not? That's part of our human physical makeup.*

Rose and Ella indicated that heartfulness practice opened them to spirituality. It is important to note that this insight emerged outside of their established mindfulness practice, as they began to experience contemplative practice in the context of heartfulness. They noted their embodied connection to the heart and the impact it made on their lived experience. Rose spoke of *a united concept for spirituality, for the way the body responds to things, and the way the HEART feels*; Ella stated, *just talk about our hearts. Like, why not? That's part of our human physical makeup*.

Moules (2015) noted that in terms of the “fusion of horizons” a creative, expansive understanding emerges—“Sometimes it’s the horizon of the topic that changes— sometimes the topic expands.” The shift toward spirituality (through embodiment of heartfulness) in these teacher participants is one example of how this shift may occur.

Reflection

The following two vignettes are included here as examples of the concepts of connection and relational energetics. The first is taken from a lecture given by orchestra conductor Benjamen Zander, who offers insight into the embodiment of “awakened possibility” in others. Vignette 2 is a classroom episode I witnessed when visiting one of the participating schools in this study. It provided me a view into the lived experience of radiance as Zander so passionately advocated for.

Seeking Radiance.

Vignette 1.

Orchestra conductor Benjamen Zander leads an audience through an exploration of classical music in hopes that he will engage in them a new appreciation and understanding of its beauty. “It is one of the characteristics of a leader that he not doubt for one moment the capacity of the people he’s leading to realize whatever he’s dreaming.” Zander’s insight that “the conductor of an orchestra doesn’t make a sound” changed everything for him. He depends for his power on his ability to make other people powerful. He realized that his job was to “awaken possibility in other people.” With a powerful combination of mastery and humour, Zander leads his audience into a moment of wonderment, evident by their shining eyes. “If their eyes are shining, you know you are doing it. If their eyes are not shining, you get to ask a question—Who am I being that my children’s eyes are not shining?” (Zander, 2015)

Vignette 2.

I have been invited to visit a K-12 school and realize that my being here is no accident. I stand outside a classroom on the school’s day in which students choose from a selection of activities they are interested in and, in doing so, act as agents in shaping their own learning experience. Peering through the classroom window, I watch a Grade 5 social

justice class in the throes of debate. The teacher who oversees the action has adopted a persona. She is impersonating a British magistrate and everything about her appearance and performance transforms this classroom into a courtroom. I watch as she deftly orchestrates the debate and I also note the ebb and flow, give and take, and overall excitement in the room. With one strike of the gavel, she concludes the exercise and the students all gather around her, leaning in, hanging on her every word...eyes shining.

I include these vignettes as instances of heart-based teaching and also as illustrations of teachers as *sculptors* of the relational energetics in the classroom environment. In them, I see the possibility of understanding the influence of the heart in generating and sustaining positive relationships between teachers and students. Through a heightened awareness of the heart's intelligence and an intentional practice of heartfulness, teachers may have the power to orient their practice toward the creation of the moments of wonderment and *radiance* that these scenarios convey.

A teacher who practices and develops the ability to access a state of physiological coherence opens up the possibility for sharing a positive emotional relationship with the students in her care, *effectively shaping the social environment in which she and her student(s) coexist*. In Gadamer's (1960/2013) terms, the radiance that manifests in such instances "strikes us with immediate self-evidence as valid. It 'appears' or 'shines' (*scheinen*) as a phenomenon" (p. xvii). Further, connecting the phenomenon of "shining eyes" as an indication of social and emotional connection, is Aronson's (1970) reference to the eye as the "window of the heart" (p. 415). In this we find a connection between the heart's function and the concept of radiance.

In the first vignette Zander (2014) realizes that the evidence that he had "awakened possibilities in other people" lay in their shining eyes (radiance). This idea struck me as profoundly connected to my research. Zander measures success by the number of shining eyes he is surrounded by and leaves us with the challenge to, in his words, "live into" creating such

experiences for learners. “If their eyes are shining, you know you are doing it. If the eyes are not shining, you must ask, ‘*Who am I being that my children’s eyes are not shining?*’ (Zander, 2014).

The teacher in the second vignette exemplifies heart-based pedagogy. She has taken up the challenge to go above and beyond the typical and demonstrates by her actions that she is concerned and devoted to engaging her students in learning. In return, she is rewarded with their rapt attention. She has been successful in creating an atmosphere of love and care in which students are drawn in and held in wonderment. I spoke with several teachers at the K-12 school during my visit there, all engaged in contemplative practice (meditation, mindfulness, and/or yoga). I introduced them to the concept of physiological coherence and the potential it has for helping to manage the stress inherent in their work. I explained that in doing so, they open up the possibility of being more available to connect with students from an open and caring place, thereby creating positive learning environments with individual students (with a view to inspiring radiance), and ultimately contributing to overall positive school climate.

I am interested in moments of radiance, those instances where connection is evident in the shining eyes of the students as they lean in to experience and understand the content being presented to them by a teacher who has created a safe and caring environment for them to engage in and explore without fear of ridicule or rejection. I believe that an awareness of the heart’s ability to help us generate and sustain positive emotion is key to fostering relationships that enhance learning. (*Journal entry, April 16, 2015*)

In this chapter, teachers’ interpretations of super-ordinate themes from first, second, and third person perspectives were presented, followed by a discussion of the intersection between first and third perspectives—which opened the discussion toward the notion of naturalizing

phenomenology. A minor theme of spirituality was also included. Interpretation was then extended to include my own interpretation of themes, remaining close to the insights offered by participants, and including my own experiences (reflections) and ways in which these interpretations may be related to the relevant literature. In Chapter 7, themes are discussed in further detail before the discussion turns to recommendations for further research, implications, and conclusions.

Space between heartbeats
Radiance emerges
Embracing others

Chapter 7: Discussion and Concluding Remarks

The Heart of the Matter

The first thing we have to say respecting what are called new views...is that they are not new, but the very oldest of thoughts is cast into the mold of these new times. (Ralph Waldo Emerson, The Transcendentalist, 1842).

In 2015, the Dalai Lama addressed the Mind and Life Institute's conference on the topic of Perception, Concepts, and Self. In his talk, he noted that *seeing things differently* and finding a new approach may bring an opportunity to our living well together in the world in the 21st century.

In my research over the past years, I have noticed a repeated call for seeing with new eyes. In 1999, Schwartz and Russek (1998) referred to the 21st century as the *Century of the Heart*: they invoked the term *energy cardiology* (p. ix) and called for “a celebration of the mind that can come to know its heart” (p. xiii). Godwin (2001) stated, “the wisdom of the heart must catch up with our overdeveloped ‘thinking heads’ if we are to survive. Wholeness and wholeheartedness are concepts to be achieved all over again” (p. 18). Palmer & Zajonc (2010) referenced Merleau-Ponty's call to “change people's way of living and seeing the world” (p. 96).

Openness to experience is something Davey (2014) noted as the way in which experience “extends itself and revalues itself all the time.” This being-in-motion, or *Dasein*, allows experience to open up new understandings for us. By understanding differently, we are changed. Therefore, we may see things we didn't see before and respond differently. We are entering an era of a new consciousness of the heart, a consciousness that is connected to all that is (Gaia, 2017). Foster (2015) expressed a novel view of connectivity, suggesting that we can consider ourselves to be *living in the movement*:

This moment is the vast field of presence...and holds everything. Since the words ‘moment’ and ‘movement’ come from the same root, it may be better to call this *the present movement*. The present movement of life!...And what is aware of all this movement? What holds, embraces, allows this dance, yet never itself moves?... Awareness itself.

This final chapter is devoted to seeing the contemplative in education with new eyes, specifically examining heartfulness in pedagogy in the context of “teacher as environment.”

The Contemplative Turn in Education

One of the great liabilities of life is that all too many people find themselves living amid a great period of social change and yet they fail to develop the new attitudes, the new mental responses that the new situation demands. They end up sleeping through a revolution. (Martin Luther King, Jr.)

For the past few decades, we have been witnessing a contemplative turn toward an understanding of Eastern wisdom traditions in Western culture (Ergas, 2011, 2017; Eppert, Vokey, Nguyen & Bai, 2015; Smith, 1999). According to Pribram (2013), the Industrial Revolution had a major impact on our relationship with the material world. He noted that our present involvement in the Information Revolution “is changing the very *form*, the patterns of how we navigate that world” (p. 8). There appears to be an accompanying new consciousness developing at the same time, one that is rooted in a general awakening to Eastern worldviews.

There are numerous examples of the ways in which this contemplative turn is being addressed in the fields of education, contemplative studies, and neuroscience. Oren Ergas is a researcher and lecturer in the field of contemplative education. One area of his research is focused on examining yoga and mindfulness practices as they are increasingly being taken up in education. He is also interested in understanding the place of the body at the heart of pedagogy. Ergas (2014) pointed out the fact that mindfulness practice is pervasive as a representative case

of contemplative practice within contemporary Western industrialized countries. However, there are other modes of contemplative practice available for us to explore.

Daugherty (2104a) addressed this issue in her book *From Mindfulness to Heartfulness*, in which she reminded us that mindfulness and heartfulness are “two halves of a transformative and healing whole” (p. 16). Heartful awareness is manifesting in our culture in a new way, due, ironically, in large part to the recent scientific discovery of the measurability of the heart’s rhythms. In a final example, I offer insights from Richard Davidson, a neuroscientist associated with the Mind and Life Institute. Davidson is one of the scientists who participated in the Dalai Lama’s ongoing conversations about science and contemplative practice. He reminded us of the important idea that “a major target of mindfulness practice is on emotion” (2010, p. 8). Davidson’s important contribution, with respect to my research, is that he emphasized the need for more attention and research to be devoted to “the emotional domain of contemplative practices” (p. 11).

Education is consistently evolving as new insights in diverse fields such as psychology, interpersonal biology, and psychophysiology find their way into curriculum discourses. Many scholars and researchers have turned their attention to contemplative practices, exploring the possibility that they may enrich education (Barbezat & Bush, 2014; Palmer & Zajonc, 2010; Schonert-Reichl & Roeser, 2016). Ergas (2017) expressed a possible impetus for this turn, describing it as a “feeling that something far more fundamental is missing from our view” (p. 1). With respect to emotions, sensations, and our *mind-bodies*, he observed, “The ‘education’ we have constructed as a ‘society’ will tend to shape our view so that we see these internal domains as something that is marginal or in fact *interferes* with ‘education.’” (p. 2).

Mindfulness based interventions have typically been the practice most often implemented in school settings, as evidenced by the extensive body of research that has emerged in our recent past. This research was conducted with the intention of expanding our notion of contemplative approaches in education to include heartfulness as a practice in its own right, and to explore the impact such a turn may have on the lived experience of teachers. Although mindfulness leads to heartfulness (Daugherty, 2014a), it is interesting to consider this relationship in its reverse; in other words, what it is that heartfulness practice may bring to mindfulness? Mindfulness and heartfulness, as “two sides of the same coin” may both be considered in the realm of the immeasurables. However, when considered in terms of objective measures, more attention has been devoted to identifying and quantifying the qualities and characteristics of mindfulness.

Naturalizing Phenomenology

As a society we value what we can count. Without qualitative proof that a system or practice offers benefits, it's an uphill battle toward social acceptance. (Simon, 2008, p. x)

The lived body and physiological body are taken into consideration in the move toward naturalizing phenomenology, and both have been explored in relation to my research questions. I open the discussion in this section with an examination of the central theme of this study: embodiment. Gallagher (2005) posed a relevant question: “[t]o what extent, and in what precise way, does one’s body constrain or shape the perceptual field?” (p. 17). In terms of the heart in pedagogy, this research may be able to provide some insight and support for the burgeoning notion of naturalizing phenomenology (Gallagher, 2012; Gallagher & Zahavi, 2013; Varela, 1999).

From the Buddhist perspective, the twofold nature of embodiment is explained in the context of the teaching of the Two Truths, which acknowledges both the personal and the universal as its complementary dimensions (Kornfield, 2009). As Goleman (2008) noted,

“[r]ealizing that the first moment of cognition is nonconceptual and that those thereafter are conceptual offers a gateway, an opportunity for inner liberation, in the Buddhist model” (p. 209). Kabat-Zinn (2014) related the Buddhist notion of awareness as a sixth sense, or non-conceptual knowing that impacts us “before thinking comes in.” I interpret Goleman’s and Kabat-Zinn’s comments to reflect the power of the heart to influence cognition.

Merleau-Ponty, a phenomenologist whose groundbreaking contributions placed an emphasis on the role of the body as our “insertion into the world” (Merleau-Ponty, 1945/2013; Moya, 2014), set the stage for embodiment to be considered indispensable to subsequent examinations of cognition and consciousness. He wrote, “My body is at once phenomenal body and objective body” (Merleau-Ponty, 1964, p. 136). Looking further into the more recent literature regarding embodiment, I encountered current support for the notion of embodiment as simultaneously *physical* as well as *lived*. According to Gallagher (1986), the notion of the physiological body and lived body “retain a fundamental unity: the lived body is physiological and the physiological body is lived” (p. 140).

Varela, Thompson, and Rosch (1993) cited Merleau-Ponty as a seminal influence in the exploration of “science and experience, experience and world” (p. 15). Taking the stance that “experience and scientific understanding are like two legs without which we cannot walk” (p. 14), their perspective led them to turn to Buddhist philosophy as a profound link combining reflection and lived experience with “the more recent ideas of cognition as enaction” (p. 22).

We hold with Merleau-Ponty that Western scientific culture requires that we see our bodies both as physical structures and as lived, experiential structures—in short, as both “outer” and “inner”, biological and phenomenological...For Merleau-Ponty, as for us, embodiment has this double-sense: it encompasses the body as a lived, experiential

structure and the body as the context or milieu of cognitive mechanisms. (pp. xv-xvi)

Robbins & Aydede (2016) also supported the notion of the body as the critical factor in “sensing and acting” (p. 4), referring to perception, thought, and action as co-constituted (p. 4). Varela, Thompson, and Rosch (1993) regarded our inseparability from our world as a circularity that pervades all of our experiences, opening up a “space between self and world, between the inner and outer” (p. 3).

It is important to note the connection between perception, embodiment and our experience of the world, as Varela, Thompson, & Rosch, (1993) observed:

Perception is not a science of the world, it is not even an act, a deliberate taking up of a position; it is the background from which all acts stand out, and is presupposed by them:

The world is not an object such that I have in my possession the law of its making; it is the natural setting of, and field for, all my thought and all my explicit perceptions. (p. 3)

This circularity was evident to me as I was reading transcripts and considering participant responses. Quotes responding to questions concerning embodiment were sometimes ambiguous in the sense that, in some cases, they could be considered to represent both first-person *and* third person views, as demonstrated in the following example:

ROSE: I think being more deliberately conscious of how I am reacting to others and how I can influence them in the way they're feeling by the way I react.

REN: Part of it was being a visual person. And so as soon as it was like “focus on your heart” I could picture it and got a really, like, strong visual connection to it. As opposed to, you know, emptying your mind or whatever, ‘cause then it’s little harder.

Both participants reflected on the physiological aspect of states of coherence, and situated their descriptions within the context of a lived experience; Rose expressed it in terms of relational energetics, while Ren connected to her own experience of visualization.

Responses from study participants indicated that a greater awareness of the heart—its energies, rhythms, and influences—can help us to expand our experience to inhabit more of the “spectrum of innate capabilities” (Kabat-Zinn, 2014) that may be made available to us. As they progressed from the “knowing that” to the “knowing how” in terms of heartfulness practice, they reported shifts in their abilities to generate and sustain states of physiological coherence and an increased capacity to connect with students. In this way, they became aware of the ways in which the physiological and the lived aspects of their bodies are intertwined.

Emotion as Energy

...the psychophysiological raft of experience through which we float along the river of life (Popova, 2017)

Emotions are energy. Ward and Stokes (2018) regarded emotion as *e-motion*, or *energy in motion*, noting that, “[u]nderstanding that emotions are energy implies that they are fluid, moving resources meant to be felt and released vs. suppressed and ignored. The latter is the true culprit of low emotional intelligence and stress burnout.” Popova’s quote introducing this section captured the notion of experience as fluid and embodied. Taken a step further, experience can be said to be dependent on our emotional landscapes from moment to moment:

The range of interactions a living system can have with its environment defines its “cognitive domain.” Emotions are an integral part of this domain... In fact, recent research strongly indicates that there is an emotional coloring to every cognitive act (Capra, 1996, p. 267).

According to researchers at HeartMath (2010), “You see the world through how you feel.” There are many and varied expressions of this concept in the literature (Capra, 1996; Colombetti & Thompson, 2007; Pert, 2008; Todres, 2007). In this sense, emotions can be considered to be bodily experiences that are inseparable from cognition. Cognitive science has

identified this “inseparability of emotion and cognition is an emerging trend” (Colombetti, 2010, p. 26).

Eppert (2010) noted the Western inclination to predominance of attention to reason and cognition over “the life of the emotions” (p. 17). In Buddhist teachings, “sense experiences” and “sense consciousness” are mediated by mental states (including pleasant or unpleasant feeling tone plus unhealthy or healthy states), the impact being that the “same circumstances evoke different perceptions” (Kornfield, 2009). Kornfield identified wisdom, love, and generosity as the roots of healthy states (p. 54). Eastern wisdom embraces The Four Abodes:—*Mettā*, or loving-kindness; *Karunā*, or compassion; *Muditā*, or sympathetic joy; and *Upekkā*, or equanimity—as cornerstones of well-being (Eppert, 2010; Salzberg, 2016). Eppert (2010) explained the benefits of cultivating these qualities.

It is held that over time, the four abodes will begin to govern one’s thoughts and actions easily. Human beings are all capable of such cultivation, because the seeds of the four abodes are inherently within us, connecting us to the stream of goodness and to the world. (p. 21)

Emotion has been studied in the context of Loving Kindness Meditation (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Hutcherson, Seppala, & Gross, 2008). Fredrickson et al. reported that, “In LKM, people cultivate the intention to experience positive emotions during the meditation itself, as well as in their lives more generally” (p. 1046). They went on to conclude, “[w]hen people open their hearts to positive emotions, they seed their own growths in ways that transform them for the better” (p. 1060).

Teachers in this study offered examples of the increased awareness of emotion that accompanied their heartfulness practice, which included LKM as one of its components. In

particular, they noted the emergence of positive emotion, and went on to describe ways in which this new awareness impacted their experiences and relationships “for the better”.

We Are Held in the World

In order to open your heart, you must open yourself to change. To live in the seemingly solid world, dance with it, engage with it, live fully, love fully, but yet know that it is impermanent. Ultimately all forms dissolve and change. (Gaia, 2017)

“Experiencing one’s own energy as the energy of the universe” is a concept supported by an understanding of the universe as *Gaia* (2017). Taking this notion from the energetic perspective to the ontological view, I recognize this statement as a call to be a part of something larger than ourselves. Muehsam and Ventura (2014) related to this perspective as part of a movement toward well being:

As scientists begin to understand the language of health, emotions, and heart rate variability, and begin to decode the language of cellular vibrations and biofield information, it may be possible to develop new forms of healing...such a new paradigm would be capable of unifying a variety of disciplines and revealing the interconnections between the living, world, the social world, and the physical universe. (p. 50)

The heart’s field is generated by “the rhythmic beating patterns of the heart, which change significantly as we experience different emotions...[they] create corresponding changes in the electromagnetic field radiated by the heart” (McCraty, Bradley, and Tomasino, 2004, p. 16). The earth’s magnetic field, a natural electromagnetic spectrum, is referred to as “Schumann resonances” (McCraty, Deyhle, & Childre, 2012; Meusham & Ventura, 2014). The possibility of functional interactions between living creatures and the earth’s magnetic fields has been suggested (Meusham & Ventura, 2014, p. 43). According to Merleau-Ponty:

Every relation with being is simultaneously a taking and a being held, the hold is held, it is inscribed and inscribed in the same being that it takes hold of...It is the simultaneous experience of the holding and the held in all orders. (Stanford, 2015)

Merleau-Ponty's notion of being "held in all orders" is a link to the idea of connecting our embodied rhythms to match universal rhythms, and the ways in which this connection contributes to our sense of well being (McCraty, Bradley, and Tomasino, 2004).

Describing the Ineffable

What I'm describing is intuition, the golden hunch behind all the explanations and theories, which allows you to take advantage of the fluidity of meaning. To intuit is to step outside of language and view it from the air. What's seen when you're flying over language are the ruins of custom and interpretation, mighty edifices made to last millennia. But in fact they're made of straw, built on flowing water. (Domanski, p. 54)

A heartfelt approach to teaching requires recognition that everything is changing all the time—that we live in the flux. As Seidel (2006/2014) mused, "[c]ontemplative teaching moves with time and in space, to the rhythms of life, to what is happening now" (p. 182). Heartfulness, as a concept, presents a challenge when discussed in the context of school systems and classrooms, which are typically understood in terms of predictability and control, templates and statistics. The two live in a tension that arises due to the fact that heartfulness is not bounded by these "certainties," but exists rather in the realm of uncertainty, both with respect to its meaning and the limited scope of language available to discuss it.

In studying this topic, I have encountered ways in which researchers are working to expand the language surrounding heartfulness, which include *cardioplaticity* (Fowler, 2012), *cordiology* (Nager, 1995), and *spiritual cordiology* (Smith, 2012, 2014). As Hart (2009) noted, "Education is preparation to walk into a future not yet determined" (p. 5). Expanding the language regarding heartfulness is a positive step in moving toward the future.

The Heart of the Matter – Third Person (Plural) Perspective

The children are watching. How we adults live and work together provides a lesson. How a school functions insistently teaches. (Sizer & Sizer, 1999, p. 116)

In the first chapter of this dissertation, *The Heart of the Matter* (2005) was introduced as an Alberta Education guideline. This document presented a broad, third person (plural) perspective that takes into account the influence that such aspects as rules, collective behaviours, and social systems may contribute to an understanding of the topic at hand. According to Paulson (2008), these “attributes and systems of the collective” may be considered in terms of “what they do” (p. 175).

When considering heartfulness in education, this third person (plural) perspective is concerned with discussions of school-wide practice and possible implementation of a “heartfulness” curriculum.

DECLAN: There’s just different challenges. The students are learning and are aware that they’re learning. And they’re embedded in a system where they believe they’re learning from their teacher. They don’t always know what they’re learning from their teacher. They think they’re learning curriculum material, while they may be learning how to live and other ideas of how to be in the world.

As Clarke (2002) noted, “teachers and administrators tend to agree that they are engaged in modeling, if not explicitly teaching about values, morals and character.” From a third person (plural) perspective, heartfulness has been linked to character strengths (Linkins, Niemiec, Gillham, & Mayerson, 2015; Niemiec, 2017). Linkins et al. described character strengths (Values in Action) in terms of heartfulness, noting that, “[a]t the micro level, the classification illuminates what is idiosyncratic and unique to the individual human heart” (p. 68).

More recently, Niemiec (2017) referred to character strengths as that which “describes what is best in us,” going on to equate them as a “common language, a consensual

nomenclature” (p. 123). These researchers create a bridge that may serve to include heartfulness in what has been established as a *familiar* conversation in education.

Toward a *human* curriculum.

The rhythm of the curriculum, like the beating of our own hearts, is integral to schools as learning institutions. (Fleener, 2002, p. 175)

Fleener (2002) situated curriculum as “the meaning structure of schooling” (Fleener, 2002, p. 195), which makes it an ideal vehicle for introducing and cultivating heartfulness as an integral component. At present, heartfulness operates implicitly through the hidden curriculum, as Rose was able to express:

When we’re calm, we can pass that on to them because they can read it in us... we can offer that as a way of teaching the children how to manage their day and manage their relationships.

Rose identified an important consideration for implementing heartfulness in curriculum—the primacy of the emotional state of the teacher. Hart (2011) acknowledged the futility of adding curriculum requirements without providing support for “the person at the center of the education experience,” emphasizing that education in the 21st century is facing a significant transition: “attention to the self as an instrument of inquiry and contemplative education.”

Muehsam and Ventura (2014) are aligned with Hart in placing individuals at the center of interest in promoting health and well-being. They advance the concept of a “Science of Humanness” (2014, p. 51) that would “integrate techniques of yoga and meditation and knowledge of the psychosomatics of heart rate variability, and other physiological parameters and incorporate training in the human sensitivity of the practitioner” (p. 50).

Palmer and Zajonc (2010) pointed to possibilities when discussing the future of curriculum and pedagogy. They stated, “[t]he philosophy of education we have advanced here is not a return to the past, but is directed toward the future” (p. 122). They indicated that moving

toward the future involves revising our ontology to include sensitivity to our interconnectedness and taking steps to embrace the contemplative mode of knowing in our epistemology.

In a practical approach, Donsky (2016), advocated for a *human curriculum*, and posed the following question, “[i]s there a need for teachers to look at the human curriculum in addition to the academic curriculum?” He followed up with the suggestion that the following components (framed in terms of an equation) are integral to the process of achieving it: Attention → Awareness → Choice → Intention → Wiser state of Mind → Wiser Action → Better Outcome = The Human Curriculum. Donsky’s vision provides a template for possibility.

The following two sections address the challenges facing the development of heartfulness programs in schools and recommendations based on insights from participant teachers.

Challenges to heartfulness program development in schools.

Teachers are suspicious of innovations, and with good reason. “Year after year new programs are introduced in the schools. To the public each program may signify an educational advance; for the teacher...it is more likely to be a replay of an old tune... a game of educational musical chairs, in which each district hails as new and innovative that which is being discarded as a failure in a neighboring area. (Ginott, 1972)

Teachers in this study were recruited from charter and private schools that demonstrated support for contemplative practice by agreeing to have this research conducted in their schools. One of the participants contributed an unanticipated observation regarding her experience sharing contemplative practice with students: although there was administrative support for the concept of contemplative practice, she felt the need to conceal her attempt to share it with her students. She recounted, *It was just like, sneak it in to just try and get something in there with them* (Ava). Ava’s experience gives us a sense of what is “allowable” in teaching practice and indicates that there is much work to do before contemplative practices, in general, and heartfulness practice, specifically, will find the space to be embraced with ease.

Concerning the challenges to developing programs for contemplative practice in schools, teachers' comments in this study were focused primarily on scepticism of its efficacy as well as anxiety about a perceived increase in workload: *you'd have to get past the people who are, like, 'Oh it's one more thing to do' (Ava)*. Concerns regarding time constraints were also common, as *there's always something happening (Emma)*. They also noted that teachers who are most likely to participate in such a program are those who maintain a personal contemplative practice: *I feel like the people that were there already know about this world a little bit? So I don't know whether that it would be something that you do as all staff (Ava)*.

Recommendations for Heartfulness Program Development in Schools

Teachers' responses demonstrate that they, indeed, see possibilities for the cultivation of heartfulness within the school, and describe ways in which this may be realized. Three recommendations for teaching practice, based on the experiences and feedback from the teacher participants are as follows:

1. Designate quiet spaces in schools for teachers and students alike to practice.
 - *We would need a quiet space for students to sit by themselves. (Rose)*
 - *You know what I think would be perfect? Have a room. This is our heart room (Ella)*
2. Address the "time" issue (lack of) by finding ways to incorporate heartfulness practice in established classes as part of a routine, (such as Career and Life Planning, home room, or health classes).
 - *You need find some way to make it part of a routine (Rose)*
 - *A regular routine in the classroom (Ella)*

3. Devote resources to establish funding, planning, and leadership to support heartfulness initiatives in schools.

- *It doesn't seem impossible, just some funding and planning (Ella)*
- *Workshops are a big way...if every body in a classroom has a chance to try it for a day, then you know, five kids might be like "oh that really worked for me" and then it'll at least slowly build it that way (Ren)*
- *If we made a commitment to try it in homeroom, I think that would work (Emma)*
- *I think starting with those who are interested would be a good way to facilitate...There are some people I just don't think are ready...not prepared for all the things it can bring in. They aren't prepared to love (Declan)*

Recommendations for Further Research

In the spirit of facilitating a larger conversation on the topic of heart-based teaching, recommendations for further research—including examining the lived experience of heartfulness in students, critical contemplative pedagogy, and a curriculum of embodied perception—may provide fruitful lines of inquiry within which to extend the present research. Some of the ideas presently being investigated are included below as possible avenues to explore.

Many quantitative studies have been devoted to academic and social consequences of HRV biofeedback practice with students, with results indicating improvements in academic performance, emotional intelligence, and well-being. However, there remains room to explore the *lived experience* of heartfulness practice in students. Ergas (2017) and Kaufman (2017) suggested a “logical and maybe even necessary fit between contemplative and critical educational practices” based on the “outer-directed” quality of critical pedagogy to support social change. These researchers promote the inclusion of heartfulness within a larger educational

perspective. Nguyen and Larson (2015) recommended a “curriculum of embodied perception” in which “learners create personal and social meaning *with* and *in* the body”(p. 342).

New questions.

The unquestioned confines us to smaller and smaller compartments of ourselves...we have somehow found ourselves in an era where even the brightest, kindest, most idealistic people spring to judgment—which is nothing other than negative wonder—in a heart-flinch. Questions invite instant opinions more often than they invite conversation and contemplation. (Popova, 2018)

One of the benefits of a study such as this is the power it has to open a topic to the possibility of new questions made available as the topic is revealed and expanded upon. One of the benefits of contemplative practice can be said to include a counterpoint to what Popova suggested above: the propensity for negative wonder, embodied by the *heart-flinch*, which she sees as a factor in keeping us less expansive than a state of open-heartedness would support.

We need to be continually posing new questions and revising them in the context of new information. IPA as a method recognizes the flexible nature of research and the opportunity it provides to open a topic in ways that were not initially anticipated. Included below are several new questions that have arisen during the course of this research:

- If mindfulness leads to heartfulness, in what ways does heartfulness lead to spirituality?
- What is the connection between embodiment of heartfulness and spirituality?
- What unites teachers with, and alienates teachers from, engaging in contemplative practice?
- What is it about the current mode of presentation of contemplative practices that attracts some participants while alienating others?
- How may a school culture evolve to support the growth of contemplative practice?
- How might heartfulness be made explicit in the delivery of contemplative practices?
- What changes need to occur before the “human” curriculum is no longer a hidden component in education?

Apparent to me now, having “lost and found” my own questions during the course of this research, is the flexible, adaptable nature of research questions. I can see how these qualities guide a research project to the possibility for new insights in a powerful way. I followed through with the notion of “Teacher as Environment” as a guiding perspective. In the end, I find myself immersed in a research project born out of my own experience, history and interest—qualities that give it meaning for me and (hopefully) for others who are interested in heartfulness.

Implications and Value of the Research

What kinds of stories will lead us to rediscover the mystery and majesty of the pulsations of life—the intelligence behind the force, the information behind the energy, the soul behind the spirit?” (Schwartz & Russek, 1998, p. xii).

The notion that, within contemplative practice, there is a movement from mindfulness to heartfulness has been examined in this dissertation thus far. I have also offered my own recent experience with an MBSR program, in which the course did indeed progress from mindfulness of the body through the body scan meditation to the final meditations, which focused on loving kindness and compassion.

The present exploration of heartfulness may serve to expand our understanding of contemplative practice in education by intentionally exploring the affective component of traditional mindfulness and meditation practices. The stance taken with this research is that, although the heart-mind connection has long been recognized (for example, with the word *hsin*, the Chinese word used to unify mind and body), placing a focus on the heartfulness aspect of contemplative pedagogy is, in itself, innovative and moves the topic forward. Interestingly, during the course of this research, I have noticed a general shift in awareness toward heartfulness, a consciousness that was not as evident in the literature and popular culture as it is today.

Furthermore, there is a tendency to alienate some people with the notion of heartfulness since, for some, it invokes *spirituality* (which emerged as a minor theme in this study). Part of the value of interpretive studies, especially ones of a *spiritual* nature, is in the shift that they represent in academia. In order to bring the human spirit into the process of academic knowledge generation, we need to take the risk of exploring new research methodologies.

We need to be able to speak about lived experiences and to give individual experience and stories credibility as a source for advancing human knowledge and understanding; we need to encourage a rich, unreduced, and complex view of human experience. In particular, we need to stop denying the importance of our emotions in dealing with the complicated issues we face today, especially in light of the role heartfulness can play in supporting teachers as they navigate the challenges they face interpersonally, and also within the broader school community. Also, we need to take the risk of exploring new research methodologies. Only by doing more of these kinds of studies will we be able to learn to do them well. In this way, we can learn to open academia to the potentials not yet realized by conventional research methods and topics.

Concluding Remarks

In this passage toward an integration of objective knowledge and subjective knowing lies a route toward bridging the boundary between Science and Art, the natural integration of Science with the Humanities, as a Science of Humanness. (Muesham & Ventura, 2014, p.51)

A “Science of Humanness” (Muesham & Ventura, 2014, p. 51) may serve to link concepts such as heartfulness to natural science and lived experiences. It may also provide an opportunity to open an academic inquiry into heartfulness in a way that makes it accessible for examination within an interdisciplinary approach. One strength of this study is the possibility it provides to narrow the gap between science and interpretive work. According to Midgley

(2001), science does not forbid us to be human. Grounding this study in academic literature is already an important contribution.

The present research may contribute to a deeper understanding of Social and Emotional Learning (SEL) initiatives in education. Although good intention accompanies phrases such as *teach with heart* or *be heartfully aware*, these abstract concepts fall short of the “how to” that may support a different understanding of the terms. Heart Rhythm Variability (HRV) biofeedback (McCraty & Rees, 2009) offers a practical way to embody heartfulness. Connecting the topic of heart in pedagogy to its physiological, social and emotional, and contemplative roots may offer new insights into heartfulness in teaching practice. This research supports the development of teachers’ abilities to engage in a new and powerful connection with students and explores how the heart comes to mean something in the classroom. Supporting teachers’ well-being is one way to improve career satisfaction and longevity and to contribute to building healthy communities. The interpretive, phenomenological approach drawn upon for this study includes and goes beyond the natural science perspective, and returns the question of the role of the heart in well-being to its roots in lived experience, opening the possibility for *living in the movement*.

Epilogue

*I would love to live like a river flows, carried by the surprise of its own unfolding.
(John O'Donohue)*

Closing thoughts in this study return me to Saraswati, the river and the goddess, which was introduced in the prologue to this dissertation. Saraswati has been taken to mean “having many pools,” and the goddess is “nearly always depicted as sitting on the banks of a flowing river” (Holloway, 2014). These descriptions reflect the interdisciplinary and fluid nature of the investigation undertaken in this research. Gadamer noted that a topic is “always already” going on, much like the interest in the Saraswati River, which many believe is not dried up, but can be found deep underground, if one chooses to look. My research journey into heartfulness reflects the story of the underground river, as the awareness of heartfulness is gaining in our collective consciousness, effectively rising in our awareness and co-arising with mindfulness. Artists have typically been noted as those who are able to express the ineffable with their work, taking their sensitivity to cultural shifts to new levels of awareness with their work and words. Just as a renewed interest in the mythical Saraswati River is gaining popularity, the apparent new awareness of heartfulness is evident in our present-day culture at this point in time.

Heartfulness Manifested in Popular Culture

Part of awakening the dark is engaging in conversations with each other. I have deliberately pulled in writings from fields other than education because there is a movement afoot, so to speak, a synergy of our times, that is propelling us beyond our modernist heritage and fragmented approaches to inquiry. (Fleener, 2002, p. 194)

My personal connection to my topic has enriched my appreciation of its impact beyond the scope I had originally intended. In 2016, I attended a panel discussion held during *The Art of Stillness*, a conference that took place in western Canada. I was drawn to attend because one of the presenters was Richard Reed Parry, the musician who created *Music for Heart and Breath*,

the innovative composition mentioned in the prologue to this dissertation. In step with Fleener's observation of the "movement afoot" toward unison rather than fragmentation, I offer the following expressions of heartfulness by artists as examples of a renewed cultural interest in heartfulness.

Parry's language in discussing his work included phrases such as *paying attention to what's there underneath things*, and *paying attention to things that we typically ignore (using a different lens)*—comments that I felt a direct connection to in relation to my exploration of heartfulness. Parry went on to discuss *ways of being, or inhabiting the experience*, which I immediately connected to the experience of dropping into the heart. Parry ended by noting that *embodying 'the thing' IS the thing*. I was struck by the realization that the language that had been with me on my exploration of heartfulness was manifesting in the realm of the arts.

Diane Borsato is another artist who participated in the panel discussion at the conference. She took the opportunity to discuss one of her installations titled *Your Temper/My Weather*. Borsato, a beekeeper, noted the comportment required, and the immediacy of the interaction between beekeepers, bees, and their reciprocal level of calm (Borsato, 2013a). She gathered one hundred beekeepers for an extended period of time, and had them collectively practice their "skilled focus, attentiveness, and calm" in a shared exhibition space over an extended period of time to see what they "might produce in the bigger scale in the museum, in the audience, in the city, in the world" (Borsato, 2013b).

Once again, I sat riveted by her language as she discussed her project and the motivation behind it. In contextualizing her work, Borsato referred to the *reciprocity of empathetic, energetic temperament*. She spoke about *a special kind of calm, based on care* and the ethical implications of the ways that *feeling is deeply bound up with caring*. I was reminded of Ginott's

(1972) observation that teachers create a climate in the classroom—that their daily mood makes the weather.

Christopher House, Artistic Director of the Toronto Dance Theatre, also participated in the panel discussion. His comments provided another intersection with the themes I have been following in the exploration of heartfulness, mediation, and embodiment. House's comments centered on the primacy of embodiment in accessing a connection with the world. First, he noted that *stillness leads to increased attention to sensation and access to senses*. He then commented on the *joy that emerges through accessing the senses*, a perspective that participant teachers were able to articulate when discussing their experiences of embodying positive emotion. House went on to discuss how *sensual awareness enriches your dialogue with the world* and how *seeing yourself in the shared space with others allows you to recognize yourself in a new way*. I easily connected these comments with the Dalai Lama's call to *see things differently* and find a new approach in the 21st Century, noted in the introduction to the final chapter of this dissertation.

As a final example, artists Pablo Gonzalez Vargas and Gabriella Vargas featured ILUMINA (2017) at Burning Man, an annual gathering held in the western United States. These artists created a 40-foot-tall interactive sculpture that was responsive to the input of participants who were connected to an emWave Pro (one of HeartMath's HRV biofeedback sensors, also utilized in this study). As participants' heart rhythms became synchronized, greater collective coherence was generated, and the brighter the sculpture's lightshow and soundscape became. ILUMINA is a powerful experiential demonstration of how the biofield may interact with the biosphere and enhance possibilities to increase our global interconnectivity.

*A heart awakens
Beacon anchoring a storm
Possibility*

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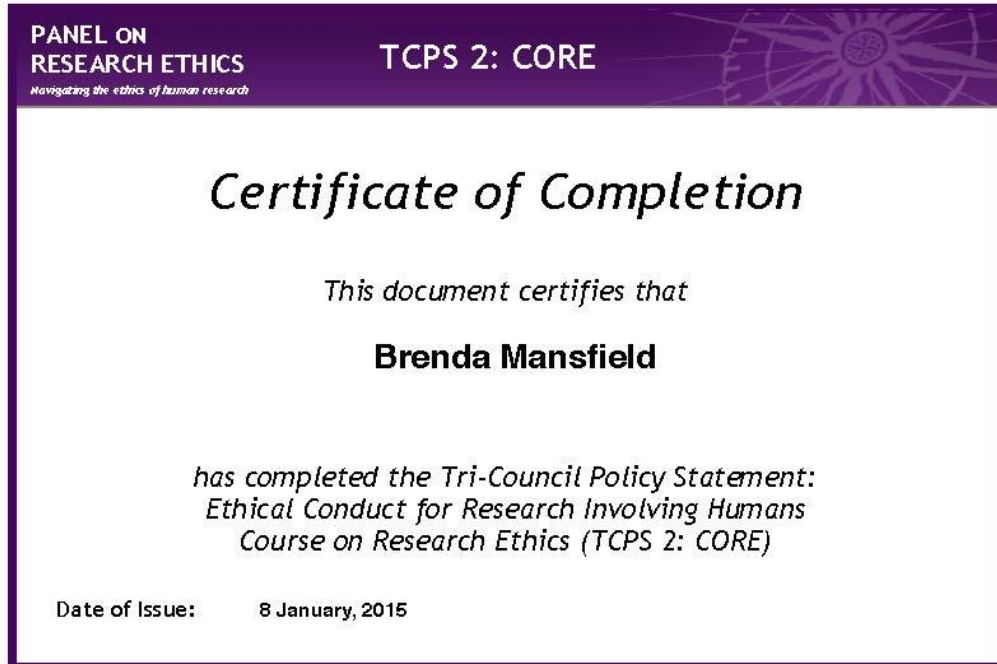
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Appendix A

CFREB Certificate



Appendix B

Letter of Invitation

April 2016

Dear

Over the past year, you have participated in the heartfelt awareness workshops that I have conducted at your school. Because of the heartfulness practice and experience you have developed during this time, I am writing to invite you to participate in a University of Calgary, Werklund School of Education research study entitled:

Teacher as Environment: The Embodiment of Heartfulness in Teaching Practice

The researcher requests your permission to include recorded interview data about your experience of heartfulness in teaching practice. This research will be presented at academic conference(s) and published in academic peer-reviewed journal(s) and may inform future studies.

This research will assist us in understanding how specific teacher practices and play activities in post-secondary education can raise historical consciousness and engage students in dialogue about historical events and people(s) in online courses. It will expand our knowledge of how students understand and situate contemporary ideas about the role of imaginary play and narrative in early childhood education with relative historical beliefs and pedagogical practices.

Your participation in this study is completely voluntary. The researchers are asking permission to use the following types data:

1. contents of interviews regarding heartfulness in teaching practice
2. artifacts that may be generated during the course of the study (such as journal entries, drawings, paintings, poetry, narrative, digital interpretations of 'heartfulness')

In the future, presentation of the information you provided will remain anonymous. The pertinent secondary data will be downloaded and stored at the principal researcher's home in a secured and locked filing cabinet, and/or in password-protected electronic form on a computer for a five year period. Only Dr. Panayotidis and Brenda Mansfield will have access to the data now and in the future. No one except the researchers will have access to any of the recorded interviews.

Your input in this study will be extremely valuable. You were invited as a possible participant in this research project because of your involvement and experience in the ‘heartfulness’ workshops conducted by the researcher during Fall 2015 and winter 2016 at your school. I hope you will consider contributing and furthering understandings about ‘heart in pedagogy.’

Thank you for signing the attached research consent form and returning a scanned copy to me by April 15, 2016. If you have any questions, please feel free to contact me at (403) 389-8048 or at bemansfi@ucalgary.ca.

Thank you,

Brenda Mansfield
PhD Student,
Werklund School of Education, Curriculum and Learning
University of Calgary
bemansfi@ucalgary.ca
(403) 389-8048

This study has been approved by the University of Calgary Conjoint Faculties Research Ethics Board. If you have any concerns about the way you’ve been treated as a participant, please contact the Research Services Office, University of Calgary at (403) 210-9863; Email: cfreb@ucalgary.ca

Appendix C

Letter of Consent



TITLE: Teacher as Environment: The Embodiment of Heartfulness in Teaching Practice

INVESTIGATORS:

Dr. E. Lisa Panayotidis, Werklund School of Education, Graduate Programs in Education,
403-220-6296, elpanayo@ucalgary.ca

Brenda Mansfield, Werklund School of Education, Graduate Programs in Education, Curriculum
and Learning 403-389-8048, bemansfi@ucalgary.ca

This consent form is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, please ask. Take the time to read this carefully and to understand any accompanying information. You will receive a copy of this form.

WHAT IS THE PURPOSE OF THE STUDY?

A ‘heartfulness’ approach in education complements the current practice of ‘mindfulness’, which has been incorporated into various curriculums as a component of Social and Emotional Learning (SEL) initiatives. ‘Heart in pedagogy’ has typically been taken up metaphorically in educational scholarship. With this research, I propose to highlight the possibility that connecting the topic of ‘heart in pedagogy’ to its physiological, social and emotional, and contemplative roots may offer new insights into heartfulness in teaching practice.

Many quantitative studies document the gains in social competencies and well-being that are the result of connecting to the power of the heart to generate and sustain positive emotion. In the proposed study, interested teachers will be introduced to ‘heartfulness’ through participation in a series of workshops that present ‘heartfulness’ in the context of contemplative practices such as loving-kindness, appreciation, and compassion meditations. In addition, a heart-based, biofeedback, stress-management program (Institute of HeartMath) will be implemented to help teachers learn to deliberately shift into positive emotional states such as love, appreciation, and compassion.

Researchers at the Institute of HeartMath have demonstrated that positive emotions are reflected in a particular harmonious pattern of Heart Rate Variability, and the associated physiological response is referred to as *heart rhythm (or physiological) coherence*. The data support the claim that a state of

physiological coherence facilitates cognitive function and optimal performance. A contemporary appreciation of the heart's intelligence has been achieved through the natural sciences, however the interpretive approaches proposed for this research go beyond the natural science perspective and return the question of the role of the heart to its roots in lived experience.

WHAT WOULD I HAVE TO DO?

You will be asked to engage in a heartfulness practice, including heartfulness meditation and HeartMath biofeedback training, using HeartMath's emWavePro or Inner Balance program, for a period of two months. You are invited to keep a journal of your experiences if you wish, or you may choose to express your experience through artwork such as visual art, music, poetry, or narrative. These activities are optional. At the end of the two month period, you will be invited to participate in an interview to discuss your experience with heartfulness in teaching practice. The interview will take approximately one hour. You may also be invited to participate in a focus group before or after the interviews take place. Interviews and focus groups will be conducted in private settings convenient to participants. Your participation in the study will be discontinued on completion of your interview and/or focus group discussion.

Your participation in this study is completely voluntary. The researchers are asking permission to use the following types of data:

1. Recorded interview conversations as transcribed and interpreted by the researcher.
2. Supplementary visuals, artifacts, journals and other resources generated by the participant (optional).

WHAT TYPE OF PERSONAL INFORMATION WILL BE COLLECTED?

All personal identifying information will be removed from the interview data in this study, and all participants shall remain anonymous. No schools or programs will be identified in the research study.

If you decide to take part in this research you can choose a pseudonym for yourself:

My pseudonym is: _____

WHAT ARE THE RISKS?

There are no foreseeable risks, harms, or inconveniences to the participants in this study.

WILL I BENEFIT IF I TAKE PART?

If you agree to participate in this study there may or may not be a direct benefit to you. If you are in the study because you are interested in heartfulness, you may discover a new understanding of

heartfulness through the practices you engage in during the research, however there is no guarantee that will be the outcome. The information we get from this study may help us gain a broader understanding of the lived experience of heartfulness in teaching practice.

DO I HAVE TO PARTICIPATE?

Please note that the CFREB does not require that researchers withdraw/destroy partial data in cases of participant withdrawal, provided that it is made clear on the informed consent form that data collected to the point of withdrawal will be retained/used.

Participation in this study is voluntary. A statement will be written on the consent form informing participants that they may withdraw from the study, for any reason, at any time during the study. Participants may withdraw by contacting the researcher verbally or in written form. If you choose to withdraw from the study, you will be asked if the data you have provided to that point may be used. If they choose that the data cannot be used, then you will it will be promptly destroyed.

Should any participant choose to withdraw, they will be invited to share any concerns they have. Dr. Panayotidis and I will be available to discuss any or all aspects of this research with them at any point during the study.

WILL I BE PAID FOR PARTICIPATING, OR DO I HAVE TO PAY FOR ANYTHING?

You will not be paid for your participation in this research and you will not have to pay for anything.

WILL MY RECORDS BE KEPT PRIVATE?

Participation is completely voluntary, anonymous and confidential.

You are been asked to give your consent before any interviews are conducted. In the future, presentation of the information you provided will remain strictly anonymous. The recorded interview data will be stored at Brenda Mansfield's home, in a secured and locked filing cabinet, and/or in password-protected electronic form on a computer for a five year period, at which time, it will be permanently erased.

Only Dr. Panayotidis and Brenda Mansfield will have access to the raw data now and in the future. No one except the researchers will be allowed to read any of the interview transcripts.

SIGNATURES

Your signature on this form indicates that you have understood to your satisfaction the information regarding your participation in the research project and agree to participate as a participant. In no way does this waive your legal rights nor release the investigators or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time without jeopardizing your health care. If you have further questions concerning matters related to this research, please contact:

Dr. E. Lisa Panayotidis (403) 220-6296

Or

Brenda Mansfield (403) 389-8048

If you have any questions concerning your rights as a possible participant in this research, please contact the Chair, Conjoint Health Research Ethics Board, University of Calgary at 403-220-7990.

Participant's Name

Signature and Date

Investigator/Delegate's Name

Signature and Date

Witness' Name

Signature and Date

The University of Calgary Conjoint Health Research Ethics Board has approved this research study. A signed copy of this consent form has been given to you to keep for your records and reference.

Appendix D

HeartMath Tools

EmWave Pro



Inner Balance for iPad/iPhone



Ear Sensor



<http://www.heartmath.org>

Heart Rate Variability is monitored via an earlobe plethysmographic sensor to detect the pulse wave. The emWave Pro software system and Inner Balance programs, which plot the changes in heart rate on a beat-to-beat basis, reveals the heart rhythm pattern in real time.

Quick Coherence Technique (QCT):

(<https://www.heartmath.org/resources/heartmath-tools/quick-coherence-technique-for-adults/>)

1. Focus your attention on the area around your heart, the area in the center of your chest.
2. Breathe deeply but normally and feel as if your breath is coming in and going out through your heart area. Continue breathing with ease until you find a natural inner rhythm that feels good to you.
3. As you maintain your heart focus and heart breathing, activate a positive feeling. One of the easiest ways to generate a positive, heart-based feeling is to think of people or things you appreciate in your life, remember a special place you've been to, or the love you feel for a close friend, family member or treasured pet. This is the most important step.

The heart rhythm you generate while experiencing this positive emotion helps you create a coherent state, offering access to the heart's intelligence.

Appendix E

Heartfulness Meditations

Loving Kindness Meditation (LKM)

Fredrickson et al. (2008) describe LKM as “a technique to increase feelings of warmth and caring for self and others” (p. 1046). It involves the extension of warm and tender-hearted feelings toward oneself first, then to a loved one, and then to “an every-widening circle of others” (p. 1046). Following is a guideline for the practice, offered by The Centre for Contemplative Mind in Society (2015):

Breathing in and out from the heart center, begin by generating this kind feeling toward yourself. Feel any areas of mental blockage or numbness, self-judgment, self-hatred. Then drop beneath that to the place where we care for ourselves, where we want strength and health and safety for ourselves. Continuing to breathe in and out, use either these traditional phrases or ones you choose yourself. Say or think them several times.

- *May I be free from inner and outer harm and danger.*
- *May I be safe and protected.*
- *May I be free of mental suffering or distress.*
- *May I be happy.*
- *May I be free of physical pain and suffering.*
- *May I be healthy and strong.*
- *May I be able to live in this world happily, peacefully, joyfully, with ease.*

Heartfully Engaged Awareness Programming Tools (HEART)

Daugherty (2014) suggested the following tools as ways to intentionally “engage in experiential ways of being” (p. 156) that provide options for dealing with moment-to-moment experiences in a heartfelt way (e.g., encountering experiences with an increased ability to assess the appropriate reactions, rather than falling into established, and potentially harmful, habits of reactivity. A short description of the HEART tools follows:

- 1. Notice:** (Mindful Awareness). *Take time to pause and reflect on instances of reactivity (anger, frustration, or a general sense of unease, for example), paying attention to mental, physical and emotional cues that accompany them.*
- 2. Refocus:** *Breath slowly and comfortably. Attempt to release tension in the body while trying to create a ‘felt sense’ of openness.*
- 3. Nurture:** (Heartful Awareness). *Intentionally shift to a genuine feeling of love, appreciation or compassion in order to access a state of calm and connection.*

Heart-Mind Lesson Plans

Following is a description of lesson plans are taken as examples from the Dalai Lama Center's HeartMind Lesson Plans (HeartMind, 2014):

1. **Capturing Kindness:** *“What does Kindness look like? If you were to take a photograph to somehow capture or represent kindness, what would be in your picture?” Brainstorm and discuss responses*
2. **What is Gratitude?:** *Students are asked to think critically, make meaningful, personal connections and engage with others to share and develop ideas about gratitude)*

The Loving Benefactor Meditation

<http://www.shiftyourlife.com/2012/shift-into-heart-to-de-stress-with-quick-coherence-techniques/>

This meditation is great for getting into your heart in about 30 seconds or less:

1. Find a comfortable, seated position on a chair or cushion and allow your body to settle into position.
2. Close your eyes and begin to focus your attention on your breath, following your cycles of inhalation and exhalation.
3. Notice the rising and falling sensations in your belly as you breathe in and out and follow this for a few cycles.
4. Now try to bring to mind a heartfelt sense or visual image of someone whom you believe embodies the qualities of unconditional love and compassion. This person can be a friend or relative, a religious or historical figure, a spiritual being or just someone who embodies these qualities.
5. Picture this person as if they were sitting or standing right in front of you. Look into their eyes and feel the absolute unconditional love and compassion flowing from them towards you.
6. Now, radiate feelings of love and gratitude back towards this person. Whenever you feel your mind wandering, gently bring your attention back to the image of the loving friend, historical or spiritual image and once again practice radiating love, empathy and compassion towards them.
7. Feel their love, empathy and compassion radiating back towards you.

You can choose to stay with your Loving Benefactor and feel their love flowing to you and your love flowing to them for up to 20 minutes. You can also have your Loving Benefactor move slowly around your left side and stand behind your left shoulder to be with you as you go about your day. You can still feel them present when you open your eyes! Know that this Loving Benefactor is sending you love every minute of every day.

Appendix F

Heartfulness Workshops

September 30, 2015

FIVE DOMAINS OF HEART-MIND WELL-BEING



<http://dalailamacenter.org/programs/heart-mind-index>

GETS ALONG WITH OTHERS - the ability to form positive and healthy relationships with peers and adults.

COMPASSIONATE AND KIND - the ability to be aware of other people's emotions and a desire to help when a person is in need.

SOLVES PROBLEMS PEACEFULLY - the ability to behave in a peaceful and respectful way in a variety of situations and relationships.

SECURE AND CALM - the ability to take part in daily activities and approach new situations without being overwhelmed with worries, sadness or anxiety.

ALERT AND ENGAGED - the ability to stay calm, focused and alert; to demonstrate self-control and to slow down and think before acting.

Daugherty, A. (2014a). *From mindfulness to heartfulness: A journey of transformation through the science of embodiment*. Bloomington IN: Balboa Press.

Daugherty (2014a) “Heartful awareness promotes love, peace and compassion beyond cognitive understanding. It is an embodied presence we bring to the world, and the world is changed because of it. It is trainable through active and intentional engagement...” (p. 271).

“Authentic moments” – of positive emotion. Our bodies, and their adaptations, know the truth. We cannot convince ourselves to feel something that we truly do not. Our subconscious mind knows the truth. *But we can invite into our awareness those things that carry a true sense of heartfulness for us*” (p. 134).

“momentary shifts of heartful awareness, and their great cumulative effect....create a new baseline way of being in the world” (p. 136).

“Heartful awareness promotes love, peace and compassion beyond cognitive understanding. It is an embodied presence we bring to the world, and the world is changed because of it. It is trainable through active and intentional engagement...” (p. 271).

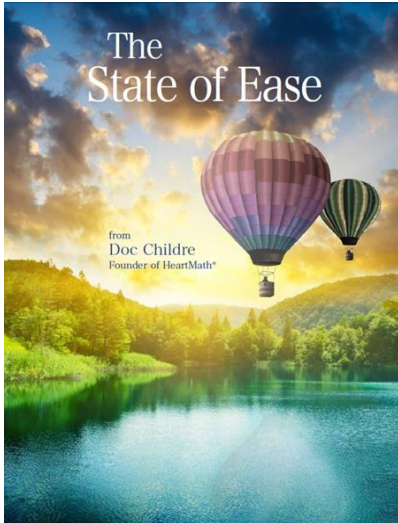
Hofmann, S. G., Grossman, P., & Hinton, D. E. (2011). Loving-kindness and compassion meditation: Potential for psychological interventions. *Clinical Psychology Review, 31*(7), 1126–1132. doi:10.1016/j.cpr.2011.07.003

Mindfulness-based meditation interventions have become increasingly popular in contemporary psychology. Other closely related meditation practices include loving-kindness meditation (LKM) and compassion meditation (CM), exercises oriented toward enhancing unconditional, positive emotional states of kindness and compassion. This article provides a review of the background, the techniques, and the empirical contemporary literature of LKM and CM. The literature suggests that LKM and CM are associated with an increase in positive affect and a decrease in negative affect. Preliminary findings from neuroendocrine studies indicate that CM may reduce stress-induced subjective distress and immune response. Neuroimaging studies suggest that LKM and CM may enhance activation of brain areas that are involved in emotional processing and empathy. Finally, preliminary intervention studies support application of these strategies in clinical populations. It is concluded that, when combined with empirically supported treatments, such as cognitive-behavioral therapy, LKM and CM may provide potentially useful strategies for targeting a variety of different psychological problems that involve interpersonal processes, such as depression, social anxiety, marital conflict, anger, and coping with the strains of long-term caregiving.

Heart-Mind. (2014). *Heart-mind lesson plans*. Dalai Lama Center for Peace and Education. Retrieved from <http://www.heartmindonline.org/resources>

October 7, 2015

HeartMath - The Ease Tool:



<http://www.heartmath.com/blog/articles/the-power-of-emotions/>

HeartMath emWave Desktop program : The emWave Library

Click on Book icon, top right hand corner to access information about the science of the heart and heart science videos

Loving Kindness Meditation



<https://www.youtube.com/watch?v=UIW0VHupTFI>

October 14, 2015

Today we focused on compassion as a positive emotion that connects us to a coherent heart rhythm.

John Kabat-Zinn (founder of MBSR - Mindfulness Based Stress Reduction):

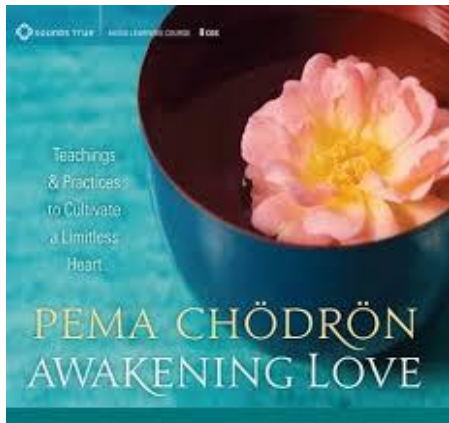
Kabat-Zinn (2015) offers the following definition:

Compassion is the core universal emotion. It is already here. There is nothing to get, no place to go. There's nothing to do and there is nothing special to attain. What realizing it means is making it real. And how do we make it real? By being present and trusting that the knowing is itself inherently compassionate. The spaciousness of pure awareness is compassion.

HeartMath - Instinct for Compassion

<https://www.heartmath.org/articles-of-the-heart/social-connections/instinct-for-compassion/>

Pema Chodron - Tonglen Practice



<https://www.youtube.com/watch?v=QwqlurCvXuM>

We also talked about Resilience and how a positive emotion such as compassion contributes to "recharging our batteries"

October 29, 2015

INSTITUTE OF HEARTMATH
Connecting Hearts and Minds

The Freeze Frame® Technique

Freeze Frame is a multipurpose technique for stopping energy drains and gaining clarity.

It's especially helpful when you have to make a quick decision or when out-of-the-box solutions are needed.


Shifting your physiology into a coherent state improves your mental functions and helps you access your intuitive intelligence.

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INSTITUTE OF HEARTMATH
Connecting Hearts and Minds

Freeze Frame® Exercise

- Step 1: Identify
- Step 2: Heart-Focused Breathing
- Step 3: Activate
- Step 4: Ask
- Step 5: Observe



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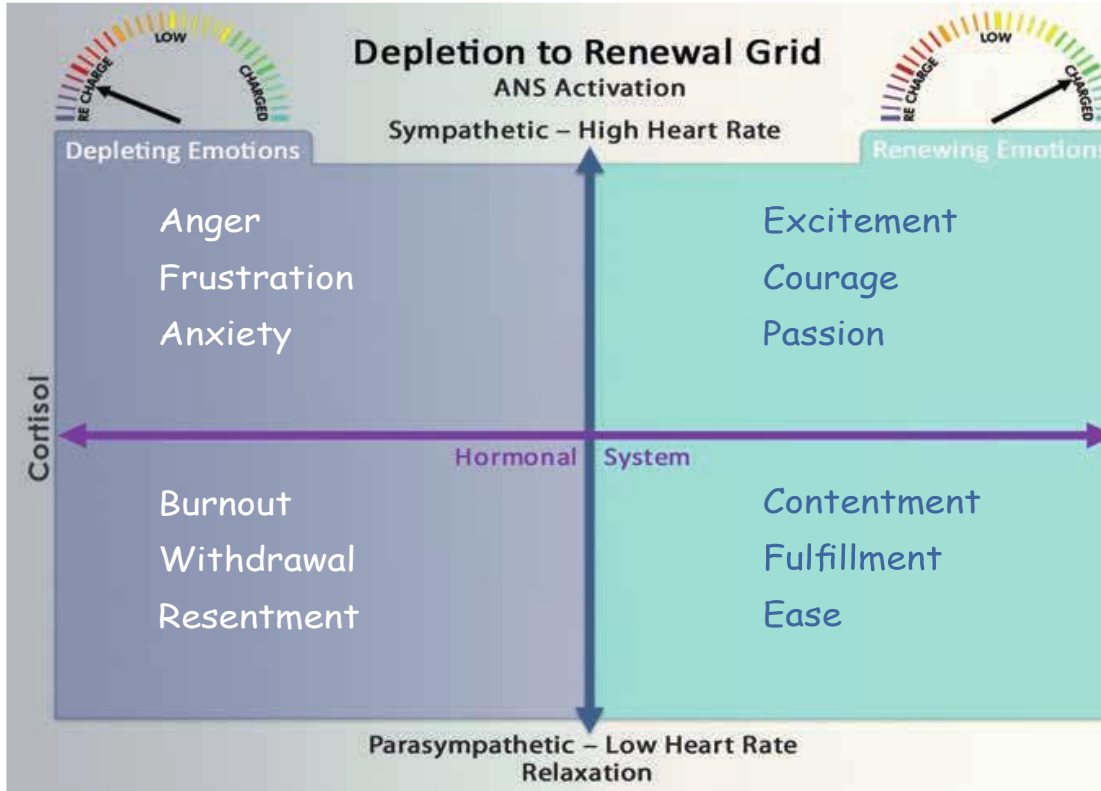
Melody Beattie

Journey to the Heart: Daily Meditations on the Path to Freeing Your Soul, Trust Your Heart (p. 5)

Elena Brower


Every time you take care of yourself, you're taking care of all of us ~ Elena Brower

January 13, 2016



Action Plan

Look at the Grid. Ask yourself which quadrant are you in right now? Where were you yesterday? Notice that some of the time you may be in one quadrant, and during other times in a different one. Now think about or notice which quadrant you spend most of your time in.

	<p><i>A supportive document to help you identify and differentiate emotions.</i></p> <p>http://thework.com/sites/thework/downloads/worksheets/Emotions_List_Ltr.pdf</p>
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Appendix G

Sample Interview Questions

1. What does heartfulness mean to you?
2. Can you describe your experience with heartfulness?
3. How do you recognize when you are in the midst of heartfulness when you are in your teaching practice?
4. Can you describe circumstances when you have intentionally evoked heartfulness in your relationships with students?
5. How do you sustain it?
6. What impact does heartfulness have on teaching and learning? How do you recognize this impact?
7. What was your past experience with Mindfulness and/or Mindfulness based practices, before participating in the Heartfulness Awareness program at your school?
9. Did your experience with Heartfulness practice influence your understanding of Mindfulness and/or Mindfulness based practices? If so, how?
10. Did you introduce any of the information you learned in the Heartful Awareness program to your students? If so, how would you describe that experience?
11. Can you describe your experience with using the HeartMath biofeedback program and stress reduction tools?
12. How important was the HeartMath program in relation to the body of Heartful Awareness information that was offered in the program?
13. Can you describe any impact Heartfulness practice may have had on other areas of your life?
14. Did you find the Heartfulness practice helpful in any way?
15. Would you like to share anything else about your experience with Heartfulness practice?

Appendix I

List of all emergent themes

Table 3

List of all emergent themes

Practice	Heartfulness	Social and Emotional Learning	Mind
Motivation for practice	Effect of heartfulness on understanding mindfulness	Care	Emergency
Biofeedback practice		Self care	Growth
Heartfulness practice	Understanding mindfulness and heartfulness	Emotion regulation	Triage
Energetic heart	Meaning of heartfulness	Connection	Soothing
Challenges to practice	Heartful awareness	Relationship	Experience of hand on heart
Extending practice	Awareness	Relationship with students	“Whoosh” metaphor
Student perception of practice	Understanding heartfulness	Relationship with peers	Way of living
Competition	Effect of heartfulness on understanding mindfulness	Relational energetics	“Speed bump” metaphor
Addiction		Experience as a group member	“Sailing” metaphor
Notes on practice	Heartful awareness	Relational energetics	Relaxation
Sneaking practice into curriculum	Heartfulness in students	Collective coherence	Belief
Experiments with different situations	Mindfulness	Classroom climate	Letting go
Heartfulness practice with students	Previous experience with mindfulness	Stress management	Presence
			Lightness

Practice (cont.)	Mindfulness (cont.)	Social and Emotional Learning (cont.)	Visualization
Value of Heartfulness practice with students	Mindfulness practice discontinued	Coping	Intuition
Student perception of heartfulness practice	Mindfulness practice with students	Resilience	Movement
Heartfulness workshops	Meditation	Embodiment	Habit
Goal setting	Breath	Benefits of coherence	Listening
Difficulty retaining information	Heart-based teaching	“Wave” metaphor	Measurability Music
Heartfulness practice (notes)	Hidden curriculum	“Force” metaphor	Focus group
Impact of Heartfulness practice	School context	Spirituality	
Heartfulness as a daily life practice	School crisis	Religion	
	Time		
	Spaciousness		
	Openness		

Appendix J

Frequency of Themes and Emergent Themes (Clustered)

Table 4

Frequency of Themes and Emergent Themes (Clustered)

1. Theme and Frequency	F	2. Emergent Themes (Clustered)	F
Previous experience with mindfulness	3	Mindfulness	10
Mindfulness practice discontinued	3	Previous experience with mindfulness Mindfulness practice discontinued Mindfulness practice with students Meditation	
Motivation	4	Social and Emotional Learning	42
Care	2	Care Self care Emotion regulation Connection Relationship Relationship with students Relational energetics Experience as a group member Relational energetics Collective coherence	
Self care	5	Embodiment	15
Collective coherence	4	Coherence Benefits of coherence “Wave” metaphor “Force” metaphor	
Connection	6	Heartfulness	4
Relationship	1	Effect of heartfulness on understanding mindfulness	
Relationship with students	5	Effect of heartfulness on understanding mindfulness	
Mindfulness practice with students	1		
Embodiment	11		
Effect of heartfulness on understanding mindfulness	1		
Understanding mindfulness and	1		

heartfulness	
Awareness	1
Emotion	5
Spirituality	4
Experience as a group member	1
Meaning of heartfulness	1
Heart-based teaching	5
Relational energetics	5
Hidden curriculum	1
School context	8
School crisis	1
Coping	1
Stress management	3
Resilience	2
Biofeedback practice	14
Heartfulness practice	5
Practice	13
Challenges to practice	7
Calm	1
Time	1
Peace	1
“Wave” metaphor	1

Understanding mindfulness and heartfulness	
Meaning of heartfulness	
Heartful awareness	
Awareness	
Emotion	15
Calm	
Love	
Appreciation	
Peace	
Well being	
Spirituality	6
Religion	
Heart-based teaching	6
Hidden curriculum	
School context	10
School crisis	
Time	
Stress management	6
Coping	
Resilience	
Practice	49
Motivation for practice 4	
Biofeedback practice	
Heartfulness practice	
Energetic heart	
Challenges to practice	
Extending practice	
Student perception of practice	
Competition	
Addiction	
Music	3
Focus group	1

“Force” metaphor	1
Appreciation	2
Heartful awareness	1
Love	1
Student perception of practice	1
Meditation	3
Benefits of coherence	2
Competition	1
Well being	6
Energetic heart	2
Music	3
Addiction	1
Relational energetics - Cat	2
Focus group	1
Extending practice	1
Religion	2

Appendix K

Emerging themes: School One and School Two

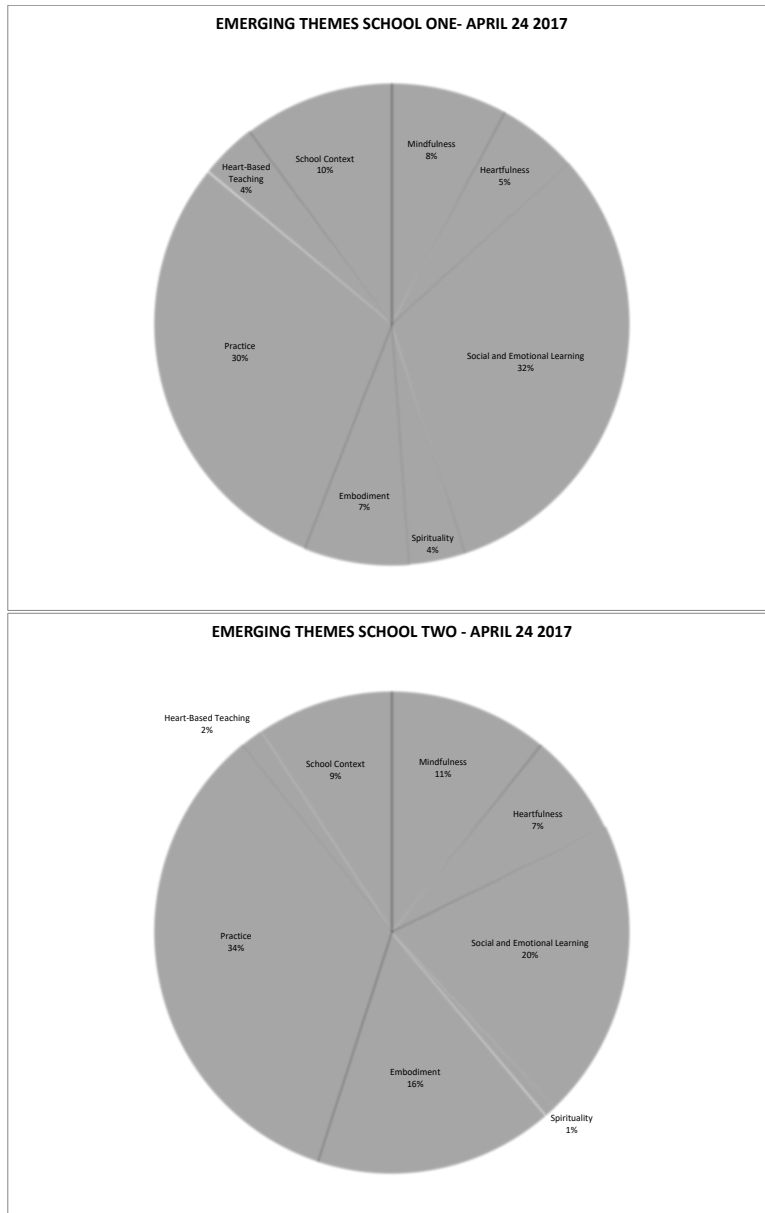


Figure 8. Emerging themes: School One and School Two

Appendix L
Emerging themes including frequencies

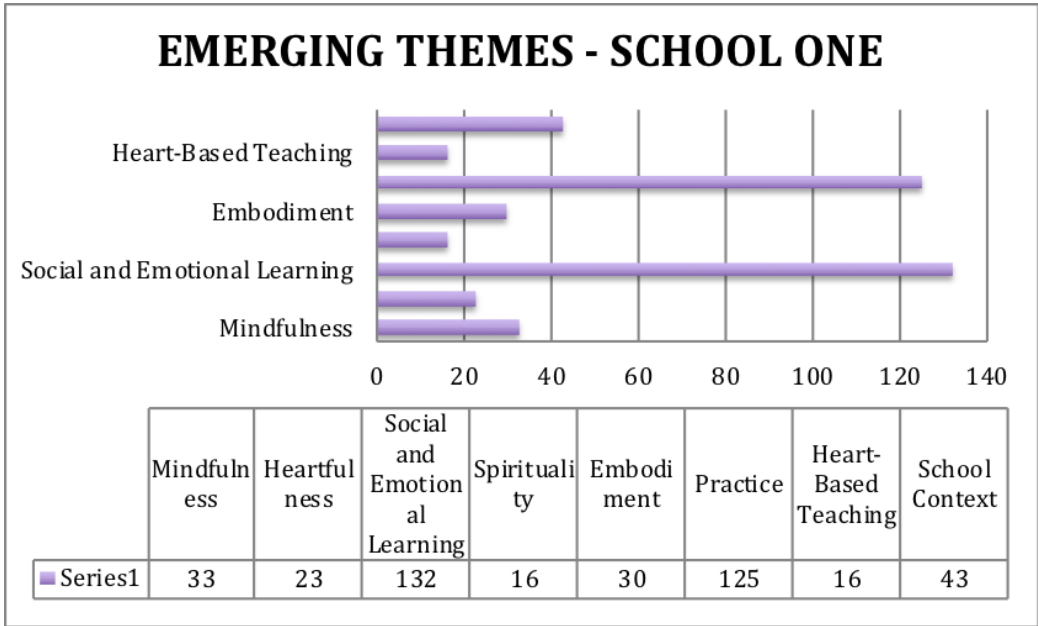


Figure 9. Emerging themes including frequencies (School One).

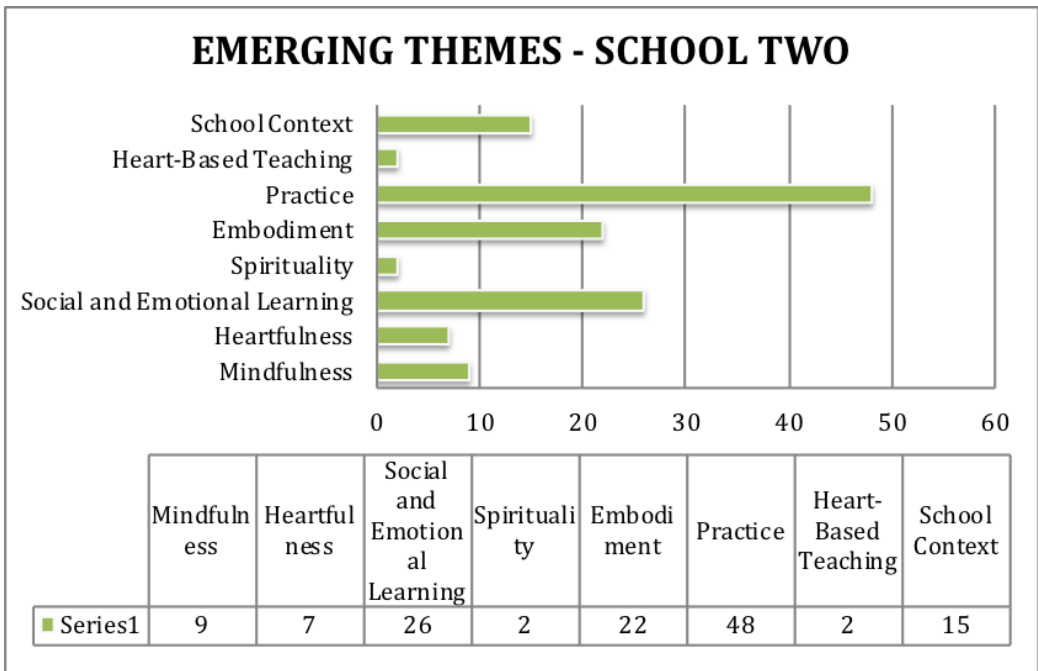


Figure 10. Emerging themes including frequencies (School Two).

Appendix M

Participants' Unique Themes

Table 6

Participants' Unique Themes

ROSE	AVA	ELLA	REN	DECLAN	EMMA
Music	Spaciousness	Letting go	Visualization	Listening	Emergency
Focus Groups	Teacher Involvement	Presence	Habit	Measurability	Motivation for Practice
		Openness	Movement	Hidden Curriculum	
		Intuition			

Appendix N

Conceptual Representation of Research Questions

Table 7

Conceptual Representation of Research Questions

Understanding Heartfulness

What it was about the topic of heartfulness that motivated you to participate in our workshops?

Did your experience with Heartfulness practice influence your understanding of mindfulness and/or mindfulness based practices? If so, how?

What does heartfulness mean to you?

Can you describe your experience with heartfulness?

How do you recognize when you are in the midst of heartfulness in your teaching practice?

How would you describe your past practice or experience with mindfulness?

Embodiment of Heartfulness

Can you describe your experience with using the HeartMath biofeedback program and stress reduction tools?

How important was the HeartMath program in relation to the body of Heartful Awareness information that was offered in the program?

Can you describe your physical experience with the biofeedback program?

How do you know when you are in coherence – what does it feel like in your body?

How do you sustain coherence?

Heartfulness in the Classroom

Can you tell me about a time when you have intentionally evoked heartfulness in your relationships with students?

In your experience, what impact, if any, does heartfulness have on teaching and learning? How do you recognize this impact?

Did you introduce any of the information you learned in the Heartful Awareness program to your students? If so, how would you describe that experience?

Did you find the Heartfulness practice helpful in any way?

Heartfulness in Schools

Do you think that the education system would be open to a heartfulness curriculum in schools?

Do you see a place for heartfulness practice in classrooms and curriculums going forward?