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**NAME:** Miss Yau Yan Wong

**THIS THESIS HAS BEEN ACCEPTED BY**

.....  
**THESIS ADVISOR**

(.....  
Associate Professor Chatree Faikhamta, Ph.D.  
.....)

.....  
**THESIS CO-ADVISOR**

(.....  
Professor Kenneth George Tobin, Ed.D  
.....)

.....  
**DEPARTMENT HEAD**

(.....  
Assistant Professor Songchai Ugsonkid, D.Ed.  
.....)

**APPROVED BY THE GRADUATE SCHOOL ON** .....

.....  
**DEAN**

(.....  
Associate Professor Srijidtra Charoenlarnopparut, Ph.D.  
.....)

THESIS

REDEFINING SCIENCE EDUCATION  
THROUGH THE LENS OF MINDFULNESS PRACTICE (WORKING TITLE)



YAU YAN WONG

A Thesis Submitted in Partial Fulfillment of  
the Requirements for the Degree of  
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Yau Yan Wong 2021: Redefining Science Education through the Lens of Mindfulness Practice (Working Title). Doctor of Philosophy (Science Education), Major Field: Science Education, Department of Education. Thesis Advisor: Associate Professor Chatree Faikhamta, Ph. D. 204 pages.

This thesis includes five essays that explore various ways to understand the human mind, which is the most important instrument in conducting any inquiry. It is a hermeneutic phenomenological study that describes and interprets my lived experiences of working as a science teacher-researcher in a Thai public school in Bangkok for the past eleven years. The overarching framework of this research is authentic inquiry, a multilogical research methodology that has an emergent and contingent design. Through critical self-reflection in various essays and interpreting the cogenerative dialogues with vipassana practitioners and science teachers, I explore how to enhance the awareness, wellbeing, literate citizenry, and sustainability of a community through mindfulness practices. I intend to expand the agenda of science education by crossing over the border between science and Buddhist mindfulness.

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Student's signature

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Thesis Advisor's signature

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Finally, I would like to dedicate this work to my family and friends for their generous support at all levels. Without their belief in my ability, I would not be able to pursue my life project.

Yau Yan Wong

August, 20

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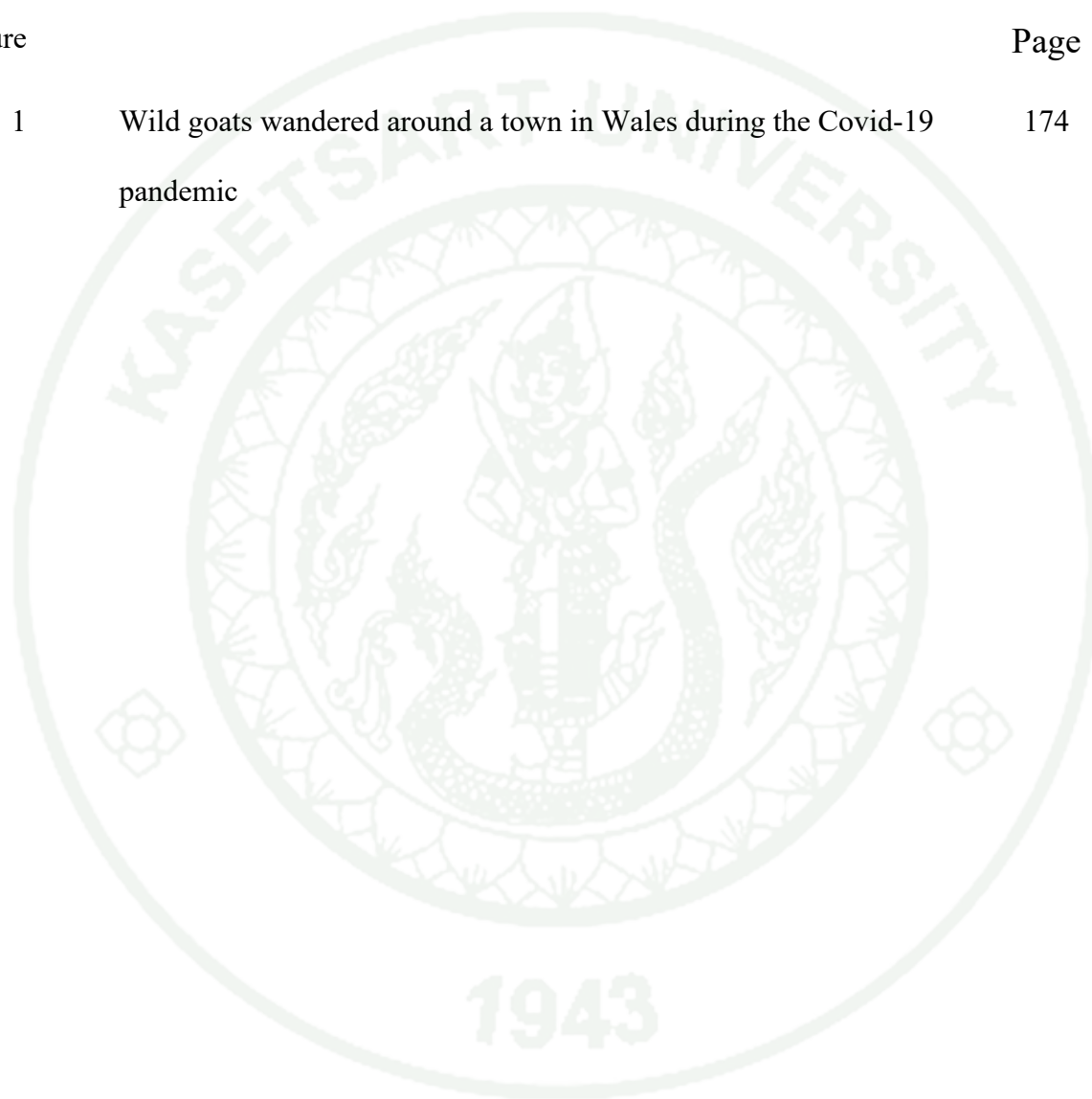
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## GLOSSARY

aggregates	the five elements that comprise the body and mind, including body or form, feelings, memory, mental formations, and consciousness
defilements	the impurities that taint or cloud the mind incessantly, making it impure and unable to see things as they are, generally include greed (desire), aversion (fear, anger, sadness, etc.), and delusion (ignorance of truth or lack of wisdom)
mindfulness	the impartial awareness of what the body and mind are doing in real time; remembering the body and mind at the present moment
Nibanna	not or no longer blowing or burning; this term is used to indicate the state of enlightenment; freedom from suffering
Samadhi	one pointedness of the mind or a mental state that is stable, nimble, focus, and unattached to the present physical or mental phenomenon
wisdom	understanding the impermanence, uncertainty, and unsatisfactoriness of the body and mind

## SCOPE OF STUDY

This dissertation is a thesis by publication with five different essays exploring various philosophical issues related to the promotion of mindfulness, wellbeing, literate citizenry, and sustainability in science education. This study adopts the hermeneutic phenomenological approach to describe and interpret my lived experiences in conducting an authentic inquiry for cultivating emotional intelligence, wellbeing, and sustainable lifestyle in a school community through mindfulness practice. It took place in a public school in Thailand. I intend to reframe science education through the lens of mindfulness practice so that it reconnects and reflects the salient needs of students, teachers, and society. The first chapter includes a statement of the problem, the rationale and purpose of this study, and an overview of each chapter in the thesis.

## INTRODUCTION

### I. Purpose of the Study

This project is a continuation of the research work led by Tobin and his graduate students, who advocate inclusion of practices that promote wellbeing such as mindfulness as part of the science content. I intend to continue the conversation about redefining science education to address issues of wellbeing and sustainable development through mindfulness practice. Powietrzynska, Alexakos, and Tobin (2015) developed and implemented the *Mindfulness in Education Heuristics* among a group of undergraduate students who were preparing for becoming elementary science teachers. In their study, the heuristics helped

participants become more aware of and less reactive towards their emotions and experience enhanced emotional wellbeing. *Mindfulness in Education Heuristics* are mainly based on the findings from research in neuroscience (e.g., Richard Davidson's emotional styles) and contemporary psychometric tests (e.g., Toronto Mindfulness Scale and Five Facet Mindfulness Scale). Because of my experiences in various Buddhist wisdom traditions and the context of this study, I would like to develop a mindfulness heuristic that includes the perspective of mindfulness practitioners from Buddhist traditions, including Zen Buddhism, Tibetan Buddhism, and Theravada Buddhism.

## II. Research Question

The *Mindfulness in Daily Life (MiDL)* Heuristic that I developed in my study was derived from the cogenerative dialogues (i.e., cogens) that I had with several Vipassana teachers from Buddhist traditions. Cogens are dialogues among a group of co-researchers surrounding a topic of interest that focus on understanding contradictions and embrace differences as valuable resources. Cogen is a part of a critical pedagogy because the key purposes of cogen are to maximize different perspectives and identify contradictions that might be changed with the goal of improving the quality of teaching and learning (Tobin, 2014). The MiDL Heuristics also include insights from a few influential mindfulness teachers, including Thich Nhat Hanh from Zen Buddhism, Luangpor Pramote Pamojjo and Phra Ajahn Krit Nimmalo from Thai forest tradition, Luang Phu Thong from Burmese Maha Sisayadaw tradition, and Jon Kabat Zinn from secular mindfulness field. I also include a few items from the Freiburg Mindfulness

Inventory (FMI) that is based on the framework of insight meditation. The MiDL Heuristic aims to heighten participants' awareness of their body and mind and integrate mindfulness in their daily life. This study seeks to address the following research question: "How can mindfulness practice contribute to science education as a lived experience for the wellbeing of every global citizen and sustainability of planet Earth?"

### **III. Outline of the Study**

This study is based on critical theory, which has an emancipatory purpose to awaken people from their mindless way of consumption, participate in decision making about environmental issues that affect their community, and empower them to adopt more sustainable practices to transform society (Kincheloe & McLaren, 2005). The overarching framework of my study is authentic inquiry, which has an emergent and contingent design. Authentic inquiry is a multilogical research methodology developed by Tobin and his colleagues that embraces polysemia and polyphonia (Tobin, 2015). I intend to bridge the gap between theory and my teaching practices through applying what I have learned to improve the wellbeing of myself and others.

I adopt a hermeneutic phenomenological approach to interpret and describe the phenomenon of mindfulness practice through narrative accounts of the lived experiences of other co-researchers and me. Phenomenology rooted in philosophy, sociology, and psychology. It is a qualitative research approach which explores the experience of those living a particular

phenomenon, leading the researcher to gain a full and deep understanding of the experience as conveyed by the person living the experience first-hand (Hellman, 2016). Unlike narrative study, phenomenology describes the lived experience of several people (Creswell, 2007). Phenomenology includes detailed, narrative accounts by participants regarding their knowledge and experience regarding a subject of study. Hermeneutics is the theory and practice of interpretation. It involves identifying common themes of the texts of interviews, and thereby gaining understanding and meaning of phenomena. Hermeneutics is a process and method for bringing out and allowing what is normally hidden in human experience and human relations. Hermeneutical phenomenology combines both interpretation and description of the lived experience. The texts, journals, conversations and dharma talks are interpreted in a hermeneutic cycle, which involves moving from parts of the experience to the whole of experience, and back and forth again and again to increase the depth of understanding within the described and contexts.

This dissertation adopts a socio-cultural framework, which emphasizes that social and cultural factors are crucial to understanding human behaviors, and that individuals and society have a dialectical relationship. It is a “dissertation by publication”, meaning that it includes five essays that are derived from a long version of my autobiography. The first manuscript entitled *An Autobiographical Study of Educator’s Journey in Awakening, Healing, and Liberation Through Mindfulness Practices* (Wong, 2021). It is a chapter of a book called *Doing Authentic Inquiry for Improving Learning and Teaching* edited by Tobin and Alexakos. Through using rich descriptions from my reflective journal, transcripts of my conversations

with Dhamma teachers and Zen masters, and narratives of my teachers, I critically interpreted my lived experiences as a teacher, practitioner, and researcher of mindfulness practices in the past eleven years. I intend to explain the origin of my perspectives on three multifaceted constructs, namely mindfulness, wellbeing, and sustainability, based on my prolonged engagement with monastics in Buddhist traditions.

The second manuscript is entitled Reconnect with self, others, and nature (Wong, 2021) which was published in the special issue of Cultural Studies of Science Education Journal. This paper describes my journey in developing and implementing the mindfulness program among elementary school students among my school community. I share the triumphs alongside with the challenges that I have faced as a female foreign scholar-practitioner-teacher of mindfulness in Thailand. I used a pseudonym (i.e., Diana) to disguise my identity because of the concern about whether the controversy between Mahayana Buddhism and Theravada Buddhism revealed in the story may influence the reputation of the school. However, I believe the insights from this manuscript are valuable for foreign teachers with a similar aspiration to teach mindfulness to children in Thailand.

The third manuscript is entitled Cogenerative dialogue of a professional learning community on mindfulness | wellbeing dialectic (Wong, 2022, forthcoming). This manuscript will be published in a book about wellbeing and contemplative practices edited by Tobin and Alexakos. In this manuscript, I reflected on my experiences in setting up a mindfulness

professional learning community (PLC) with a few like-minded colleagues for promoting safety, wellbeing, and diversity among students. This PLC has ignited a ripple effect in the school community through raising awareness in bullying, compassion, and cultural sensitivity among teachers and students.

The fourth manuscript is about the development and implementation of the MiDL Heuristic on an elementary school teacher called Bethany (pseudonym). I share the insights from various cogens with monks, Dhamma teachers, and other educators about their perspectives of mindfulness. I also describe how I use these insights to create the MiDL heuristics. Originally, seven participants volunteered to try out the MiDL Heuristics. However, later, two participants discontinued the program due to lack of time. I chose Bethany's case study because of her authentic and detailed reflections of her lived experience in her digital journal. Her story demonstrates how the understanding of the body and mind can enhance psychological resilience, wellness, and sustainable lifestyle.

The fifth manuscript entitled Inquiry Beyond Thoughts Through the Middle Way is about how researchers can use mindfulness practice from Theravada Buddhist tradition to become aware of their own ontology, epistemology, and axiology. This paper has been submitted to another special issue of the Cultural Studied of Science Education Journal (forthcoming in Dec 2021). This manuscript includes the perspectives from four Dhamma teachers of Theravada Buddhist tradition about the nature of body, mind, thoughts, emotions,



mindfulness, suffering, enlightenment, and morality. I do not intend to argue that Theravada Buddhism as a more superior knowledge system. However, I believe through exploring a knowledge system that has contrasting ontological and epistemological assumptions from Western science, researchers may cultivate a different attitude towards biases and transcend ideologies with the lens of polysemia.

In the last chapter, I summarize my journey in shifting from a positivist inquiry paradigm to interpretive paradigm through becoming aware of the nature of my mind, thoughts, and consciousness. Drawing from the insights from my lived experiences, I discuss how mindfulness practice can be useful for promoting a healthier, more conscious, and sustainable lifestyle for citizens in various settings and age groups. I advocate for the inclusion of mindfulness practice as part of formal as well as informal science education, not only limited to K-12 schools and higher educational institutions, but also in the daily life of global citizens from all walks of life. Finally, I propose a plan for revisioning science education and the formal education system in the context of Thailand by reinforcing the values of democracy, equity, diversity, and Buddhist wisdom.

## **BANCKGROUND AND RATIONALE**

### **I. Materialism and Collectivism**

I was born and raised in Hong Kong, a westernized city in China. Hong Kong is also a city that is under the influence of capitalism and consumerism. Happiness is generally regarded as the material outcome of hard labor. Shopping and eating are the main leisure activities for Hong Kong people. As the living expense in Hong Kong is quite high, many citizens are struggling to satisfy their basic needs and happiness beyond materials is something that is hard for them to imagine. For example, having a place to stay and enough food to eat, for many families, are as good as it gets. Although Hong Kong used to have the second highest per capital income in the world, the gap between the rich and the poor is widening in the past twenty years. Moreover, the number of reported cases of mental illness is also increasing. About one in six Hong Kong citizens is suffering from depression and chronic anxiety (Choy, 2019). Hong Kong is a good example that shows aggregate statistical indicators, like GDP (i.e., gross domestic product) or per capital income, do not always reflect individual subjective wellbeing.

Like many other Asian countries, education in Hong Kong is competitive and stressful for many young people. I still remember when I was young, I spent most of my waking time on schooling and tutoring. My parents, who were secondary school teachers, spent hours after work on grading assignments. As a result, our family rarely spent quality time together. Most of our family time was devoted to doing homework, reviewing for tests, or doing chores. For Chinese parents, helping their children become successful in the future is more important than anything. There are common sayings in China that “A parent/elderly hits children because of love” or “A kind mother usually raises a spoiled kid.” For Chinese education or parenting, kindness is regarded as a weakness and the happiness of children is rarely addressed. In a collectivist

culture, children are expected to meet the expectations of their parents, elderlies, teachers, and the society, whereas free will, critical thinking, dignity, or authenticity are regarded as less essential (sometimes even threatening). However, in such a culture, I was trained to be a disciplined, studious, and responsible citizen.

## **II. Dinosaurs and Roman Catholicism**

When I was studying in an Anglo-Chinese Catholic primary school, my favorite subject was science. I liked learning about dinosaurs, space, and living things. Since grade one, I loved to collect rocks and fossil stones. The history of Earth and evolution of living things fascinated me. For example, what happened to the dinosaurs and why was it not mentioned in the Bible? Are there any other intelligent beings besides human beings? However, I could not ask these questions in the Catholic school. I was told by my teachers that memorizing the facts in the science textbook was good enough for me to make a living in the future. I felt that it was sinful to question the Holy Bible. As a result, I hid my curiosity about dinosaurs. My experience in learning science at school led to my skepticism towards Catholic Christianity and religion in general. It is because I believe that any institution that attempts to censor children's curiosity about the truths cannot be liberating. There has been a constant struggle between reason and spirituality within me until now.

After completing my secondary education, I studied in a college in the United States. My exposure to the Western way of thinking was eye-opening. I enjoyed the freedom

of asking questions in class, which felt like a breath of fresh air. Questions were welcomed rather than being censored in the US. Besides dinosaurs, I became interested in studying the human mind. I participated in many research projects related to various topics, such as hypnosis, past-life regression, meditation, criminology, and more. If you ask me what is the most profound thing that I have learned from college, I will say that learning how to study any phenomena in a scientific way. I learned that science is not about accepting a received view or facts without question. On the contrary, learning science is about learning how to think with reasons. Moreover, we should not limit science to the scope of a small number of phenomena. We can inquire about anything in our daily life in a reasonable, systematic, and empirical manner.

### **III. The Attainment-Driven Education**

After graduating from college, I returned to Hong Kong. the situation in Hong Kong has not changed much. Following the footsteps of my parents, I worked as an elementary school teacher. The curriculum of the Catholic primary school where I worked focused mainly on traditional subjects, such as language arts, mathematics, science, and social studies. Subjects such as health and physical education or civic education comprises of a small proportion of the school curriculum. Students were still learning about animals and nature from textbook mostly. However, the school principal of this school, who was a father from the Dominican Catholic Church, was more opened to science. Evolution could be addressed within acceptable boundaries. The school hours were getting longer, and the content was also getting harder.

Quite often parents would sign up for hours of after-school tutoring for their children. My students were always sleep deprived. I often thought that it was ironic that education is supposed to be about guiding students to have a healthy, successful, and happy life, but it never teaches our students how to be happy right now.

The attainment-driven trend of education is not limited to Hong Kong, but also across the globe. This trend is detrimental to the wellbeing of students, teachers, and every stakeholder in the ecosystem. A Korean philosopher and educator, Bai (2019) criticized that our modern Westernized education system is training students to become learning machines through prioritizing “measurables” (e.g., grades, certificates, awards, and high income) rather than wellbeing. In addition, many students have been educated in an indoor environment, separated from the wonders of Mother Nature. Bai criticized that modern education system is depriving young people from their vital core and led to apathy towards human impact on the environment. In the United States, there is also a tendency to focus K-12 schools on traditional valued subjects, such as reading, writing, science, and math, whereas improving the quality of lifestyles often take a backseat (Tobin, 2017). The current US education is putting more focus on preparation for entrance exams, higher education, or vocational careers, rather than personal or social transformation.

To reverse such an unhealthy and dehumanizing trend in education, we need to an education system that awakens, heals, and liberates our youth from the existing unhealthy

culture and nurtures a more conscious, compassionate, and sustainable lifestyle. Bai (2019) suggested the inclusion of contemplative exercises, such as breathing meditation and forest bathing, as part of education to reconnect students with nature so that they can understand the impermanent and interdependent nature of existence. In the book entitled *Happy Teachers Change the World*, Hanh and Weare (2017) also argued that the increasingly attainment-driven education systems in many countries conditioned teachers and students to constantly work in a forward planning mode, which nurtures a lot of loneliness and emptiness in a society. To fill in the vacuum inside, people become addicted to sensual pleasures from video games, social media, drugs, or sex. Hanh and Weare argued that education needs to prioritize happiness of all stakeholders in a school community and the practice of mindfulness is a tool for slowing down, being present, and experience happiness from within.

#### **IV. The Science of Wellbeing**

Since 2009, I have been working as a foreign elementary teacher in a Thai public primary school. There are about 350 students in the school from preschool to grade 12. In each homeroom, there are a male teacher and a female teacher, representing the father and the mom of students. There is no staff room for teachers in my school. Hence, teachers and students spend most of the day together in the same homeroom. Everyone wears sandals in the classroom and the learning atmosphere is quite casual. I think because we spend so much time talking and playing together, there is no clear boundary between formal and informal learning time. Because of my close relationship with students, I get to know them in a personal way.

Quite often, adults believe that children do not have to face any stress. However, from my experiences working as an elementary teacher for more than a decade, I have learned that many children face a lot of stress from school life (e.g., stress from schoolwork and exams, bullying) or family life (e.g., parental divorce, domestic abuse, or death of close relatives). However, most children are not mature enough to comprehend and alleviate their intense emotional pain without proper guidance from adults. When students could not cope with their negative emotions, they usually find it hard to focus and lose the motivation to learn. I become interested in looking for ways to improve my students' emotional intelligence and wellbeing.

During the beginning of the Covid-19 pandemic, I taught a lesson on the corona virus in science class in my homeroom. I showed my fourth graders a video with some basic facts about the virus and the precautions that they should take to protect themselves. After watching the video, we had a short discussion. One of the students asked, "I feel very scared. How can I feel better in this situation?" His question resonated with something that I feel deeply about, which was, science education cannot just stop here because scientific facts were not enough to alleviate my students' difficult emotions in times of crises.

I believe that education should not limit to cold cognition. If the purpose of education is to enhance people's quality of living, it should not exclude emotions and consciousness that are important aspects of human existence. Science, mathematics, or any subject is not just a tool for boosting the economy, but also a creative endeavor for enhancing

the quality of our daily lives. In chapter 6 of the World Happiness Report 2015, Layard and Hagell (2015) wrote that the wellbeing of students should be an explicit goal of every school and the priority of education for the 21st-century. Besides critical thinking and problem-solving skills, students need to be psychologically literate to handle the stress from disasters so that they can navigate their lives safely in difficult times. Hence, I advocate for the inclusion of the science of wellbeing in a school's curriculum.

In 2010, I submitted a proposal to the school principal about developing a mindfulness training course for improving students' mental wellbeing. At that time, social emotional learning is rarely heard of in Thailand. Like most parts of the world, Thai education system focused mainly on traditional core subjects, such as languages, math, and science. The principal was quite surprised about my idea and asked, "How is mindfulness related to other subjects in the curriculum?" I replied, "Mindfulness is a tool for enhancing students' focus, self-awareness, calmness, and wellbeing, which are essential for learning other subjects." There were other concerns among the school administrative committee, including whether I could represent Buddhist mindfulness correctly and whether the mindfulness program meet the ethical standards of the university. After serious consideration, the school administrative committee approved the proposal and allowed me to teach the mindfulness course in the working skills class. This marked the beginning of my journey in teaching the science of wellbeing.



Wellbeing is generally regarded as the experience of health, happiness, and prosperity (psychologytoday.com). It is a multifaceted construct that includes various aspects of living, such as life satisfaction, good mental health, a sense of meaning or purpose in life, and an active lifestyle. In the past, economists in the West use GDP (i.e., Gross Domestic Product) and national per capital income as the indicators of citizens' wellbeing. However, in recent years, concerns emerged regarding the fact that these macro-economic statistics cannot provide a sufficiently detailed picture of the sense of wellbeing that ordinary people experience in their daily life (OECD, 2020). In fact, since early 1970s, His Majesty Jigme Singye Wangchuck, the Fourth King of Bhutan, a Buddhist country in Southeast Asia, has been questioning if GDP alone can deliver happiness and wellbeing to a society. His Majesty proposed the use of GNH (i.e., Gross National Happiness) as the measure of the quality of development of a nation. His Majesty believes that the main purpose of a government is to create happiness for its people and happiness is possible when human society can live in harmony with nature. Ura, Alkirie, and Zangmo (2012) explained that GNP includes nine domains: psychological wellbeing, time use, community vitality, cultural diversity, ecological resilience, living standard, health, education, and good governance.

Bhutanese philosophy of wellbeing forms the basis of the research associated with the World Happiness Reports. The authors of WHR (2020) reported that indicators of economic growth do not necessarily reflect individuals' subjective wellbeing. Income becomes a less significant predictor of happiness once it has reached the level of satisfying basic needs. In fact, other factors such as equality and trust in social institutions, meaningful relationships, and

sustainable environment are equally, if not more, important for happiness. Since the release of WHR, many organizations, such as Organization for Economic Co-operation and Development (OECD), seek to define and measure wellbeing of global citizens. Researchers begin to put more focus on subjective wellbeing (SWB) of individuals. For example, Robert Cummins from the Australian Centre of Quality of Life, defined SWB as an individual's satisfaction with one's standard of living, health, achievements in life, relationships, safety, community connectedness, future security, and spirituality or religion (Tomyn, Norrish & Cummins, 2013). The question that I seek to address here is, if many of the above objective conditions for wellbeing are not available to a person, such as during a global crisis like COVID-19, is it still possible for a person to have a sense of wellbeing?

## **V. Science Education and Emotions**

As the wellbeing of human beings are interdependent on the sustainability of other species and the conditions of abiotic part of nature, educating students about the science of wellbeing seems to be appropriate in a science classroom. However, many science educators are still debating about this issue. The conversation about the need to reform science education so that it reflects salient individual and societal needs has been going on for many decades. As far back as the late 19<sup>th</sup> century, John Dewey was exhorting educators to create and enact curricula that were related to everyday life. Since then, Atkins (1967), and then Roberts and Russell (1975) emphasized that an over-reliance of all educational research on empirical, hypotheses-testing techniques, has limited educational research to trivial issues that bear little

relevance to classroom practice or societal needs. Several decades later, this conversation continues. In the article entitled *The much exaggerated death of crypto-positivism* by Tobin and Kincheloe (2009) expressed their concern that many social scientists still embrace the schemas from positivism, which made them caught in a convergent process of inquiry and ended up studying same issues over their entire career without keeping up with rapidly changing social priorities. On the other hand, important issues such as mass extinction, climate change, and wellbeing have not been seriously addressed by science educators.

In January 2019, I decided to pursue my doctoral degree in science education and my topic is about reframing science education through the lens of mindfulness for wellbeing and sustainable lifestyle. When I first began my doctoral study, several professors and graduate students asked me how mindfulness, emotional intelligence, and wellbeing are related to science education. A friend of mine said most researchers in the field of science education study inquiry-based learning, model-based learning, or STEM, but very few are interested in studying emotions. Another friend said mindfulness and wellbeing should be in the field of psychology or counselling, but not science education. When I asked them why wellbeing should not be part of the science content, they said emotions, feelings, or mindfulness are something that cannot be observed or measured objectively and thus they are not interesting for scientists or engineers. Some friends suggested that I should change my dissertation topic to scientific reasoning or metacognitive skills, which seem to be more relevant to science.

I strongly disagree that emotions are irrelevant to science education. In fact, there is an increasing number of research studies in neuroscience indicating that emotions play an important role in attention and cognition. For example, Davidson's (2008) study on the influence of meditation on emotional regulation indicates that emotion drives attention and meditation helps enhancing sustained attention, attention, and emotional regulation, and reduces emotional reactivity towards stimuli. When people face crises, emotions often override logical reasoning due to the influence of amygdala, a part of the brain that controls fight or flight reactions. Davidson and Begley's (2012) experiments indicate that contemplative practices, such as mindfulness practice, can enhance psychological resilience towards stress through strengthening and increasing the connections between left prefrontal cortex and the amygdala. Therefore, it is important for science educators to understand how emotions and mindfulness mediate cognition so that they can prepare the new generation to face various 21<sup>st</sup>-century grand challenges.

## **VI. Why Mindfulness?**

The concept of mindfulness originated from the Buddhist traditions. In Buddhist scriptures, mindfulness (*sati* in Sanskrit) is a mental state with clarity and awareness of the present bodily or mental phenomena. For example, Dalai Lama from Tibetan Buddhist tradition defined mindfulness as paying close attention to our thought processes (Hyland, 2015). Lama said that mindfulness practice aims at eliminating the unhelpful and misleading conceptions of self or an isolated self from the community. Venerable Pramote Pamojjo, a revered monk from

the Thai forest wisdom tradition, defined the mind as the “knower” of all physical and mental phenomena and mindfulness as a mental state that observe all phenomena with an impartial attitude. V. Pamojjo explained that mindfulness is a wholesome state that allows a person to “see things as they are” and develop insight into a phenomenon. Gunaratana (2014), a famous monk from Sri Lankan Theravada Buddhist tradition, explained that mindfulness is mirror thought and nonjudgmental observation, which is very much like a scientist observing an object under a microscope without any preconceived notions, only to see the object exactly as it is. For Buddhists, being able to think and feel is not the highest human potential. The highest human potential for Buddhists is the ability of the mind to transcend all physical and mental phenomena through mindfulness and concentration.

Mindfulness has been practiced in the Eastern wisdom traditions for many centuries, but recently it is examined across different contexts of learning by Western scholars due to its potential in heightening awareness of self, others, and nature (Gunnlaugson et al., 2014). Contemporary psychologists and educators expand the definition of mindfulness and use the concept for other purposes, such as, improving sustained attention, reducing stress, treating chronic pain, and enhancing mental health. For example, Kabat-Zinn (1990) defined mindfulness as the awareness of momentary experiences with a non-identified, unbiased, open, and accepting attitude. Kabat-Zinn is an American medical science professor who created the Centre for Stress Reduction Clinic, where he teaches patients to alter their relationship with their chronic pain through practicing mindfulness.

Besides medicine, mindfulness has been researched and applied in education setting. Tobin (2018, p. 112), describes mindfulness as “a way of being in the world, being in-with others and being a self that is mutable, plural and context dependent.” Tobin explained that mindfulness is practiced in daily life through being present, maintaining focus, showing compassion for self and others, being honest, fair, and dependable in social interactions, and serving as a steward to foster healthy lifestyles locally, globally, and beyond. Tobin and his colleagues have undertaken many research studies that aim to develop reflexive tools for citizens across the age spectrum to enhance wellness and to ameliorate excess emotions. They created tools such as *Mindfulness in Education Heuristic* (i.e., statements for heightening awareness of salient characteristics of a construct) and Jin Shin Jyutsu’s (JSJ) soft touch therapy for teachers and students alleviate intense emotions. Tobin’s research work led to an expansion in the number of research hubs across the globe that applied meditation and mindfulness in college and K-12 schools for improving the quality of teaching and learning and the enhancement of wellbeing.

There has been a growing interest in integrating mindfulness practice with the education for sustainable development, but mainly among adult populations. For example, Barrett et al. (2016) designed the Mindful Climate Action curriculum to help a group of 16 adults to improve their health while simultaneously lowering their carbon footprints. The pilot test results indicated that when participants became more mindful of their health, they were

more likely to adopt a low carbon lifestyle, that includes shifting towards a plant-based diet, decreasing energy use, reducing unnecessary purchasing, increasing active transport, and reducing automobile use. In the study by Brown and Kasser (2005), mindfulness is associated with ecologically responsible behavior that is oriented towards the common good. They explained that mindfulness helps people recognize that all beings are deeply connected to other beings and the world, including their actions, and thinking.

## OBJECTIVES

I propose to address the following objectives in my thesis:

**Part 1** - Explore the characteristics of mindfulness and various approaches of mindfulness practice based on my lived experiences in an autobiographical study.

**Part 2** - Understand mindfulness practice from the perspectives of Buddhist traditions and the implications of mindfulness in wellbeing, literate citizenry, and sustainability through cogens.

**Part 3** - Investigate how science education can engage more fully with surrounding social and natural environment through developing and implementing a *Mindfulness in Daily Life Heuristic* among participants from various contexts and different countries.

## CONTRIBUTIONS AND ANTICIPATED OUTCOME

In this study, I intend to redefine science education as lived experience of every global citizen through engaging my community in mindfulness practice and expanding the parameters of science beyond the walls of schools through an online forum. I aim at developing the *MiDL Heuristics* as a guideline for community mindfulness practice based on insights from my cogens with the Sangha, Vipassana experts and all coresearchers in the Thai forest Buddhist tradition. The goal of this project is to catalyze transformation at individual, communal and societal levels for a healthy and sustainable society.

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## PUBLICATIONS

### Publication 1

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## CHAPTER 6

## An Autobiographical Study of an Educator's Journey in Awakening, Healing and Liberation through Mindfulness Practices

*Yau Yan Wong*

### Abstract

This is an autobiographical study about how my lived experiences in practicing mindfulness and conducting authentic inquiry has been transforming my ontology, epistemology and axiology, and influencing my wellbeing, relationships with myself and others, and teaching practices. Highlights of my own autobiography, describing my experiences in practicing, teaching and researching about mindfulness are woven together with narratives from my mentors and colleagues. Through the use of interview transcriptions, journals and findings from my previous research projects, I provide thick descriptions of my lived experiences within several knowledge systems of mindfulness practice (e.g., Vietnamese Mahayana Buddhism, Burmese Mahasi Sayadaw Vipassana, and Thai forest Vipassana). Through this study, educators can learn how to bridge the gap between theory and practice through authentic inquiry and become powerful change agents that can catalyze positive changes in the community.

### Keywords

mindfulness practice – education – wellbeing – teaching – learning

### 1 Autobiography as a Research Methodology

In the past, social scientists have been emulating the natural scientists in applying purely a quantitative approach to studying human phenomena in order to make social sciences more “mature” or “rigorous” (Guba & Lincoln, 1994). Statistical tests are useful for getting an overall picture and pattern of a phenomenon, but they do not help researchers understand how subjects make sense of

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their world and what they have experienced. Kenneth Tobin (2015) argues that positivist research often produces oversimplified and distorted knowledge that fails to illuminate social reality or contribute to any meaningful transformation. One of the common criticisms about positivist research is the attempt to achieve objectivity by separating the researcher and the researched. Wolff-Michael Roth (2000) argues that the observer and the observed are inseparable because they co-determine each other. Moreover, how an individual perceives the environment and interprets his or her experiences depend on his or her history. Hence, Edmund Husserl established phenomenology as a philosophy to challenge the Cartesian dualistic philosophy of reality (reality is separated from the observer) that positivist research is based on (Sloan & Bowe, 2014).

Phenomenological methodologies that aim to provide a rich textured description of lived experiences is a more fruitful way to understand subjects' perceptions of the world in which they live and what it means to them (Kafle, 2011). Phenomenology is the study of essential meanings of a phenomenon through penetrating deep into human experience (van Manen, 1997). There are many forms of phenomenology, such as Husserl's transcendental phenomenology, Søren Aabye Kierkegaard's existential phenomenology, and Paul Ricoeur's hermeneutic phenomenology (Kafle, 2011). Paul Ricoeur's hermeneutic phenomenology rejects transparency of self and reduction of reality, the premises that underpins transcendental phenomenology (Petrovici, 2012). Instead, Ricoeur argues that the self can be the subject matter of knowledge, creation and value acts (Petrovici, 2012). This study adopts hermeneutic phenomenology to understand mindfulness practices in various Buddhist traditions and its contributions to wellbeing and education through describing and interpreting my life story.

The core of this study is based on first-person narrative accounts from a longer version of my hermeneutic phenomenological historically constituted autobiography. Autobiography, an account of one's own life story, is a kind of phenomenological work that can be used as a critical tool for educators to evaluate and improve knowing and learning (Roth, 2000). It may help overcoming the epistemological difficulties raised by the problem of separating the observer and the observed by taking a first-person perspective (Roth, 2000). However, the study of personal experiences requires a radical suspension of judgments and a systematic method that deals with one's preexisting judgments and beliefs, so that the study does not lead to ideology, delusion and conceptual blindness (Roth, 2000). Hence, Joe Kinchloe and Kenneth Tobin (2009) recommend that scholars employ reflexive methods to identify the epistemologies, ontologies and axiologies that are salient in their scholarship. Ontology refers to the study of being and how people perceive reality (Kafle,

2011). Epistemology refers to how people know what they know. Axiology refers to people's ethics and values; and to the involvement of researchers' values in the process of knowledge generation. Our ontology, epistemology and axiology form the foundations of our way of learning and navigating the world. Hence, identifying these three aspects of knowing help scholars become aware of the influence of their preexisting beliefs.

This autobiographical study serves two purposes. First, it aims for critical reflection on the significance of the most salient events in my mindfulness practice journey and learning, teaching and researching. It is based on rich data that I have accumulated over the past 10 years from my reflective journals, students' journals, transcriptions of interviews, field notes of lesson observations, and video recordings of my lessons. Second, I intend to show other educators how authentic inquiry can be conducted to enhance their teaching practices and wellbeing. Authentic inquiry is a research methodology developed by Tobin and his colleagues that is collaborative and involves all participants as co-researchers (Tobin, 2015). It is a multilogical methodology that embraces differences while seeking to understand a social phenomenon and facilitate positive individual and collective changes. Multilogicality is based on the premise that theory and practice have a dialectical relationship and all participants should benefit from the research process. A concluding section of my chapter includes the highlights of the key features of authentic inquiry in this study and its implications in education.

#### 1.1 *My Ancestors*

My interest in the helping profession was inherited from my grandparents and my mother. My grandparents from my mother's side used to be entrepreneurs in mainland China but escaped to Hong Kong during World War II. When Japanese invaded Hong Kong, my grandparents lost all their wealth. Despite their hardship, they continued to support their community. My grandfather, as a politician and a dentist, provided affordable dental care to the local people. My grandmother recused many young women who had been abused by the soldiers and attempted to commit suicide. My grandparents lived a very simple life and kept donating money to the poor until they passed away. Their strong will to help others came from their faith in a Buddhist Bodhisattva called Guan Yin, the Goddess of Mercy. My grandparents' lived experiences through the war inspired their children and grandchildren to live a life with compassion and generosity.

When my mother was young, she received a scholarship from a Catholic priest to study abroad. Therefore, she became a Catholic Christian after baptism. My mother worked as an English teacher and a school counselor in a



public high school. She chose to work in a slum area in Hong Kong, where she felt she could contribute the most. Following the footsteps of her parents, she provided support to many disadvantaged students who had depression or suicidal attempts. However, as my mother had witnessed a lot of social injustice happening amongst her students' community, she became quite burnt out and angry. I learned from my mother's experiences that helping professionals also need support to understand their own suffering and take care of their own wellbeing.

### 1.2 *Being a Student*

Because of my family history, I have had a deep yearning to learn about the nature of mind and to help people out of suffering since I was young. I studied psychology for my bachelor's degree at Virginia Polytechnic Institute and State University and for my master's degree at University College London. The part of my undergraduate study from which I have learned the most was my experiences as a crisis hotline counselor at the New River Valley Community Centre, Blacksburg, Virginia. I had been an intern there for about a year and a half. My main responsibility was to take phone calls from college students and the citizens in Blacksburg who had suicidal attempts and to trace the origin of the phone calls for the police. I received training in developing skills to actively listen to patients, diagnose psychopathology, assess degree of threats, and negotiating with patients during crisis. Through listening to many stories from the phone calls, I learned from the lived experiences of the others and learned about the causes of suffering. However, towards the end of the internship, I was quite burnt out. As I did not know how to transform my own suffering, I did not know how to help the others to get unstuck from their negative emotions. I got so discouraged that I decided to give up my aspiration to be a counselor after graduation.

### 1.3 *Being a Teacher*

I returned to Hong Kong after graduation and worked as an elementary school teacher for three years. I learned that stress and anxiety caused by the fast-paced lifestyle in Hong Kong had a detrimental effect on wellbeing of students and teachers. The school curriculum was packed with many contents, activities and assignments but did not leave any room for students to play, to reflect and to be self-aware. All teachers and students were like hamsters running on wheels all the time, and we were exhausted.

Such a lifestyle was not sustainable in the long term. If our children are feeling that their lives are not sustainable "now," how are we going to have a sustainable future? Teaching and learning should be enjoyable, meaningful and

nourishing. This discontent about the current education system motivates me to search for the way to free myself, my colleagues and my students from the imprisonment of unsustainable ways of living. Therefore, Buddha's teachings that aim at liberating us from suffering resonate with the conviction in my heart. In the following sections, I briefly explain some specific terminologies in Buddhism. Then I describe my journey in mindfulness practice and learning, teaching and researching across various Buddhist knowledge systems.

#### 1.4 *Buddhism in a Nutshell*

Buddhism was founded by Siddhārtha Gautama (563–483 BCE), who was born in the small Shakya (Sakka in Pali) Republic, a part of the Kosala realm of ancient India and now in modern-day Nepal (Harvey, 2012). In order to search for a way to liberate all human beings from their suffering, Gautama renounced the royal life and lived as a hermit for some time studying under various teachers, before attaining enlightenment (Nibbāna in Pali). After the attainment of enlightenment, Siddhārtha Gautama was known as Buddha, the fully enlightened one and the one with full wisdom.

Buddha discovered the Middle Way and taught insight (Vipassanā in Pali) meditation to his followers so that they could attain Nibbana. The Middle Way refers to moderation, or not to indulge in sensual pleasures and not to torture oneself. Nibbana literally means 'extinguishing the flame' and refers to the state of enlightenment, the end of suffering, complete eradication of all defilements, and an equanimous mind. Equanimity (Upekkhā in Pali) refers to the capacity to see people and situations in the right proportions, and with impartiality (Koster, 2015). Buddha's teachings (Dhamma in Pali) were passed on through Dhamma talks and chanting. Dhamma also has other meanings, including natural phenomenon, mental object, truth, reality, and wisdom.

Appropriate mindfulness refers to a wholesome mental state that knows a phenomenon as it is. It is one of the eight factors of Eightfold Path that leads to the cessation of suffering (Koster, 2015). Mindfulness helps us understand the three universal characteristics of the body and mind, that they are impermanent (Anicca in Pali), uncontrollable or non-self (Anatta in Pali) and unsatisfactory or insubstantial (Dukkha in Pali), and gain wisdom to transcend the mundane world. Wisdom refers to liberating insight (Koster, 2015) or knowledge from seeing the truth of how things really are through direct experience (V. Pamojjo, 2015). When we know that all phenomena never persist and that they are conditioned to rise and fall, we gain the wisdom of impermanence. We understand non-self when we know that there is no separate self in any of the five aggregates (Khandha in Pali), including the body (Rupa), feelings (Vedana), perception (Sanna), volitional activities (Sankhara), and

consciousness (Vinnana). Suffering in a Buddhist sense means burden and the body and mind of ours are the suffering proper (V. Pamojjo, 2016). Buddhist mindfulness aims at eradicating our attachment to the suffering proper.

As we accumulate wisdom through insight meditation, we gradually wash away defilements from the mind. Defilement (Kilesa in Pali) refers to the impurity that taints the consciousness (Koster, 2015). There are three main categories of defilements, including desire and attachment (Lobha in Pali), hatred or aversion (Dosa in Pali), and ignorance or delusion (Moha in Pali). Defilements in the mind enslave living beings in the vicious cycle of birth and death (Saṃsāra in Pali). Therefore, insight meditation aims to liberate sentient beings from Samara. An Arahant (fully enlightened being) is the Buddha's disciple who is free from Samara because of the right understanding of the Four Noble Truths, that are, the noticing of suffering, the cause of suffering, the possibility of ending suffering, and the path to the cessation of suffering.

#### 1.5 *Morality Training*

I was baptized to become a Catholic Christian when I was five years old. But my heart never resonated with the Bible teachings. After marrying my Thai husband, who is a Theravada Buddhist, I became a frivolous student, searching for many encyclopedias and documentaries on Buddhism so that I could understand him better. I discovered that Buddhism is very similar to psychology because it is a study about the body and mind.

In 2010, I was invited by my husband's colleague, Dr. Morrakot, to join A Day of Mindfulness at the Thai Plum Village International Meditation Centre in Pak Chong, Khaoyai. Plum Village is a sect that belongs to Mahayana Buddhism, which puts emphasis on spreading Dhamma to the general public and attaining Bodhisattvahood through cultivating a moral lifestyle. I had a chance to meet the founder of the Plum Village, Thay (Teacher) Thich Nhat Hanh. Thay has become one of the most influential spiritual leaders in the 21st century because of his relentless work of advocating for nonviolence and justice. During the Dhamma talk, he talked about his experience in the Vietnam War and how he helped Vietnamese refugees to settle in France. His determination in uniting people from all religions and achieving world peace deeply touched me. During the seminar, I met people from different religious backgrounds, including Islamic, Christian, Catholic, Hindus, etc. I was glad to discover so many open-minded people and felt like at home.

Thay defined mindfulness as an energy that recognizes what is going on in the present moment (Hanh, 2011). Thay (2011) wrote that we can do the same things we always do – walking, sitting, working, eating, and talking – except we do them with awareness of what we are doing. He founded Engaged Buddhism

based on his belief that mindfulness practice should be very close to our daily life. For the cultivation of morality, compassion and mindfulness in schools, he advocated applied ethics in education. His monastery has been actively participating in educational reform through providing mindfulness training for educators, such as Wake Up Schools, Applied Ethics Retreats and A Day of Mindfulness.

I became a regular participant in A Day of Mindfulness, held on the third Sunday of every alternate month in Bangkok. The purpose of the event is to allow practitioners to get away from their urban living and provide a blueprint for them to integrate mindfulness in their daily life. The monastics from Thai Plum Village led the activities in the event. We practiced food contemplation, sitting meditation, walking meditation, deep relaxation, group sharing and listened to Dhamma talks. All monastics and lay practitioners of Plum Village received the Five Mindfulness Training, the cultivation of true happiness, true love, deep listening and loving speech, mindful consumption, and reverence for life (Hanh, 2009). The principle that underpins the Five Mindfulness Training is to live our life in the Middle Way, that is, not to indulge in sensual pleasures or to cause any harm to ourselves and other living things.

After following the practices of Plum Village for a few months, I experienced some subtle transformation. For example, I started to see more details in my thoughts and became more aware of my speech. My understanding and compassion towards the others grew stronger because I could see the similarities between myself and others. As I experienced more moments of mindfulness throughout a school day, my mind was able to wake up from the thinking mode and spend more time in the being mode. I became more sensitive to the needs of my body and mind, which allowed me to know my limits better and remember to take care of myself whenever I felt stressed. I also became more aware of my students' needs and inserted more moments of silence within a lesson so that they could connect with their body and mind more often. As the collective mindfulness energy in the classroom grew, teaching and learning became the mindfulness practice for me and my students.

#### 1.6 *Teaching Mindfulness to Children*

After practicing mindfulness for about a year, I began to wonder if I could introduce some simple mindfulness exercises to my students. I believed that it was the duty of a teacher to help students cultivate a strong mind. First of all, what is more important than knowing ourselves? Moreover, we spend more than eight hours together almost every day and teachers occupy a big part of our students' lives. Hence, we should make sure our time together is nurturing for each other. Thay's book entitled *Planting Seeds – Cultivating Mindfulness in*

*Children* (Hanh, 2011) had become a teaching guide for my first mindfulness lessons.

At first, I taught one lesson per week and tested the students' response. At that time, I was the only teacher in my school to bring mindfulness to the classroom. I picked a few core practices, like belly breathing, walking meditation, food contemplation and deep relaxation. As time went by, I became more confident in my teaching skills and practiced more with the children throughout the week. The children loved novelty and became very curious about the practice. They talked about this with the family and introduced the practice to their families.

#### 1.7 *Mindfulness Practice and Emotional Intelligence*

I was fortunate to meet some scholars with a similar vision from Thammasat University, who would like to see how mindfulness practice could enhance children's potential in learning. So, we set up a 6-session-mindfulness course in a month based on the lesson plans of *Planting Seeds*. Then we launched it in a Grade 5 class in my school from 2012 to 2013. Our training course focuses on how to bring mindfulness into students' daily life. Each session includes 3 to 5 minutes of sitting meditation and activity about the understanding of our nature. We gave students a self-report emotional intelligence (EI) assessment before and after the mindfulness training course. It contains 9 components, including self-control, sympathy, responsibility, motivation, problem-solving, relationship, self-respect, sufficiency, and mindfulness. The results indicated that most students felt a general improvement in 8 out of 9 components of EI after 6 sessions of mindfulness training. We presented the findings at BAI International Conference 2012, Hokkaido, Japan (Chongpaisai, Raveewan, & Wong, 2012). The success of this research project motivated me to deepen my understanding in mindfulness practice and broaden my knowledge in other Buddhist lineages.

#### 1.8 *Mental Training*

In 2012, I met a lecturer from Bangkok University in a Thai cultural course. She recommended me to join a Vipassana retreat in Burmese Mahasi Sayadaw tradition, which was famous for its well-structured and intensive curriculum. Hence, I joined my first mindfulness retreat with her, in Wat (Temple) Phrathachomthong Worawihan, a temple founded by Venerable Thong Sirimangolo, or more commonly known as Ajahn Thong. During the five-day-retreat, I stayed in the foreigner's section and learned insight meditation under the guidance of Ajarn Tanat. This meditation school focuses on the four foundations of mindfulness by using mental noting. Ajahn Thong defined mindfulness as to see

what is arising in this body or mind (V. Sirimangolo, 2012). The Four Foundations of Mindfulness are the four things that we should observe during meditation (Table 6.1). They are body, feelings, the mind and mind-objects.

TABLE 6.1 Four foundations of mindfulness (adapted from V. Sirimangolo, 2012, pp. 34–35)

Foundations	How to observe
Body	The acknowledgement of bodily movements, including major movements (e.g., walking, sitting, lying) and minor movements (e.g., breathing).
Feelings	The acknowledgement of feelings, such as happiness or suffering, comfort or discomfort.
The mind	The acknowledgement of the rising and falling of thoughts, which usually revolves around the past and the future.
Mind-objects	The acknowledgement of five hindrances, which are pleasure, displeasure, distractions, drowsiness, and doubt.

Vipassana meditation retreats in the Mahasi Sayadaw tradition aim to cultivate Samadhi (mental stability) to lead mindfulness. Retreats in this tradition are famous for their solitude, intensity and precision. Every morning, practitioners wake up at 5 am to submit their assignments to their mentor. Then they practice sitting and walking meditations continuously, except for eating or going to the restroom, until 10 pm. The readiness of practitioners to progress to the next stage depends on the wisdom that they have attained, which is assessed by their mentor every morning. Towards the completion of a foundation course, practitioners are expected to attain the sixteen knowledges of insight, that encompass the discerning of mentality-materiality, the knowledge of three characteristics of existence (impermanence, non-self, suffering), the desire to be free from suffering, and considering the body and mind with equanimity (V. Sirimangolo, 2012).

### 1.9 *Mindfulness and Learning Atmosphere*

After the first retreat, I was introduced to Phra Ajahn Suksan, a senior Thai monk at Wat Chomthong. He is a well-known Vipassana teacher who had students from all over the world. He had been my mentor, guiding my meditation practice for about a year. I completed eight hours of sitting and walking meditation weekly and reported my progress to him through Skype. Joy Wu, a Taiwanese nun, worked as a translator for us. During my distance training with

Ajahn Suksan, I was handling a bullying case in my classroom. Ajahn Suksan shared his valuable insights from his years of teaching experiences with me, regarding how to cultivate wisdom, compassion and awareness amongst children. Below are his teachings on compassion:

The victim may be doing something that hurts her relationship with the others. You may want to find out why other students do not like her and help her to stop these behaviors. You also need to spend more time with the bullies, cultivate their empathy and let them know the consequences of their behaviors. Anyone who bullies will get bullied later. You can talk to them like this, 'I know that every student loves the teachers and the teachers also treat the students like their own children. But if the students hate each other, the teachers will be very sad. It is my fault as a teacher that I did not teach you well. I am sorry that I did not do a good job to let you know what is right and what is wrong. I beg you all not to hate each other and stop bullying each other.' If you use the no-blame approach, children's compassion towards the victim will arise easily.

Ajahn Suksan also shared his insights about how people can transform deep-seeded hatred:

You need to plead to your students to be compassionate and forgiving. You can tell them that you love them as much as the victim. To teach them forgiveness, you may organize a Forgiveness Day. We (monastics) do that every week in Wat Chomthong. The students and teachers gather together and ask for forgiveness from each other. This can clear up the bad feelings accumulated.

I followed the teachings of Ajahn Suksan and implemented his recommendations in my classroom. It took some time for other students and parents to change their attitude towards the victim. Most students stopped their hurtful behaviors. The learning atmosphere in our classroom improved after that. There was more laughter in the classroom and I felt that students could focus better. The positive changes in our classroom had a ripple effect in our school community. Because of this bullying case, a committee member of the school administration and I formed an anti-bullying task force to tackle the bullying problems in school and offered support to the victims and their family members. A few co-workers became interested in mindfulness practice and explored the possibility of using it as a pedagogical tool to improve classroom learning atmosphere.

1.10 *Understanding Impermanence, Non-Self and Unsatisfactoriness*

In February 2013, I returned to Wat Chomthong to complete my foundation course. I stayed there for 9 days. In the last three days, I needed to complete the three-day determination exam. The goal of this examination was to see the truths (impermanence, non-self and insubstantiality) of the body and mind. Below is the vignette that describes my first experience in understanding the truth of impermanence:

I realized most of these thoughts were imaginations or opinions. The minds associated with these opinions kept appearing and falling. They kept changing too. Sometimes I had faith in my teachers, but sometimes I doubted them. Sometimes I like my friends, but sometimes I didn't. It was as if I had multiple personality disease. The mind appeared and disappeared so fast, including the mind that acknowledged or knew things. All these minds are impermanent. (Transcript of hand-written journal entry, February 7th, 2013)

Impermanence and non-self are two sides of the same coin. When I understood the impermanence of the mind, I began to understand non-self principle as well. I describe this process of knowing the non-self principle in the vignette below:

All desires kept coming and going so fast that I did not know what to do. Sometimes I walked into the restroom. Then I suddenly changed my mind and sat down. I felt these desires pushed me to do different things .... I sat down on my bed, shivering with fear. All opinions and beliefs that I had before are not real. They kept changing. That means, I don't have any belief or opinion whatsoever. All these beliefs and judgments are all delusions. I don't have a permanent self. (Transcript of hand-written journal entry, February 7th, 2013)

When I first experienced the insight of non-self, it was a shocking experience for me. However, after practicing for a while, the insights began to sink into my heart and I gradually let go of my desire to control the body and mind. I learned from the first day that this exam was about letting go the desire to control. The bodily functions, feelings, memories, defilements, or mindfulness are all conditioned and uncontrollable. When I practiced, no matter how hard I worked, the outcome was not predictable. I could not make progress just because I wanted to. Hence, expecting anything to be changed or happen is greed.



On the second day of my exam, my practices became less intentional and easier. I felt more confident to pass the exam. As the mind accumulates more energy, I saw more refined details in the mind and gained deeper understanding of the impermanent nature through seeing the birth and death of the mind. The following vignette describes the phenomena that I experienced in the last few hours of the second day:

I saw a chain of sparkles blinking, like Christmas lights, whenever I practiced sitting meditation. Sometimes the sparkles popped up and hurt my head. I did not know what happened until I observed one of my outbreaths accidentally. I realized the knower of the mind that acknowledged the breath appeared and disappeared rapidly. Even the consciousness that observed just one breath was not continuous. The chain of sparkles is the birth and rebirth of the minds. When a feeling is acknowledged by the knower, it vanishes immediately without forming into judgments. (Transcript of hand-written journal entry, February 8th, 2013)

The last day of my examination focused on cultivating loving-kindness towards self and others. My mind was constantly filled with compassion and mercy on that day. All cruel judgments or criticisms that I had about the others were based on the belief that everyone can control the mind. When I realized I could not even control my mind, I had more compassion for the others. When people suffer because of greed, anger or ignorance, we will hurt them more by judging them. Without mindfulness, we keep hurting each other and perpetuate the vicious cycle. When we forgive, and let go, the only thing that is left in a relationship is true love.

In the last few hours of my examination, I experienced the separation of body and mind. This experience came from the penetration of non-self nature of phenomena. Below is an excerpt about my experience:

At about 11:30 pm, I was exhausted after hours of walking and sitting meditations. I let go all my intention and desire to succeed ... After a while, the mind acknowledged the breathing and the touching points automatically without any effort. The body became very far away from the mind. All the pain and fatigue were gone. I was not asleep because I could still hear the little noises around me. Suddenly, I did not feel the body anymore. Everywhere became bright, peaceful, silent and empty. There was no birth or death of thoughts in the mind. I acknowledged the joy. The mind entered in and out of the state several times. When I finished the

sitting meditation, the fatigue and pain were completely gone ... That happiness and satisfaction were so great that could not be described with words. (Transcript of hand-written journal entry, February 9th, 2013)

#### 1.11 *The Value of Mindfulness in Facing Difficulties*

My experience in Wat Chomthong was life changing. In the past, I was day-dreaming most of the time without being truly present. My mind was constantly fluctuated between happiness and sadness, or comfort and discomfort. It always tries to escape from suffering and hold on to happiness. However, through mindfulness, I realized there is a healthier way of relating to feelings. It is possible for us to live above thoughts and emotions. Mindfulness, just like other things, will not stay forever. But having a taste of it helps me realize how to come back to myself when I face difficulty.

#### 1.12 *Mindful Way of Teaching*

My experiences in Wat Chomthong provoked me to re-examine the goals of education. Most of the time I focused mainly on covering the formal curriculum and maintaining the daily routines in the classroom. This is the case for most schools in our modern education system as well, focusing mainly on accumulating knowledge and developing cognitive skills. However, education is not just about survival or accumulating materials. It is also about knowing ourselves, connecting with others and nature, and finding our place in this cosmos.

My deepened understanding of suffering helped me cultivate more compassion towards my students. A lot of times I felt that many students are quite helpless. They make mistakes because they do not know what they are doing. Life is difficult enough without added suffering from teachers. If teachers can stay calm and correct students' mistakes without judging them, students will respect that.

#### 1.13 *The Importance of Early Intervention*

I used what I have learned from Wat Chomthong and integrated it with Plum Village practices in the mindfulness training program for my students. I conducted the second research project on mindfulness and emotional intelligence with researchers from Thammasart University and Bangkok University. The mindfulness training was conducted in my homeroom, the grade 4 classroom in 2013. We extended the mindfulness training course to one year. A lecturer from Bangkok University joined the research team and taught the same course to a group of undergraduate students. The findings indicated that

many participants from both groups reported some positive changes in their emotional intelligence after the training. However, grade 4 students indicated higher overall improvement in their post-intervention self-report survey than the college students. We proposed that mindfulness practice may be more effective when it is introduced since childhood. We presented the findings at IACSIT International Conference 2013, Paris, France (Jarutawai, Lowsuwansiri, Taechamaneesathid, Tangsangob, Wong, Vasuratna, & Chongphaisal, 2014).

#### 1.14 *Wisdom Training*

Vipassana meditation in the Mahasi Sayadaw tradition is great for beginners to build a good level of mental stability through mental noting. However, after completing the foundation course, I realized that mental noting made the mind busy with thoughts because it happens after a mental phenomenon and the mind had to find a word to interpret that experience. Moreover, the effects of my meditation practice did not transfer to my daily life.

My husband then introduced Luangpor Pramote's podcasts to me and said his teachings are well-structured and more suitable for modern life. Luangpor explained that most temples in Theravada Buddhism teach practitioners to practice Samatha (using concentration to lead mindfulness). However, in this digital age, most people have a busy and scattered mind. Hence, Luangpor recommended urban people to cultivate wisdom through daily life self-observation that leads to the accumulation of momentary concentration. Luangpor said the key to make progress in mindfulness practice is to become aware of the body and mind in daily life activities.

#### 1.15 *Defining Wellbeing*

In the past five years, I listened to the English version of Luangpor Pramote's Dhamma talks occasionally. I attended his live Dhamma talks every month at his temple, Wat Suansantidham or in Bangkok. In Bangkok, Luangpor's assistant teachers organized a one-day mini retreat every month for followers. Occasionally, I reported my meditation progress to his teaching assistants, and they gave me some guidance on how to develop further. I gradually engaged with the community more and understood how they see the world. For Theravadans, understanding suffering is the key to happiness and progress toward enlightenment. They believe that this world is a manifestation of defilements, and we were born to this world because of our craving for sensual pleasures. However, they believe that happiness from sensual pleasures is insubstantial. They are seeking the highest level of happiness from complete freedom from Samsara. Luangpor said practicing mindfulness is the only path to see the true

nature of the body and mind. Jess Koffman (i.e., Ajahn Jess), Luangpor's long-time student and my mentor, gave further explanation about the purpose of mindfulness practice in a cogenerative dialogue:

I would say that the mindfulness in the west that's being applied is a Samatha practice. It's a practice of sustaining attention, whether it'll be adding an emotion, or trying to make it go away, or embodied to feel peaceful, and that cannot fully be reliable. But when you are good at sustaining attention, of course you won't be good at it all the time, because sometimes you are too stressed, too busy, it's not something that is completely reliable ... The mindfulness that Buddha taught, that gives us the wisdom, the mind does not get upset or waver for negative results. So, it won't be about the world having good results all the time. (Transcript of audio-recording, January 5th, 2020)

According to Koffman, the value of mindfulness is about how we can face difficulties with equanimity in an imperfect world. For Theravadans, equanimity is a wholesome state that is beneficial to our physical and mental wellbeing.

#### 1.16 *Authenticity*

Equanimity is the outcome of practicing in the Middle Way, that means, not to indulge or to control. Understanding the Middle Way is the main objective of Luangpor's teachings. In the past, Ajahn Prasan, Luangpor's teaching assistant, mentioned a few times that I had been too controlling or intentional in my practice. However, I did not know how to practice without controlling. Until one day in the international retreat in Sri Ratcha, I had a conversation with Ajahn Prasan. It helped me become aware of my habit:

*Prasan:* Do you know why you want to practice Vipassana?

*Wong:* Because I enjoy the practice.

*Prasan:* No, not at all. It is because you want to be a good person.

*Wong:* (surprised) But ... I thought I enjoyed it.

*Prasan:* You have been forcing yourself to practice and that's why you experience headache. I feel sympathy for you. (Then I recalled many times in the past that I felt bored or even tortured to practice. I felt so shocked that I could not speak for a while.)

*Prasan:* We cannot be moral or perfect all the time. You don't need to beat yourself up when you have immoral thoughts.

*Wong:* Sometimes I feel that I am a hypocrite because I have so many mean thoughts.

*Prasan:* At least you know that. That's good enough.  
(Transcript from hand-written journal, December 15th, 2018)

On the day after talking to Ajahn Prasan, I began to understand the non-self nature of the mind in a deeper level. I walked around the courtyard in front of the temple before Lunagpor's Dhamma talk. I contemplated Ajahn Prasan's words for a while and began to feel sorry for my mind. All these years I have been imprisoning the mind and forcing it to be moral and peaceful. I did not allow it to feel bad and so it became stagnant. I felt compassionate towards the mind and began to cry. I wished the mind to be free one day.

#### 1.17 *Impermanence of Happiness*

On December 1st, 2019, I invited Ajahn Jess to give a Dhamma talk to my colleagues and friends at Kasetsart University. Part of his talk that jumpstarted my mindfulness practice was about the impermanent nature of happiness. He said most of us are missing the main way to be happy, and instead are relying on an unreliable kind of happiness. For example, we try to get a state of happiness through earning a certain amount of money, having a family and people we love in our life, and maybe having some fun and exciting things to do, and we just want to stay like that forever. We hope that life is going to be good and happy. However, what we end up is having an unreliable kind of happiness, or sensual desire happiness. This is a kind of happiness on stilts. As one of the stilts got pulled away, life tragedy happens or sickness happens, the happiness is gone in just a few moments. He said there is a much easier and more reliable kind of happiness, which is from seeing the truth, not through concepts, thoughts, beliefs or faiths. When we see the body and mind as what they are, which does not have a self, there is no problem.

After listening to Ajahn Jess' talk, I became aware of the constant craving for happiness lurking in the background of all my thoughts and actions. Below is a vignette of our conversation about my experience:

*Wong:* I have been observing the fabrication of the mind. It keeps *fabricating* and then I saw that behind that ... there is this craving. And I thought that I was a really happy person. But then I think lately I've seen that and ... oh ... actually the mind fabricates things because I was not that happy or secure inside. So that's why the mind needs to fabricate some ... some happy things to entertain myself ...

*Jess:* To entertain yourself. That's right. We aren't the mind. The mind is something ... it's an entity of some kind that isn't us. But it believes that it's a self, because it hasn't become wise yet. That's why we work

on seeing it isn't a self. But it doesn't want you ... in a sense ... it's like it doesn't want you to see it, so it keeps you entertained. It keeps you busy, thinking about this, thinking about that so that you don't ... as it happens what it does. So that it uses this body and it uses all our faculties to stay entertained.

(Transcript of audio-recording, January 5th, 2020)

After reporting my progress, both Ajahn Jess and Ajahn Prasan suggested that I should observe the rising and falling of all phenomena with a nonjudgmental attitude. Impermanence is the common characteristic of both wholesome and unwholesome states, and thus all phenomena should be given equal value in our practice. Although I knew this in theory, in practice I could not see defilements as impermanent and non-self. I suffered a lot because I could see cravings more clearly and frequently throughout a day and could not shake them off.

#### 1.18 *Experiencing Equanimity*

On May 20th, 2020, I had a cogen with Ajahn Malee, Luangpor Pramote's teaching assistant. Despite her busy work life as the owner of five companies and a mother of three children, she spends two to three hours on formal practice every day. Her life story motivated me to practice harder. Her recommendations for my practice were similar to those from Ajahn Jess and Ajahn Prasan. She said I did not have enough mental stability and suggested that I should spend more time on formal practice. Towards the end of the meeting, she said, "Rhoda, just be yourself."

In early morning on May 23rd, I decided to follow the example of Ajahn Malee, got up and practiced walking meditation. I pondered Ajahn Malee's suggestion, "just be yourself." I wondered if there is no self, then how can I be myself? What made up a self? I witnessed the defilements rise and fall. Then a defilement is not a self. If it is a constant self, it will not disappear. Suddenly, the mind woke up. I have been deceived by defilements. I have hated them because I fear that they are me. I saw how frequently defilements arise and they whispered, "See how bad you are. You are constantly craving. And you cannot do anything about us." But then I realized they really are not who I am, instead they have been covering the pure mind, the untainted mind. I experienced a great feeling of relief. A big burden was thus lifted from the mind. The mind became joyful, light and nimble, just rise and fall without any weight. A big smile appeared naturally on my face without any effort and I couldn't help smiling. All these years I have been carrying the burden of wanting to help myself out of suffering and wanting the others to be out of suffering. But this

approach was wrong. Happiness is already here now. There is no need to help the self out of suffering. I am non-self, the Dhamma, and the rising and falling of physicality and mentality.

I must have been walking for 30 mins when I realized the alarm clock had stopped. So, I walked to the cushion with a feeling of awareness and lightness. As I began to sit, the heart suddenly pumped very heavily, the whole space around me shook for a few moments, and I felt a puff of cold wind behind my neck. I felt something inside the heart was cooling down. I did not know what happened. Something has changed in me. I felt a sense of equanimity inside and around me. Then I became completely aware of every little bodily movement, like the eye twinkled, the fingertips moved slightly and the breaths were light and slow. I couldn't move because the mind saw the desire to move rise and then immediately disappear. I sat there with a feeling that this body was not mine for another 20 mins. The mind was blissful and peaceful. until I fell asleep.

After I woke up, I saw myself in the mirror. The person in the mirror was not me, not a person. It was emptiness. The body was distant. Defilements, like desire, or irritation, are still there, but did not bother me at all. Now I understood why Buddhists value equanimity more than the happiness from satisfying sensual pleasures. Equanimity heals our existential lack, the constant craving for more.

#### 1.19 *Ripple Effects of Mindfulness Practice*

Since 2019, I have been a full-time PhD student in science education and continue to conduct research on mindfulness, wellbeing, literate citizenship and sustainability. This year there is novel corona virus pandemic. Many citizens in the world have been suffering from stress and anxiety and there is an increasing amount of social unrest in many countries. Hence, I have been conducting a weekly online forum called *Facing Crises with Equanimity* as part of the intervention of my thesis research study. The forum aims to introduce mindfulness practice to my former colleagues and other educators in the world so that they can overcome this challenge. I believe that education and mindfulness practice should not stop just because our school was closed. In fact, our job as educators is more important than ever right now because we are the change agents in society, who shape culture through our sharing of knowledge and wisdom.

The participants in the forum include educators and scientists from various countries, including Thailand, Hong Kong, Singapore, the United States, and Nepal. Since March 29th, 2020, we have had 13 cogens, covering topics such as stress management, self-compassion, mindful communication, dealing with uncertainty, handling racism, cultivating equanimity and observing aversion.

I hope through providing a platform for educators to discuss salient social issues, to share insights and to cultivate collective mindfulness, we can find the appropriate solutions to heal the world.

#### 1.20 *Lessons Learned from Three Buddhist Knowledge Systems*

Conducting this autobiographical study has been a rewarding experience for me because I have recalled many critical incidents that I experienced in my mindfulness practice in the past and critically reflected on how these experiences had shaped the way I learn about myself, my worldview and my values. I have attempted to show to other educators how an autobiography can be a useful tool for understanding their ontology, epistemology and ontology, which shape their being, their teaching and learning practices, and ultimately their wellbeing.

My journey in mindfulness practice follows the framework of Threefold training. It includes morality, mental stability and wisdom. Although the principles sound similar across different Buddhist lineages, the foci of their practices vary and are suitable for different temperaments. For example, the Five Mindfulness Training of Plum Village focuses on ethics and morality development; Vipassana meditation in the Mahasi Sayadaw tradition is based on Four Foundations of Mindfulness, focusing on the cultivation of mental stability. Vipassana meditation from Luangpor Pramote's lineage in Thai Forest Tradition focuses on the development of wisdom that penetrates the three perspectives of existence (i.e., impermanence, non-self and insubstantiality). As I explored each knowledge system, I became aware of my preexisting ideologies and suspended my judgments so that I could fully embed myself in the community. At the same time, I was aware of how the interaction amongst the ontology, axiology, and epistemology underpinning each knowledge system may influence the way its followers define the 'truth.' Even within a Buddhist sect, the worldviews and beliefs of practitioners vary, for example, some practitioners may have more polysemic views than others. Through interpreting my life stories systematically, I draw insights from my past experiences and connect them with my present experiences. I realize every knowledge system that I have embedded in has contributed to my awakening, healing and liberation.

The Five Mindfulness Training and Gathas of Plum Village have given me a blueprint to live my daily life with morality. Thich Nhat Hanh sets a higher standard for each of the original five precepts taught by Lord Buddha and guides his followers on how to consume, love, listen, speak, and act in the middle way. Thay is a great role model and inspiration for many teachers and all global citizens because of his work in advocating world peace, social justice, environmental conservation and applied ethics in education. Thay's work has



ignited many people's interests in Buddhism. Slowing down, being present, and adopting a nonjudgmental worldview has allowed me to gradually heal myself by being present in the process of teaching, learning, playing and living.

The mindfulness practice in the Mahasi Sayadaw tradition is a systematic way to cultivate mental stability, through meticulously acknowledging each physical or mental phenomenon that happens in real time. The Four Foundations of Mindfulness is a good starting point that guides me concerning which phenomenon I should focus on in my practice. Engaging in this kind of practice helps me set a strong foundation for wisdom cultivation in the future. I learned from Ajahn Suksan about the importance of cultivating awareness, compassion and wisdom in a school community. My experiences in the three-day determination exam allowed me to have a glimpse of the impermanent, non-self and unsatisfactory nature of the body and mind. The shift in consciousness was so profound that my worldview had completely changed, in terms of my relationships with thoughts, emotions, consciousness, with others, and with the cosmos. Through understanding that transient nature and similarities of all living things, I have learned to take life less personally, to empathize with others, and to live with compassion.

Morality and concentration are the foundations of mindfulness and are vital for cultivating a moral and quality life. However, for Theravada Buddhists, this is not the highest human potential. Vipassana in the Thai forest tradition is for the attainment of enlightenment. Theravadans believe that the way to end suffering once and for all is through wisdom cultivation. Because of the loving kindness of Luangpor Pramote and his assistant teachers, I learned how to live with authenticity. I learned to see defilements as they truly are and embrace them with an equanimous attitude, which is vital for reducing suffering. Experiencing the happiness from equanimity briefly has awakened me from the delusion of sensual desire happiness and allowed me to see a higher level of wellbeing.

This autobiographical study is a single translation of earlier events in my life and by no means is the only truth. My interpretation of events is based on my existing perceptions and beliefs. However, it allows other educators to understand where I came from, what I have been doing and how I have arrived at this present state of being. I intended to invite readers to experience my journey from a first-person perspective and take away what may be useful for their journeys.

#### 1.21 *Looking Back: A Multilogical Study*

Before I began my PhD study, I did not know anything about authentic inquiry. I am a teacher, who has deep concerns about the wellbeing of myself, students,

and colleagues. After healing myself gradually through mindfulness practice, I decided that it is an important skill that everyone should learn. I applied what I have learned in my daily life and teaching practices, and then shared my knowledge with others. As a psychology graduate, I am fully aware that reality cannot be separated from the mind, that is, the observer and the observed co-determine each other. Because of such 'knowing in the conditions of knowing', I always have 'radical doubt' towards my beliefs as well as the beliefs of others. Bourdieu and Wacquant (1992) defined radical doubt as a radical questioning and suspension of beliefs. It is my compassion and radical doubt that drive all of my research projects on mindfulness education and also my exploration of multiple knowledge systems. I believe that it is important to undertake research, to constantly test my beliefs, to evaluate my practices, and to improve my mindfulness curriculum. Because of the above ontological and epistemological beliefs, I have been adopting authentic inquiry as my teaching practice and lifestyle without knowing. I believe that there are probably many other teachers like me, who have been conducting authentic inquiry all along without knowing the theory behind this research methodology. Therefore, I intend to show other teachers the theory as well as the practice of authentic inquiry based on my lived experiences.

My previous classroom research projects as well as this study have several key features of authentic inquiry. For example, the overarching framework of this study is emergent and contingent because it is an ongoing project that unfolds and responds to the salient events in the school community. It is also event-oriented as the selected narratives are the 'spikes in the curve', that is, the most critical incidents that have triggered transformations.

This study incorporates a multilogical approach because I have been living and learning in various knowledge systems which challenged my preexisting equilibrium and worldviews. The disequilibrium resulting from the challenge allows me to become aware of what I was previously unaware of and catalyzed individual as well as collective transformations.

I use an autobiographical approach in this study and, as a consequence, the research involves reflexive hermeneutic phenomenology with an historical perspective. The study incorporates mindfulness practice as reflexive intervention that enhances self-awareness and awakening. Such an approach aligns with authentic inquiry because it facilitates the process of learning about myself, others, and associated institutions like my school community and co-researchers from other universities who are involved in the research.

I employ two dialectical relationships, teaching | researching and teaching | learning. For the teaching | researching relationship, I incorporate what I am learning from ongoing research in my teaching while providing a context for

additional research. Each research project is built on what is known from the previous studies and moves towards the direction of increasing synergy of what I have learned. For the teaching | learning relationship, through teaching others my understanding of mindfulness practice deepens and as my learning deepens, I can empathize with others better and improve my teaching practices.

The main goals of this study are to achieve ontological, educational, catalytic and tactical authenticity (Tobin, 2015). Through unveiling the ontologies of various knowledge systems, I intend to display the beauty of diversity and many paths that serve the same purpose, that is, freedom from suffering. This research seeks to educate all co-researchers through becoming aware of our mindless ways of living and adopt a more mindful and healthier lifestyle. This study also shows that teachers can close the gap between theory and practice through various forms of self-study (e.g., mindfulness practice, autobiography, hermeneutic phenomenology). My autobiography demonstrates ripple effects because it describes my journey from individual awakening, changes in teaching and learning experiences to real world application of my knowledge and transforming collective experiences of a wider community in society. In my current research project, I synthesize the knowledge and practices I learned from different knowledge systems and create tools that are practical for teachers, parents and every global citizen to practice every day and everywhere for cultivating a healthy and sustainable lifestyle. I believe that every teacher is a powerful change agent who can catalyze positive changes in the school community and society, if they are willing to share their knowledge, experiences, wisdom, and compassion with others.

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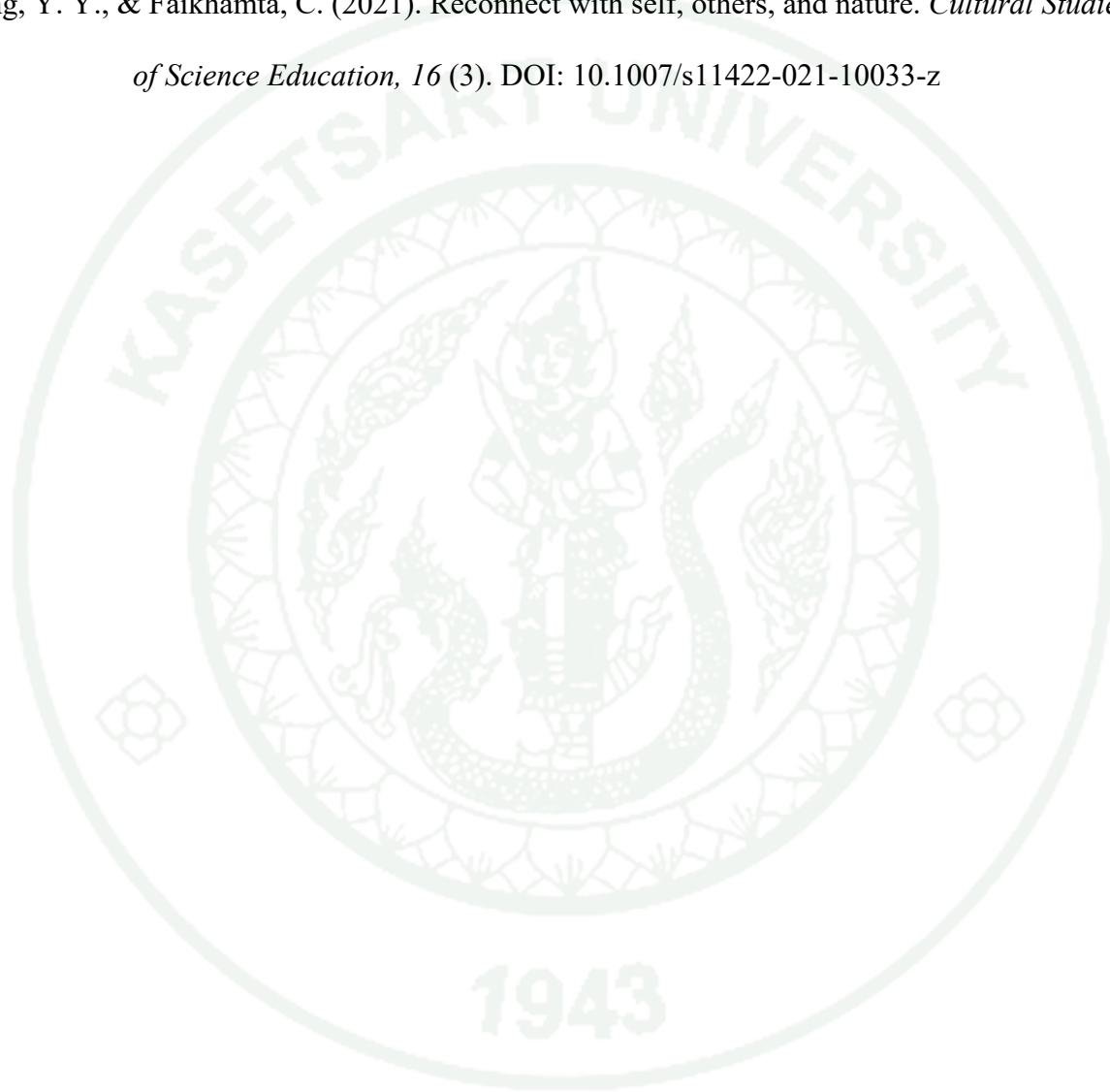
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**Publication 2**

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1 ORIGINAL PAPER



2 **Reconnecting self, others and nature**

3 **Yau Yan Wong<sup>1</sup> · Chatree Faikhamta<sup>1</sup>**

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6 **Abstract**

7 Modern lifestyle that is based on ideologies such as consumerism, individualism and mate-  
 8 rialism has led to overconsumption, mass extinction and climate change in the world and  
 9 threatens the wellbeing of every member on this planet. An increasing number of studies  
 10 indicate that mindfulness practice may address the socio-ecological challenges of sustain-  
 11 ability through nurturing a non-dualistic worldview, empathy and compassion. This study  
 12 adopts a hermeneutic phenomenological approach to explore how the philosophy and  
 13 practice of mindful consumption and the insight of interbeing might contribute to a more  
 14 connected and conscious community. We include the first-person narratives from a female  
 15 British teacher-researcher, who used what she had learned from the Plum Village monas-  
 16 tery to develop a mindfulness program for elementary school students, parents and teachers  
 17 in a Thai public school for the past 11 years. Her story unveils the issues regarding differ-  
 18 ent perspectives of mindfulness among various wisdom traditions, and the challenges in  
 19 teaching and researching mindfulness practice as a foreign lay practitioner in Thailand. We  
 20 concluded that embracing polysemia and respecting the existence of every human being,  
 21 animal, plant and mineral of the whole ecosystem is vital for meaningful transformations at  
 22 individual and societal level.

23 **Keywords** Mindful consumption · Interbeing · Sustainability · Science education

24 **摘要**

25 基于消费主义、个人主义和唯物主义等意识形态的现代生活方式已导致世界范围  
 26 内的更多不平等、过度消费、大规模灭绝和气候变化，并威胁着地球上每个成员  
 27 的福祉。越来越多的研究表明，正念练习可以通过培养非二元论的世界观，同  
 28 理心和慈悲心来应对可持续性的社会生态挑战。这项研究采用诠释学、现象学方  
 29 法来探索一行禅师的梅村禅修中心的哲学和正念练习如何为更紧密联系和有意  
 30 识的社区做出贡献。文中包括一名英籍女教师以第一人称叙述她过去11年一直

A1 This manuscript is part of the special issue contemplative inquiry, wellbeing and science education,  
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A3 ✉ Yau Yan Wong  
 A4 [yauyan.wo@ku.th](mailto:yauyan.wo@ku.th)

A5 ✉ Chatree Faikhamta  
 A6 [feduct@ku.ac.th](mailto:feduct@ku.ac.th)

A7 <sup>1</sup> Science Education Division, Faculty of Education, Kasetsart University, Bangkok 10900, Thailand

31 在泰国一家国立小学，與學生，家長和同事练习和研究梅村禅修中心的正念禅  
 32 修。故事中描述佛教不同派系对正念的见解，以及身為一名外籍教師在泰国教授  
 33 正念禅修的種種挑战。我们认为多元化思维和相互之间的洞察力，即人，动物，  
 34 植物，矿物质和整个生态系统之间相互依存的关系，对于个人和社会层面的有意  
 35 义转变至关重要。

36 主要詞語 正念消费 • 互即互行 • 持续发展 • 科学教育

### 37 **Delusion of self**

38 With the advancements in science, medicine and technology in the 21<sup>st</sup>-century, the average  
 39 life expectancy of human beings has dramatically increased. However, the growing  
 40 human population, coupled with the rising demands for comfort and convenience, are  
 41 threatening the survival of other species and the rest of the biosphere (Russell and Dillon  
 42 2010). Today, extinctions of other species are happening hundreds of times faster than they  
 43 would naturally, in large part due to various human activities like deforestation, burning  
 44 of fossil fuels, hunting, overfishing and other forms of overconsumption (Greskho 2019).  
 45 However, there is a lack of stewardship toward a more sustainable lifestyle at individual as  
 46 well as societal levels.

47 In the past, environmental researchers mainly focus on objective interactions between  
 48 natural, social and human systems, rather than individual wellbeing and lifestyle (Wamsler  
 49 et al. 2018). What they are missing is that organisms and environment are in a dialectical  
 50 relationship, in which each member of the pair presupposes the existence of the other, and  
 51 they are actively shaping each other (Bleier 2021, forthcoming in this issue). The current  
 52 environmental crisis is not just a systemic problem, but it is also an outcome of the igno-  
 53 rance of individuals about the nature of their existence. Our ego-centric lifestyle assumes  
 54 that human beings are separate from each other and from the rest of the ecosystem, and that  
 55 we have to compete against each other to get to the top of the food chain. However, if we  
 56 contemplate the nature of our existence deeply, we may notice that in every moment some  
 57 cells are dying and being replaced by new cells. Our body is exchanging gasses and sub-  
 58 stances with its surrounding environment in every moment. The same applies to our mind,  
 59 thoughts arise and cease in every second. Hence, our idea of who we are is a concept that  
 60 we impose on a mutable and conditional identity.

61 This stance of identity leads to our fear of annihilation, and our attachment or craving  
 62 for things that we identify as “me” or “mine.” The delusion of self has been promoted  
 63 by ideologies like individualism, consumerism and industrialism that dominated modern  
 64 western culture. Charles Scott et al. (2021) called these ideologies Modwest, which has  
 65 been spreading to many countries around the globe through colonization. Modwest pro-  
 66 motes distorted views that happiness is maximized through accumulating wealth, stocks  
 67 and income. Since the beginning of the industrial revolution, the speed of production and  
 68 consumption has been growing exponentially to sustain humans’ endless desires. If human  
 69 beings continue to consume mindlessly, eventually our planet could transition toward total  
 70 destruction.

71 Modwest has penetrated the foundation of our modern education system, which prior-  
 72 itizes productivity, efficiency and attainment, rather than students’ wellbeing. Bai (2019)  
 73 argued that our modern education system is dehumanizing our youth to become learning  
 74 machines that are divorced from body, mind, family, community and earth. This kind of

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75 learning environment is nurturing a lot of loneliness, stress and anger among our youth.  
 76 These damaging emotions may cause negative physiological impacts to one's body's bio-  
 77 chemical environment (Tobin 2018). An inability to manage excess emotions can manifest  
 78 into chronic psychological problems, such as alcoholism and drug addiction, that are damag-  
 79 ing to physical health. Additionally, a higher level of sympathetic functioning caused  
 80 by stress can reduce the ability of a person to listen and empathize with others. Lack of  
 81 empathy is the cause of many social problems, like road rage, racism, xenophobia and even  
 82 wars. Therefore, the ability to ameliorate an excess of emotions is an important life skill of  
 83 psycho-physiologically literate citizens. In order to heal the human race and the planet, we  
 84 need to promote an education system that overcomes ignorance, separation and loneliness.

#### 85 Mindfulness and wellbeing

86 Recently, mindfulness has been highly researched and practiced in Western education  
 87 because of its potential in cultivating awareness, concentration, wellness and wellbeing.  
 88 Kenneth Tobin (2018, p. 112) describes mindfulness as "a way of being in the world, being  
 89 in-with others and being a self that is mutable, plural and context dependent." Mindfulness  
 90 is enacted in daily life through being present, maintaining focus, showing compassion for  
 91 self and others, being honest, fair and dependable in social interactions, and serving as a  
 92 steward to foster healthy lifestyle locally, globally and beyond. The research studies under-  
 93 taken by Tobin and his colleagues aim to develop educational toolkits for citizens across  
 94 the age spectrum to enhance wellness and to ameliorate excess emotions through contem-  
 95 plative practice. For example, they designed self-help tools, including a breathing heuristic  
 96 (i.e., statements for heightening awareness of salient characteristics of a construct) and Jin  
 97 Shin Jyutsu's soft touch therapy, for harmonizing the body and mind. Their research work  
 98 led to an expansion in the number of research studies that applied meditation and mindf-  
 99 ulness in college and K-12 schools. For example, Malgorzata Powietrzynska et al. (2015)  
 100 and Konstantinos Alexakos et al. (2016) implemented mindfulness heuristics in college  
 101 classrooms to create a safe and healing social space for cogenerative dialogs about socio-  
 102 cultural issues.

103 This study is based on the story of Diana (pseudonym), a British science teacher working  
 104 in a Thai public school for the past 11 years. In this paper, we begin with Diana's encounters  
 105 with a Zen master, Thich Nhat Hanh and his students within the Thai Plum Village monas-  
 106 tery. Then, we describe Diana's journey in practicing and researching mindfulness with her  
 107 students, colleagues and parents at her workplace, including the triumphs and challenges that  
 108 she has faced as a Western teacher-researcher teaching mindfulness in a Theravada Buddhist  
 109 country. Similar to the work of Tobin and his colleagues, Diana's work aims to promote emo-  
 110 tional intelligence, wellbeing and sustainability among her community through the practice of  
 111 mindful consumption. The overarching framework of this study is authentic inquiry, a research  
 112 methodology developed by Tobin and his colleagues that aims to bridge the gap between the-  
 113 ory and practice (Tobin 2015). Authentic inquiry is based on a belief that an inquiry should  
 114 be transformational, educational and practical for the everyday life of everyone involving in  
 115 a research study. Hence, in authentic inquiry, every participant is encouraged to share their  
 116 new knowledge with their communities and catalyze ripple effects. We address the follow-  
 117 ing question: how can an understanding of interbeing through mindfulness practice contrib-  
 118 ute to a more reflective, connected, compassionate and ecologically responsible community?  
 119 Our inquiry is grounded in hermeneutic phenomenology (Ricoeur 1990), an approach that is



120 deeply contextualized, personalized and emphasizes lived experiences of a phenomenon. The  
 121 following sections include mostly Diana's first-person narratives, concluding with reflections  
 122 about the implications of her lived experiences.

### 123 **I have arrived**

124 Life can be quite confusing if we don't know ourselves. Without knowing the nature of this  
 125 body and mind of ours, we wander in life like a lost soul. I was like that before. Although I had  
 126 everything in other people's eyes, I was unfulfilled. I wanted more, I wanted to be more and I  
 127 wanted to do more. I have been carrying this attainment-driven attitude throughout my school  
 128 life as well as work life. In my late 20s, I noticed that the stress from striving to reach the top  
 129 and working non-stop was harming both my physical and emotional wellbeing. I realized that  
 130 this kind of lifestyle was not sustainable. After working in my home country for 3 years as a  
 131 primary school teacher, I moved to Thailand and began my spiritual journey in mindfulness  
 132 practice.

133 I have been working as a foreign science teacher in a public school in Thailand since 2009.  
 134 One day in 2010, a colleague invited me to join A Day of Mindfulness at the Thai Plum Vil-  
 135 lage International Meditation Center, which was founded by a Vietnamese Zen Buddhist mas-  
 136 ter called Thich Nhat Hanh or Thay (teacher in Vietnamese). Zen Buddhism is a school of  
 137 Mahayana Buddhism that originates from China during Tang dynasty and focuses on being  
 138 present, meditation and intuition. Upon arrival, a monk saw me and asked, "What brought you  
 139 here?" I said sheepishly, "I am actually a Christian. But I want to learn about my husband's  
 140 religion, Buddhism." He smiled and nodded, "Good, good. It is good to be a Christian. I am  
 141 happy that you are here." To my surprise, he did not try to convert me to be a Buddhist. His  
 142 warm and open attitude really impressed me.

143 At that time, the meditation center was still under construction. There were a few straw huts  
 144 for the monastics. The monastics grew their own food in the organic farm. After breakfast,  
 145 Thay led a short walking meditation around the mountain. My friend told me to take off my  
 146 shoes during the practice and I felt surprised by the connection between my bare feet and the  
 147 ground. Thay said it was a miracle that we could walk on Earth and walking meditation was  
 148 like kissing the Earth. For some reason, I felt very present and peaceful walking behind Thay.

149 Thay gave a talk after the walking meditation. He recounted his life as a teacher, a monk,  
 150 and peace activist during the Vietnam War. He said the essence of Buddhist practice is trans-  
 151 forming suffering into happiness. Our society is obsessed with obtaining and achieving more.  
 152 However, he said liberation lies in the present moment and life is only available now. There-  
 153 fore, we practice mindfulness so that we have the capacity for real happiness. He pointed at a  
 154 poster on the wall with a quote, "I have arrived." He asked, "Where is your mind now? Has  
 155 it arrived at the present moment?" At that moment, I recognized that the wanting inside me  
 156 stopped when I was present.

### 157 **Understanding mindfulness**

158 I read many of Thay's books after visiting the Plum Village. In one of his books, Thay  
 159 defined mindfulness as 'remembering' in the sense of constantly 'remembering to come  
 160 back to the present moment', "to stop", and "to maintain awareness of the object' (Hanh  
 161 2012, p. 117). Thay explained that mindfulness is always being mindful of something and  
 162 there are four areas where mindfulness has to penetrate in order for us to be protected, for

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163 joy to be nourished, for pain to be transformed and for insight to be obtained. These four  
 164 areas are called the Four Establishments of Mindfulness, including body, feelings, mental  
 165 formations (i.e., thoughts and emotions) and perceptions (i.e., interpretation of the form,  
 166 feelings and mental formations) (Hanh 2012).

167 Thich Nhat Hanh and Katherine Weare (2017) mentioned that the problems of the mod-  
 168 ern education system come from an overemphasis on attainment and dualistic thinking.  
 169 They argued that there is an increasing emphasis on educational targets. Teachers, students  
 170 and parents suffer because they are always busying doing forward-planning, instead of  
 171 being present in the here-and-now. Hence, there is a sort of loneliness and a vacuum that  
 172 they have to fill it up with entertainment or materials. However, mindfulness offers relief to  
 173 this driven-ness by bringing people back to here-and-now, while letting go of the need for  
 174 constant forward-planning.

#### 175 Interbeing

176 The Plum Village's mindfulness practice includes three aspects, including self, society  
 177 and ecology. In Thay's (2011) book entitled *Planting Seeds—Practicing Mindfulness with*  
 178 *Children*, he said the first step in mindfulness practice is to take care of ourselves through  
 179 practicing mindfulness in daily life activities. The second step is to take care of our rela-  
 180 tionships through deep listening and living speech. The third step is to take care of our  
 181 community, including people, animals, plants and minerals, through mindful consumption.  
 182 They encouraged us to see how our existence is dependent on everyone and everything  
 183 around us.

184 As we see everything as interdependent on each other, we gain the insight of *interbe-*  
 185 *ing*, that is, the Buddhist principle of dependent co-arising (Neumann 2017). Dependent  
 186 means relying on each other. Co-arising means arising together, simultaneously. Depend-  
 187 ent co-arising addresses the complex, interpenetrating and interconnected cause-and-effect  
 188 relationships within oneself, with others and with the world. It means that nothing arises  
 189 independently and stands on its own. When we understand that our existence and wellbeing  
 190 are not separated from everything in the environment, we understand that causing harm to  
 191 others is the same as causing harm to ourselves.

#### 192 A day of mindfulness

193 In order to deepen my understanding in mindfulness, I have attended A Day of Mindful-  
 194 ness in Bangkok every month for about two years. The purpose of the event is to allow  
 195 practitioners to get away from their urban living and experience mindfulness in simple  
 196 daily activities. Many participants come with their children. They also stresses the impor-  
 197 tance of nurturing collective mindful energy within a community. The event usually begins  
 198 with offering alms to monks, followed by singing songs or reciting gathas, reminders  
 199 derived from the short poems written by Thay. Practicing with a gatha can help us return to  
 200 ourselves and to what is going on in the present moment. The Plum Village monastery has  
 201 composed many gathas for various daily activities throughout a day. For example, before  
 202 breakfast, we recited the *Before Eating Gatha*, making vows to consume in a way that did  
 203 not cause any harm to other animals and mother nature:

204 This food is the gift of the whole universe, the earth, the sky and much hard work.  
 205 May we be worthy to receive it. May we transform unskillful states of mind, espe-  
 206 cially the habit of eating without moderation. May we take only foods that nourish us  
 207 and prevent illness. We accept this food to realize the path of understanding and love.

208 Then, we eat breakfast with the monastics in silence. Practitioners are encouraged to  
 209 take only the amount of food that their bodies need. The food that the volunteers serve  
 210 is mostly organic or local vegan products with plenty of fresh fruits and vegetables. The  
 211 menu lets me realize that plant-based diets can be so simple and accessible. After the meal,  
 212 we recited the following *Looking at Your Plate or Bowl after Eating Gatha*:

213 The meal is finished, and I am satisfied. The four gratitudes are deeply in my mind.

214 In the afternoon, practitioners practice deep relaxation, during which they lie down on a  
 215 yoga mat and scan their bodies as they follow the soothing singing in the background. It is  
 216 so relaxing that many people fall asleep during the practice.

217 Following the deep relaxation practice, we split into smaller groups and practice Shar-  
 218 ing in a Circle. The group leader, who is usually a monk, sets some ground rules for deep  
 219 listening and loving speech. For example, before speaking, a practitioner bows to everyone  
 220 to let them know we are about to speak. Other members then bow in return. When the  
 221 speaker is talking, all others listen with all of their attention and become aware of their  
 222 inner chatter. We listen to each other with the sole intention to relieve our members' suffer-  
 223 ing in a nonjudgmental way. Our presence and compassion help others to heal their suffer-  
 224 ing and regain energy to begin anew.

225 The last activity is usually walking meditation in a nearby organic shop: learning to  
 226 be aware of our urge to purchase and buy only the things that we need. Sometimes we  
 227 would also practice walking meditation around the city park and be aware of our breath  
 228 with every step. A Day of Mindfulness showed me a blueprint for living with awareness  
 229 throughout a day.

### 230 **Mahayana Buddhism and Theravada Buddhism**

231 After practicing mindfulness in my daily life for about a year, I decided to share some sim-  
 232 ple mindfulness exercises from the Plum Village with my fifth graders in academic year  
 233 2012 to 2013. At that time, I was not aware of the differences between Theravada Bud-  
 234 dhism and Mahayana Buddhism. Therefore, I faced some unforeseen challenges in intro-  
 235 ducing mindfulness to my students. When I first proposed to introduce mindfulness prac-  
 236 tice to my students, the school administrators had a lot of skepticism about the idea. The  
 237 principal was worried that I, as a female western lay practitioner, might not understand and  
 238 deliver Buddha's teachings correctly. She asked me to submit documents to explain my  
 239 perspectives of mindfulness, detailed lesson plans, the benefits of the mindfulness train-  
 240 ing course and the associated risks. As a result, I decided to conduct an action research to  
 241 answer their questions. In my research proposal, I explained that although I followed the  
 242 practice of Zen Buddhism in my personal life, the practices that I would teach to the stu-  
 243 dents focus on the universal characteristics of mindfulness. I aimed to develop a mindful-  
 244 ness curriculum in a secular context and improve my teaching practices based on research  
 245 findings. Moreover, I intended to demonstrate to the school administrators and parents that  
 246 my research study followed the codes of ethics strictly.

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247 I began to learn more about Theravada Buddhism from reviewing literature and joining  
 248 insight meditation retreats. Theravada Buddhism, the orthodox school of Buddhism that  
 249 aims to preserve the original teachings of Buddha, is the dominant religion in Thailand. In  
 250 Thai schools, teachers usually teach students to follow five moral precepts and engage stu-  
 251 dents in Buddhist ceremonies. Many Thais visit temples and donate money and food to the  
 252 monastics regularly. However, most Thais believe that mindfulness practice is for a small  
 253 group of spiritual people and monastics only. A Thai monk from Mahasi Sayadaw tradition  
 254 once explained to me that only a small portion of people have right mindfulness and right  
 255 Samadhi to attain insight (i.e., penetrating the truth of impermanence, non-self and suf-  
 256 fering). Thus, very few Thai people actually practice mindfulness or insight (Vipassana in  
 257 Pali) meditation in their daily life.

258 On the other hand, Mahayana Buddhism aims to educate the general public to look  
 259 inward, to be present, to become moral and compassionate citizens. Monks from Mahayana  
 260 Buddhism also teach meditation, but they emphasize intuition that is expressed through  
 261 symbols and images, whereas during insight meditation, Theravadins observe the phys-  
 262 ical and mental processes to transform consciousness. A Canadian Vipassana teacher from  
 263 the Thai forest tradition explained to me that Theravadins regard contemplative practices  
 264 from many schools of Mahayana tradition (e.g., yoga, deep relaxation, body scan, metta  
 265 meditation) as Samatha practice or tranquility practice. Samatha practice aims to cultivate  
 266 calmness, peace and mental stability (Samadhi in Pali), whereas mindfulness practice and  
 267 insight meditation are for developing wisdom that leads to enlightenment. However, men-  
 268 tal stability and mindfulness co-arise and support each other. Both practices are equally  
 269 important. Hence, practitioners simply need to know their differences.

#### 270 **Reconnecting self, others, and nature**

271 A few months later, the school administration approved my research proposal and allowed  
 272 me to teach a six-session mindfulness training program during the working skills class,  
 273 which was a period for developing life skills. The main purpose of the program was to  
 274 develop students' emotional intelligence (EI), the competency to be self-aware and manage  
 275 emotions, to empathize with others and to manage relationships (Goleman 1995), through  
 276 mindful consumption. Consumption includes eating, drinking, communicating with others,  
 277 reading information from social media and any stimuli that comes through our senses. They  
 278 modified the traditional Buddhist five precepts to become the Five Mindfulness Trainings  
 279 for modern society (Table 1), a list of the principles of mindful consumption (Hanh 2007).  
 280 The study used a self-report questionnaire from the Ministry of Mental Health in Thailand  
 281 to assess students' emotional intelligence before and after a six-week mindfulness training  
 282 course. I explained the purpose of the mindfulness program to the parents and students in  
 283 a debriefing session. I promised to the participants that this program did not involve any  
 284 Buddhist ceremonies and I would not implement this program if any student did not want  
 285 to join so that those who chose not to participate would not feel ostracized. Eventually, I  
 286 obtained informed consent from all 31 fifth graders in my homeroom and their parents.

287 The lessons of the program were extracted from Thay's book, *Planting Seeds* (Hanh  
 288 2011). I taught one lesson per week. In each session, students and I practiced 3–5 min of  
 289 breathing meditation before an activity. When we practice breathing meditation, we gently  
 290 guide the mind back home to our body and reconnect with nature at the same time. I told  
 291 the children that it was a miracle for us to be alive and to be able to breathe. I also said that

**Table 1** Plum Village's five mindfulness trainings

Reverence for life	Awareness of the suffering caused by the destruction of life
True happiness	Awareness of the suffering caused by exploitation, social injustice, stealing, and oppression
True love	Learning ways to protect the safety and integrity of individuals, couples, families, and society
Loving speech and deep listening	Practicing loving speech, and deep listening to bring joy and happiness to others and relieve others of their suffering
Nourishment and healing	Cultivating good health, both physical and mental by practicing mindful eating, drinking and consuming

292 the earth nourished and embraced us with oxygen so that we can stay alive, so we are not  
293 separated from nature.

294 The first objective of the program is to guide students to take care of themselves through  
295 mindful consumption. In one of the activities of the second week, called "What am I made  
296 of?," students trace the outline of one of their friends on a large poster paper and then draw  
297 the things that have been supporting their lives, including the people around them, plants  
298 and animals, minerals, air, etc. Through this activity, they learn about the interbeing of eve-  
299 rying within them and around them. Through this activity, I hope to help students reduce  
300 the feeling of loneliness by reconnecting with the communities of other living things and  
301 the nature.

302 The second objective is to cultivate empathy and improve interpersonal communica-  
303 tions. For example, in the fourth week, students practice active listening. Active listen-  
304 ing means listening without interruption, judgment or inner chattering in the mind. It also  
305 means listening with the intention to reduce another person's suffering. I ask students to  
306 work in pairs and each student takes turns to share a happy/funny/sad event in their life.  
307 When they listen to speakers, they are not allowed to interrupt or give opinions. They said  
308 if we listen actively, we act as a mirror that reflects the feelings and thoughts to another  
309 person. That person then gets to see the truth by himself or herself (Hanh 2011).

310 The third objective of the program is to nurture students' compassion for other spe-  
311 cies and appreciation of natural resources. For example, in the activity of writing promises  
312 to nature, I take the students to the school garden and each student chooses and names a  
313 buddy tree. Students take turns to hug their buddy tree and make a vow to protect nature.  
314 The first vow is "I vow to develop understanding in order to live peacefully with people,  
315 animals, plants and minerals." The second vow is "I vow to develop compassion in order  
316 to protect the lives of people, animals, plants and minerals." After making the vows, we  
317 talk about why the Two Promises are important and how we can apply them in our daily  
318 lives. Throughout the school year, my students and I visit the school garden whenever we  
319 have time. Sometimes we hug the trees. Although the school garden is only a small area of  
320 greens in an urban school, it is an authentic place for students to learn about nature. The  
321 results from the study show that the average mean score from the post-intervention assess-  
322 ment of students' emotional intelligence indicates a slight improvement in participants'  
323 self-control, responsibility, motivation, self-respect, mindfulness, confidence and interper-  
324 sonal relationships, except sympathy.

325 From 2012 to 2013, I collaborated with the same researchers to conduct a mixed-  
326 methods study on a group of fourth graders, investigating the factors that might influence  
327 the effectiveness of a 6-week mindfulness training course in enhancing students' EI. We

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328 distributed a demographic information form and self-report questionnaires to students, par-  
 329 ents and teachers. Two graduate students came to observe my lessons and took field notes.  
 330 We inferred that participants' age, parental support, family religion and experiences of the  
 331 instructor may influence the effectiveness of mindfulness training. Moreover, younger chil-  
 332 dren are more receptive toward mindfulness training.

#### 333 **Healing difficult relationships**

334 In the academic year 2013 to 2014, I taught a 12-week mindfulness training course to  
 335 a group of fourth graders in my homeroom. As there were a few bullying cases in my  
 336 homeroom that year, I put more focus on the first two mindfulness trainings of Plum Vil-  
 337 lage, true love and true happiness. True happiness is possible when we practice the Four  
 338 Transcendent Minds, namely loving kindness, compassion, joy and equanimity. In particu-  
 339 lar, equanimity means the acceptance of everything and not to discriminate (Hanh 2007).  
 340 Hence, when we have an equanimous mind, we can live with our community in harmony.  
 341 I extend the definition of community beyond human beings and to include other animals,  
 342 plants and minerals.

343 During the activity called the Second Body System in week 4, I create a buddy system  
 344 in the classroom. I teach the children that we should care for someone else in our group in  
 345 the same way as we care for ourselves. First, I ask the class to form a circle and each per-  
 346 son takes care of the person standing to their right. Then I ask students to look after their  
 347 second body with concern and kindness. For example, if they go out to play, they need to  
 348 make sure their second body would be there. The goal of this activity is to teach students to  
 349 take care of each other in a community.

350 From week 10 to week 12, we focused on how to understand suffering and resolve con-  
 351 flicts in a community. For example, during Conflict Roleplay, students write a script about  
 352 a conflict that they had with their friends and role play it in front of the class. Following the  
 353 practice, students talk about how they communicate during a conflict through deep listen-  
 354 ing and loving speech and how they can do better to bring happiness to other students. This  
 355 exercise intended to help children learn how to let go of past grudges and reconcile with  
 356 their friends.

357 Over the course of the first semester, the severity and frequency of bullying gradually  
 358 decreased. Although not every student was interested in mindfulness practice, there was  
 359 a growing awareness about bullying behaviors and a consensus that bullying was wrong.  
 360 I shared my experiences with a few colleagues, and they implemented the mindfulness  
 361 course to cultivate compassion and wellbeing in their classrooms. Four years later, a bul-  
 362 lying-awareness committee was setup in my school and mindfulness practice was regarded  
 363 by many teachers as a tool to prevent bullying.

364 Many students expressed that they enjoyed the novelty of the mindfulness exercises and  
 365 most parents were positive about the mindfulness program. However, some parents were  
 366 skeptical about my intention of doing research in the classroom. For example, a few of  
 367 them asked if I did it for profit or for pursuing a higher degree. They said they rarely saw  
 368 teachers conduct research just for the sake of improving the quality of learning. A parent  
 369 who was an avid practitioner told me that he was not worried if I would indoctrinate the  
 370 children, but he was concerned about whether I understand "right" mindfulness in a Bud-  
 371 dhist sense. He sent me a few Dhamma books and DVDs out of good intentions and asked  
 372 me to study them before teaching my students. He explained that for Buddhists, teaching

373 Dhamma the wrong way would lead to bad karma (i.e., consequences), such as losing the  
374 chance to attain enlightenment or even going to hell.

### 375 **Building a Sangha**

376 They wrote that a Sangha is a community of mindfulness (Hanh 2011). A Sangha is power-  
377 ful because we cultivate the energy of mindfulness and compassion together to transform  
378 the community, to create a safe home for everyone to take refuge in. As I continued to  
379 teach mindfulness to my students, some of my co-workers and parents became interested  
380 in mindfulness practice. Therefore, in 2017, the school principal suggested that I set up a  
381 mindfulness professional learning community (PLC) with a few colleagues from different  
382 grade levels and met regularly on a weekly basis. We explored and implemented creative  
383 ways to bring mindfulness into our classrooms as well as our daily lives. In the beginning,  
384 I invited a Thai school counselor and Thai Buddhism teacher to join the meetings, who  
385 contributed a lot of insights from the perspective of Theravada Buddhism. However, a few  
386 foreign teachers resented the idea of associating mindfulness with Buddhism. Hence, after  
387 a while, the Thai teachers decided to leave the PLC and shared with me privately.

388 I also organized a community of parents, who were interested in practicing mindful-  
389 ness with their families. From 2018 to 2020, the mindfulness PLC offered an eight-week  
390 mindfulness training program called Mindfulness for Families twice per year. Parents and  
391 I met after school every Wednesday evening. The program starts from self-care and then  
392 extends to caring for other family members and the whole community. The key to reaping  
393 the benefits of mindfulness is to integrate it with everyday life activities. Every week, we  
394 assign daily home practice to all participants through worksheets. Participants write their  
395 experiences in a reflexive journal.

396 In the first three weeks, I introduce participants to the core practices such as mindful  
397 breathing, nature walk, and body scan. The goal is to enhance awareness of bodily move-  
398 ments throughout the day. For example, I ask parents to take their kids to a park or for-  
399 est close to their home and practice walking meditation together. As they walk around the  
400 park/forest in silence, they can enjoy the sounds from birds, insects, leaves and the sound  
401 of the breath of mother nature. I believe that getting close to nature has a calming effect on  
402 the mind and body. When we are in the middle of a forest, we feel less self-important and  
403 understand that we are just a small part of the Mother Earth.

404 The course includes lessons that focus on improving the communication among family  
405 members. For example, in an activity called Flower Watering, participants talk about the  
406 good qualities that they have noticed in each other. We sit in a circle and I put a pot of fresh  
407 flowers in the center of the circle. The flowers represent the compassion in all of us. Each  
408 participant picks a flower, talks about the good qualities of their child/parent and gives the  
409 flower to that person. After the activity, participants usually beam with joy because their  
410 flowers are nourished.

411 In the last two weeks, we practice contemplating difficult emotions. In order to look  
412 deeply into the nature of suffering, we need a good foundation of mindfulness and con-  
413 centration. Quite often, parents take it personally when their children do not follow their  
414 instructions. However, most children are just being immature and have no clue what they  
415 are supposed to do. Hence, it is important for parents to observe and understand what trig-  
416 gers their anger. For example, can anger be caused by stress from work and not necessarily  
417 by the child's misbehavior? Can anger come from parents' desire to control? When parents

#### Reconnecting self, others and nature

418 become more mindful of their emotions, they begin to transform their anger to understand-  
 419 ing and compassion. Parents need to know how to handle their own suffering before help-  
 420 ing their children to do so.

#### 421 **Ongoing debate about mindfulness**

422 Throughout the whole mindfulness project, there is an ongoing debate among teachers,  
 423 parents and my friends from the monasteries about the purpose of mindfulness practice  
 424 and the eligibility of instructors. In the past decade, I have been exploring contemplative  
 425 practices in different wisdom traditions. I learned that the core teachings of many schools  
 426 within Buddhism sound similar, but the interpretation of mindfulness, the purpose and  
 427 focus of practice vary. For example, Theravada Buddhists regard attaining enlightenment  
 428 (i.e., liberation from suffering and Samsara, the cycle of birth and rebirth) as the high-  
 429 est goal of mindfulness practice, whereas Mahayana Buddhists aim to become Bodhisat-  
 430 tva (i.e., a compassionate being that delays his or her enlightenment to serve humankind).  
 431 Theravadins believe that enlightenment can be attained through accumulating wisdom  
 432 about the true nature of body and mind, whereas Mahayana Buddhists seek to emulate  
 433 Buddha's life through perfecting meritorious deeds. Theravadins believe that Dhamma is a  
 434 sacred subject that should be taught by monastics who are highly skilled in meditation. In  
 435 some temples, only enlightened beings, who have profound understanding of physical and  
 436 mental processes, can teach Dhamma. For Mahayana Buddhism, the main focus is follow-  
 437 ing precepts and becoming a moral, and compassionate citizen in a society. Therefore, the  
 438 monks and lay dhamma teachers who are following the precepts can give dhamma talks  
 439 and lead mindfulness practice.

440 I collaborated with two certificated MBSR (i.e., mindfulness-based stress reduction)  
 441 teachers for a few years. Most of them focus mainly on the application of mindfulness for  
 442 the purpose of enhancing focus, calmness and wellbeing. Some of them also emphasize the  
 443 ethical underpinning of mindfulness practice, such as compassion, social justice, and eco-  
 444 justice. However, some Buddhist scholars such as Mark Greenburg and Joy Mitra (2015)  
 445 criticized that mindfulness is supposed to help humanity transcend self and other worldly  
 446 matters, rather than enhancing the desire for happiness. Most foreign teachers in my school  
 447 believe that mindfulness practice should be introduced to students in a secular context to  
 448 avoid indoctrination. Because of the debate surrounding the representation of "mindful-  
 449 ness," my co-teacher suggested that I should call mindfulness practice something else, like  
 450 calmness practice or self-inquiry. Last year, the new school administrators decided that it  
 451 would be better for a Thai teacher and the monks from Thai forest tradition to lead the  
 452 mindfulness training in our school. Although the mindfulness research project has ter-  
 453 minated, I continue to share my knowledge and teaching resources with other educators  
 454 across the world through writing journals and organizing online forums.

455 From my experiences, changing the lifestyle and culture of a community requires patience,  
 456 humility, empathy, compassion and letting go. In the beginning, very few people in the school  
 457 knew what mindfulness practice was or showed interest in it. It took some time for students,  
 458 parents, other teachers and administrators to notice the benefits of mindfulness. As time went  
 459 by, the program began to pick up momentum and the mindful community gradually expanded.  
 460 I have learned to remain welcoming, understanding and humble no matter how many people



461 participate or what the outcome of the training is. I regard mindfulness practice as nothing  
462 more than an opportunity for me to help others know themselves and to reduce suffering.

### 463 **A more polysemic, conscious and compassionate future**

464 Diana's story is an example of authentic inquiry, in which she constantly applied what she  
465 had learned to her teaching practices in an emergent and contingent way. She has created a  
466 learning space to address the needs of all stakeholders in her community and help partici-  
467 pants to integrate mindfulness with their daily life. Through raising her community's aware-  
468 ness of their prior and current consumption habits with mindfulness practice, she attempted to  
469 transform the worldview of participants through understanding interbeing. We anticipate that  
470 Diana's story provides practical ideas for educators to make mindfulness practice engaging  
471 and useful for the daily life of children, teachers and parents.

472 In this study, we describe and interpret the application of mindfulness practice from the  
473 Plum Village in the education of wellbeing and sustainability. However, we do not claim that  
474 interbeing is the only right way to see the world, or the only solution to all environmental  
475 problems. In fact, in order to live with every being in harmony, we need to include the voice  
476 of all stakeholders and avoid attaching to dogmatic views that divide the community. Self |  
477 non-self, compassion | enlightenment, awareness | delusion and mental stability | mindfulness  
478 are all dialectical pairs that co-arise in an interdependent way. Hence, Mahayana Buddhism  
479 and Theravada Buddhism are addressing different but equally important aspects of Buddha's  
480 teachings. Understanding the nature and various benefits of mindfulness through science can  
481 also engage western minds in the practice. However, when we hold onto a particular world-  
482 view, be it Theravada or Mahayana Buddhism, or scientism, we miss the essence of mindful-  
483 ness. It is out of the scope of this study to determine which school of thought has the truth or  
484 who should teach mindfulness. Instead, we suggest that it is important for mindfulness educa-  
485 tors to be knowledgeable about different perspectives of mindfulness, and at the same time,  
486 adopt a nonjudgmental attitude toward various interpretations and practices of mindfulness in  
487 different contexts.

488 Genuine transformation begins from becoming present and aware of this body and mind  
489 of ours. Most of us are lost in the doing and forward-planning mode, without coming home to  
490 ourselves. When we are not present, we fail to hear the voice of our children and the sound of  
491 nature. This way of being can nurture a lot of stress, anger and violence in our mind and body.  
492 Therefore, it is important for educators to give the time and space for everyone in a school  
493 community to slow down, to reconnect and to consume mindfully together. We need to look  
494 deeply into the elements that make up who we are and accumulate the insight of interbeing.  
495 When we include our fellow teachers, parents, students and everything else in the ecosystem  
496 to form a mindful community, we can harness the power of collective mindfulness from our  
497 community to transform suffering in this world into peace and compassion.

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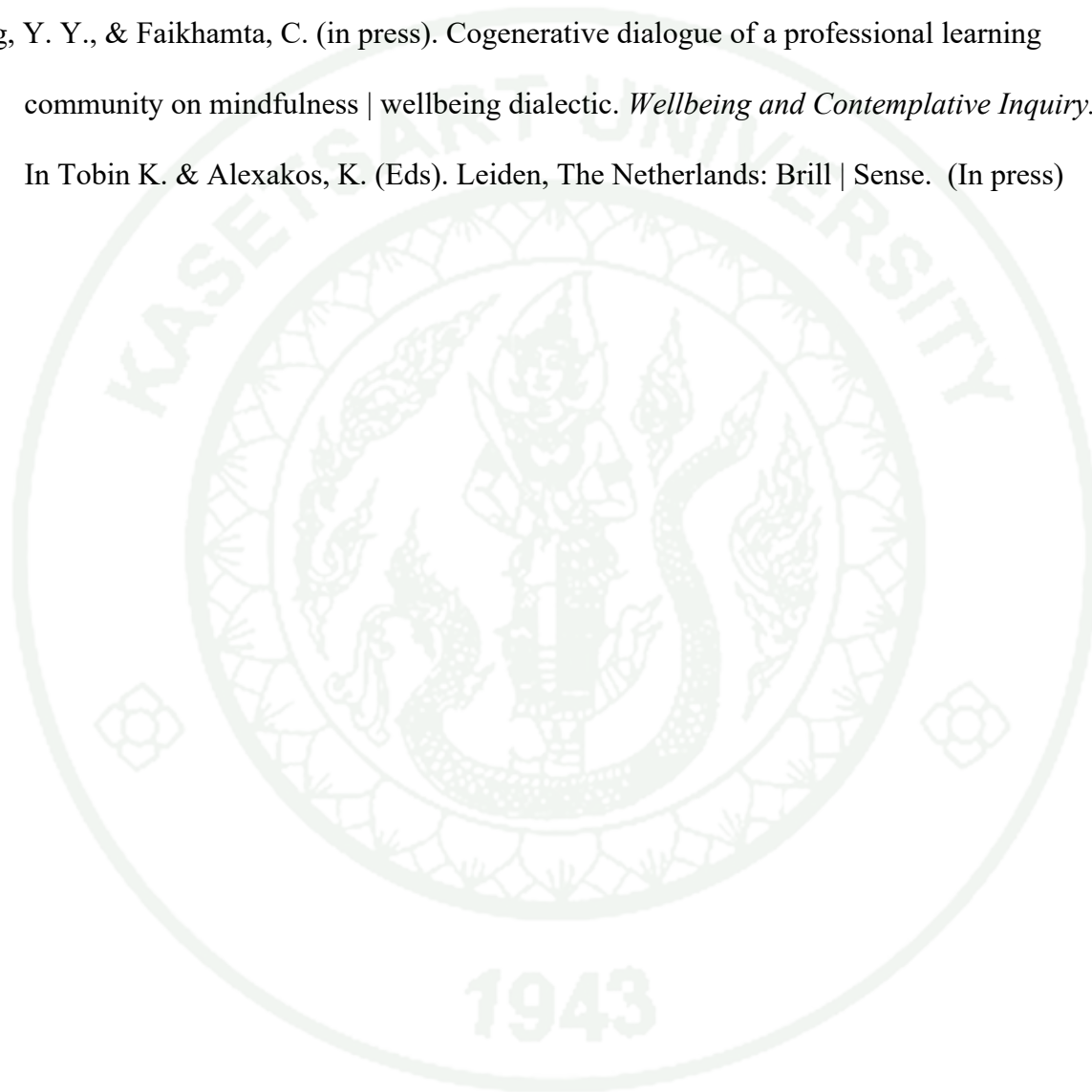
549 **Yau Yan Wong** has been an elementary school teacher for over 13 years. About 10 years ago, she has been  
550 providing mindfulness training to her fellow teachers, students and parents in an international program of a  
551 Thai public school. She is currently a doctoral student in science education at Kasetsart University, Thai-  
552 land. Her research interests include mindfulness, wellbeing and science education as a lived experience.

Y. Y. Wong, C. Faikhamta

553 **Chatree Faikhamta** is an associate professor in the Faculty of Education, Kasetsart University, Thailand.  
554 He has taught a full range of undergraduate and graduate courses in science education such as chemis-  
555 try methods course, research design in science education, science teacher professional development, etc.  
556 His research areas focus on STEM education, pedagogical content knowledge (PCK), self-study research  
557 and action research. He directed the nationally funded developing PCK-based professional development  
558 program for prospective science teachers and their school supervisors. Chatree is involved in collaborative  
559 research in many countries such as Canada, Japan, Korea, Spain, Taiwan and UK.

### Publication 3

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## CHAPTER 2

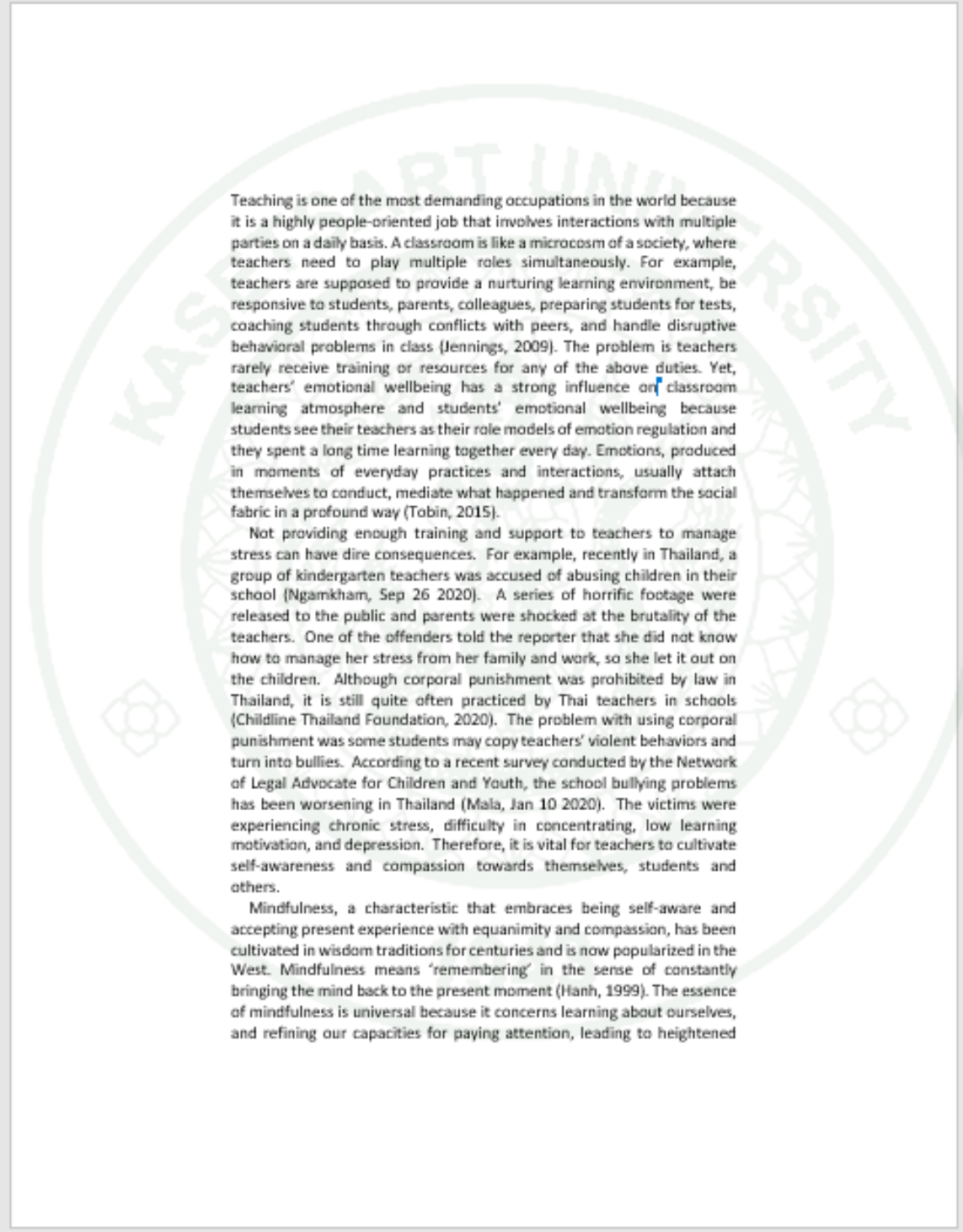
**Cogenerative dialogue of a professional learning community on mindfulness | wellbeing dialectic***Yau Yan Wang<sup>1</sup>, Chatree Faikhamta<sup>2</sup>**Kasetsart University***Abstract**

Teachers' mental health and their interactions with students have a strong influence on the students' learning and wellbeing. This study adopts a hermeneutic phenomenological approach to describe the authentic inquiry conducted by a group of like-minded teachers in a K-12 school in Thailand, who set up a professional learning community to solve bullying problems through cultivating mindfulness in their personal lives and teaching practices. Through participating and leading weekly meetings, retreats and workshops, this group of teachers gradually transformed their worldviews, beliefs and way of being. Their work triggered ripple effects in their school community. In a cogenerative dialogue, the professional learning community members reflected on their experiences and concluded that mindfulness practice, if being taught and modelled properly, could improve the quality of the dialectic relationship of teachers|students| and promote wellbeing by enhancing awareness, focus, and compassion in the school community.

**Keywords**

Mindfulness – wellbeing – bullying – Professional learning community

**Mindfulness for teachers' wellbeing**

The background of the page features a large, light green watermark of the Kasetsart University logo. The logo is circular and contains the text "KASSETSAKART UNIVERSITY" around the perimeter. In the center, there is a stylized emblem with a crown on top and a base with decorative elements. The text "KASSETSAKART UNIVERSITY" is written in a serif font, with "KASSETSAKART" on the left and "UNIVERSITY" on the right.

Teaching is one of the most demanding occupations in the world because it is a highly people-oriented job that involves interactions with multiple parties on a daily basis. A classroom is like a microcosm of a society, where teachers need to play multiple roles simultaneously. For example, teachers are supposed to provide a nurturing learning environment, be responsive to students, parents, colleagues, preparing students for tests, coaching students through conflicts with peers, and handle disruptive behavioral problems in class (Jennings, 2009). The problem is teachers rarely receive training or resources for any of the above duties. Yet, teachers' emotional wellbeing has a strong influence on classroom learning atmosphere and students' emotional wellbeing because students see their teachers as their role models of emotion regulation and they spent a long time learning together every day. Emotions, produced in moments of everyday practices and interactions, usually attach themselves to conduct, mediate what happened and transform the social fabric in a profound way (Tobin, 2015).

Not providing enough training and support to teachers to manage stress can have dire consequences. For example, recently in Thailand, a group of kindergarten teachers was accused of abusing children in their school (Ngamkham, Sep 26 2020). A series of horrific footage were released to the public and parents were shocked at the brutality of the teachers. One of the offenders told the reporter that she did not know how to manage her stress from her family and work, so she let it out on the children. Although corporal punishment was prohibited by law in Thailand, it is still quite often practiced by Thai teachers in schools (Childline Thailand Foundation, 2020). The problem with using corporal punishment was some students may copy teachers' violent behaviors and turn into bullies. According to a recent survey conducted by the Network of Legal Advocate for Children and Youth, the school bullying problems has been worsening in Thailand (Mala, Jan 10 2020). The victims were experiencing chronic stress, difficulty in concentrating, low learning motivation, and depression. Therefore, it is vital for teachers to cultivate self-awareness and compassion towards themselves, students and others.

Mindfulness, a characteristic that embraces being self-aware and accepting present experience with equanimity and compassion, has been cultivated in wisdom traditions for centuries and is now popularized in the West. Mindfulness means 'remembering' in the sense of constantly bringing the mind back to the present moment (Hanh, 1999). The essence of mindfulness is universal because it concerns learning about ourselves, and refining our capacities for paying attention, leading to heightened

awareness, and emergent insight that is beyond thought (Segal, Williams & Teasdale, 2002). Jon Kabat-Zinn (2003) explained that mindfulness practice is a coherent phenomenological study of the nature of the mind, emotion, suffering, and its potential release, based on practices that aim at systematically training and cultivating various aspects of mind and heart via the faculty of attention. Considerable research findings indicate that mindfulness helps improve attentional and emotional regulation, moment-to-moment awareness, and reduce emotional reactivity (Davidson, 2008). Hence, recently mindfulness practice has been applied in different social contexts for reducing stress and promoting mental wellbeing. In the field of education, various mindfulness training programs, such as Cultivating awareness and resilience in Education (CARE) (Jennings & Greenberg, 2009) and Mindfulness-based Wellness Education (MBWE) (Poulin et al., 2008), have indicated positive effects of mindfulness on teachers' self-awareness, emotional regulation, compassion towards themselves and others, and improved teacher-students relationships.

In this autobiographical study, Wong (first author) described her journey in introducing mindfulness practice to her colleagues in a K-12 school for promoting the wellbeing of her school community through organizing a professional learning community. This chapter includes Wong's first-person narrative accounts, extracted from a longer version of her hermeneutic phenomenological, historically constituted autobiography. The objective of this study is to critically reflect and evaluate Wong's lived experiences, and improve the knowing, teaching and learning of herself as well as other educators. Professional learning communities (PLC) in schools are inclusive, reflective, mutually supportive and collaborative groups of people who find ways inside and outside their immediate community to investigate and learn more about their practice in order to improve the learning of teachers and students (Stoll, 2010). Forming professional learning communities is a powerful way to build capacity for systemic change in a school.

This study is also an authentic inquiry in which a group of teachers applied what they have learned to improve their practices in an event-oriented, polysemic, polyphonic, and collaborative manner. An authentic inquiry is a multilogical research methodology that seeks to address the needs of all stakeholders through engaging in reflexive practices and facilitating individual and collective changes (Tobin, 2015). The journey of the PLC unfolded in an emergent and contingent way, that is, they responded to and addressed the salient needs and events in their

surrounding community through integrating mindfulness in their daily teaching practices. Through participating in weekly practices, professional development workshops and retreats, the PLC members gradually transformed their own worldviews and being and led to rippling effects on their students, coworkers, and school administrator. Hence, this study embraces the standards of educational, ontological, tactical, and catalytical authenticity (Guba & Lincoln, 1989, Tobin & Alexakos, 2021).

#### **Wong's background**

Wong had a strong interest in studying the mind since she was a child. She majored in psychology for her undergraduate and graduate degrees. After graduation, she worked as an elementary school teacher in an Anglo-Chinese school in Hong Kong for about three years. Due to the heavy teaching load and lack of sleep, she experienced a lot of stress and her health went downhill. She noticed that not only her, but also many of her coworkers and students were quite burnt out. Every day everyone in the school was busy running from one activity to the next, with very little time to rest, to reflect or to just be themselves. She felt this kind of life was not sustainable and hence began to look for a better alternative of living.

In 2009, she moved to Thailand and became an elementary school teacher in an international program of a public school. She got to learn about mindfulness practice from the Thai Plum Village. Since then, she has been learning and researching about different kinds of contemplative practices. Since 2010, she has been teaching mindfulness practices to her students in her grade 4 homeroom and conducted two classroom research projects with Thammasart University (Chongpaisal, Raweewan & Wong, 2012). Later on, one more researcher, Voranij Vasuratna, from Bangkok University, joined the research squad and published another conference paper (Jarutawai, Lowsuwansiri, Taechamaneesathid, Tangsangob, Wong, Vasuratna & Chongphaisal, 2014). These projects aimed to enhance children's emotional intelligence through mindfulness training programs. According to the students' reports and questionnaires, the students felt a higher level of self-awareness, peace, concentration, and emotional regulation. From 2015 to 2019, Wong conducted action research on her own and explored other effects of mindfulness through qualitative studies (Wong, 2015, 2016 & 2019).

In 2016, Wong presented the findings from the above research studies in a staff meeting. After that, the mindfulness project began to expand to include other classrooms. In the following sections, we describe Wong's



use of a hermeneutic phenomenological approach to make sense of her lived experiences with other PLC members in sharing mindfulness practice with their school community from June 2016 to March 2019.

#### Hallway Talk

The mindfulness PLC originated from a talk that I had with Karl (pseudonym), who was a grade 3 teacher, in the hallway about a few bullying cases in our classrooms. We shared our frustrations about the stickiness of bullying issues. Identification of bullying cases is usually tricky because bullying happens mainly outside of the classrooms when teachers are not around. The victims are usually too intimidated to inform the teachers. Moreover, when we noticed the bullying problem and began our investigation through interviewing students and parents, the interviewees became very sensitive and emotional. Sometimes, despite of our best effort, the parents of the victims decided to take their children out of our school.

We began to explore the root causes of bullying problems. Karl believed that the lack of compassion and lack of tolerance towards differences among children were the causes of bullying. He said the current education system in Thailand focused mainly on the development of cognitive skills and academic performance, but invested little time on cultivating self-awareness, compassion and social responsibility. As a result, most of our students and their parents put too much emphasis on getting good grades, certificates and awards, but they did not know themselves and why they need to learn. In addition, many students did not have sufficient emotional and social skills to negotiate with their peers during conflicts or face some major life challenges, like parental divorce and domestic violence. We thought the bullying problem was possibly a systemic and cultural problem.

Both Karl and I have been practicing meditation for a number of years and experienced benefits of the practice, like enhanced concentration, calmness, awareness, equanimity, and happiness. We hypothesized that mindfulness practice could help reduce the number of bullying cases in our school. Karl knew that I had been practicing mindfulness with my students in grade 4 for quite a few years. Hence, he borrowed the mindfulness curriculum that I had been developing and used it in his grade 3 classroom. Later, we gathered a few like-minded colleagues and began

to share ideas regularly, about how to cultivate mindfulness and compassion in our school community.

#### Professional development for teachers

In 2016, our school appointed a new director, Pranee Potisook, who was a keen meditator and showed interest in our mindfulness project. Hence, she asked us to organize a workshop about mindfulness practice for all teachers in the school. We invited one of the trainers from Teach Paws.b, Siri Chandler, to conduct a half-day workshop in our school. The purposes of the workshop were to explain what mindfulness is, and why mindfulness is important for the wellbeing of teachers and practice. In addition, she introduced some simple mindfulness practices that teachers could do in daily life. Siri explained that mindfulness is about "being" but not "doing," "responding" but not "reacting." She also said mindfulness is all about "ing-ing," such as observing, noticing, exploring, investigating, being with, and turning towards the present experience.

After the workshop, many teachers approached Siri, Karl and I for more information. About 14 teachers expressed interest in learning more about mindfulness according to the after-intervention survey. As a result, from December 2015 to January 2016, I invited Siri again to conduct an eight-week mindfulness training course, called .b Foundations to this group of teachers. After the training course, the participants gave us some positive feedback. Below is a comment from Gary (pseudonym), a kindergarten teacher:

I think I sensed some small changes happening in my life after the course. I used to react to my anger immediately and snapped at my family. However, lately I was able to pause sometimes and recollect myself. I've become a more pleasant person after the training. (Feedback from a survey, Sep 11<sup>th</sup>, 2016)

One physical education teacher, Nat (pseudonym), gave the following comment:

I like the mindful movements the most in this course. I can easily integrate it with my lessons. I think mindfulness is so important for young people because they are always on their phones and forget about their bodies. Mindful movements can definitely enhance their

bodily awareness and well-being. (Feedback from a survey, Sep 11<sup>th</sup>, 2016)

#### **Development of professional learning community**

After the training, about six other teachers showed interest to practice mindfulness with Karl and I on a weekly basis. They would like to learn how to conduct personal practice and how to teach mindfulness to their students. In June 2016, my principal suggested I put together a PLC. The mindfulness PLC was made of eight teachers from different grade levels and subjects. Karl was a grade 3 teacher, who was a long-time yogi and Vipassana practitioner. Kim was the co-teacher of Karl, who was also an experienced yogi. Betty was a grade 2 homeroom teacher and a beginner in mindfulness practice. Jessie was a middle school English teacher, who used to be a writer. Gary was a kindergarten teacher, who was experiencing a lot of stress at work and was interested in learning how to cope with stress better. Jenny was a high school biology teacher who wanted to explore if mindfulness can enhance her students' pro-environmental awareness. Annie was a high school music teacher and would like to know how mindfulness helps students focus better. Pranee was the supervisor of the PLC, who participated in our activities occasionally.

The PLC members met every Monday afternoon and did various contemplative activities, such as sharing books, breathing exercise, deep relaxation, mindful movements, yoga, mindful communication, lesson study, etc. We also signed up for a six-week mindfulness training course for educators, called *Mindful Educator Essentials* by Mindful Schools. Through the course, we gained many useful teachings and learning materials that can be implemented in a K-12 school. We taught this curriculum in our classrooms from kindergarten up to grade 7 during the morning homeroom sessions.

Gradually this PLC has become a close family. Not only did we share our teaching experiences, but we also practiced mindfulness together and helped each other solve daily life problems through the lens of mindfulness. Our weekly meetings acted as reminders for all of us to practice mindfulness regularly inside and outside of classrooms. At the beginning, I was the main facilitator of the activities. Later, more members took turns to lead mindfulness-based activities. The mindfulness PLC adopts a polysemic (multiple worldviews), polyphonic

(acceptance of different voice), and collaborative approach. For example, Jessie (pseudonym), a middle school English teacher, was concerned about the influence of social media on teenagers' self-identity and mental health. Hence, she shared her lesson plans on mindful communications and how to get unplugged. Another member, Jenny (pseudonym), was a biology teacher in high school and she had been advocating for a plastic-free society in her research work. In her session, she talked about the awareness of human impact on the aquatic ecosystem and how we can replace plastic with other substitutes. Karl and Kim were our yoga teachers because they believed that cultivating harmony within the body was vital for the wellness and wellbeing of their students. Betty was a grade 3 teacher and she usually led the gratitude practices, which she felt had helped her manage negative emotions tremendously. Annie joined the PLC later than the others and had never joined any formal mindfulness training. Hence, she just wanted to participate and did not want to lead any activity. Sometimes, the PLC members invited their friends to join the meetings and the community was growing bigger.

#### **Mindful Living**

Four of the PLC members including myself joined the Mindful Living retreat at Thai Plum Village in December 2016, where we lived with the monastics and lay practitioners for 5 days. The founder of the Plum Village is a Vietnamese monk called Thich Nhat Hanh, who is a peace activist and an advocate for integrating mindfulness into daily life activities. We joined the retreat with the intention to deepen our understanding of mindfulness and learn some practices that can be implemented in our classrooms.

Upon arrival in the afternoon on Friday, we were welcomed by a female monk and she told us briefly about the rules of the centre. There were some specific rules in the monastery, such as waking up at 5am every morning and keeping noble silence after 9 pm. Mondays were lazy day and we were not allowed to work and drive around. During those five days of Mindful Living, we learned to slow down all of our daily activities and bring a bit more awareness to every moment. We could see gathas (short poems) posted on many places, such as toilets, water faucets, dining area and bedrooms as gentle reminders of being mindful of every daily life activity. Most of the gathas were about how to conserve resources and energy for other living things. Every day we began our practice with morning chanting of the Five Mindfulness Training. The Five Mindfulness

Training originated from the Five Precepts, which include “do not kill,” “do not steal,” “do not lie,” “do not have sexual misconduct” and “do not take alcohol or intoxicants.” The Five Mindfulness Training is the guideline for practitioners how to live a moral life.

After chanting in the early morning, we would practice sitting meditation for 30 minutes. During the sitting meditation, we paid attention to the in and out-breaths without forcing. Then we practiced walking meditation around the beautiful mountains. We learned to synchronize the breaths with each step. Following walking meditation, we listened to a dhamma talk and practiced Sharing in a Circle, in which we sat together and took turns to talk about our practices.

All the meals in the Plum Village are vegan food. We practiced food contemplation before we ate, such as thinking about the origin of the food, the hard work that had been put into the production of the food, and sending gratitude to those beings that had sacrificed their lives for our survival. Food contemplation helped me slow down and savor the food more. I gradually reduced the amount of food that I ate because I became full faster.

After lunch, we practiced working meditation with the monks. We could choose one of the chores, such as cooking, washing dishes, doing laundry, cleaning the toilets, tidying up the beds, or gardening. When we were doing chores, we put awareness on the task on-hand and restrained from talking too much. I helped doing laundry and making the beds for others because my mind usually wandered a lot when I did these tasks at home. It would be a great training for me to learn to be present in these tasks. Interestingly, doing these chores with a bit more awareness made the whole process more enjoyable.

In Plum Village, Mondays are called the Lazy Days. We learned to practice “nowhere to go, nothing to do.” My friends went to go hiking in the mountains. As for me, I'd like to spend some quiet time alone. So, I decided to volunteer to clean the toilets. Then I swept the floor of our bedroom. I felt exhausted, but I still wanted to do something. So, I went to the meditation hall to practice walking and sitting meditation for an hour. However, a few young monks came in and started playing the piano. I left the meditation hall and asked myself, “What do I enjoy doing the most?” I decided to just walk around the mountains and took some pictures. I really enjoyed walking like this without a destination or a purpose. When I walked back to the dormitory, I felt quite mindful. The joy of simple walking remained for a few days even after I came out from the retreat. I have learned that the energy of mindfulness arises and

sustains automatically when I enjoy the practice. In the next three days, for hours every day I practiced walking meditation around the mountains. My passion in walking meditation became contagious and more friends joined the practice. We walked together, sometimes in silence and sometimes we talked about our lives.

In the last evening, we practiced Sharing in a Circle with all of the practitioners and female monks. We talked about our most memorable experiences in Mindful Living. My most memorable lesson was definitely learning how to slow down and enjoy my food. At the end of the conversation, we practiced hugging meditation. At first, I was worried that I would feel awkward. But when Monk Azera hugged me, I felt very comforted. She said, "Remember to hug your daughter and your husband in the same way. They will love it!" Finally, I asked Monk Azera, "Is it ok if I did not mention Buddha when I am teaching mindfulness? Is it a sin for Buddhism if I do not acknowledge Buddha's effort?" Monk Azera answered, "If you intend to help people, it does not matter whether you acknowledge Buddha or not. Dhamma belongs to the world. It does not belong to anyone."

#### **Mindfulness Workshop for Teachers**

We shared our experiences in the Plum Village with other teachers in a staff meeting after returning from the Plum Village. Then we talked about how teachers could use the Plum Village practices as tools to enhance mindfulness of themselves and their students throughout the day.

In December 2016, Pranee invited the mindfulness PLC to demonstrate some mindfulness activities in a professional development workshop. Each of us focused on different aspects of mindfulness. For example, I enjoyed walking meditation the most and decided to lead it in the workshop. Kim and Karl who had strong yoga backgrounds led the mindful movements. Jessie used to work in the business marketing industry and focused on mindful communication and social media. Betty joined the mindfulness training during a difficult time in her life and found gratitude exercise very useful for improving the outlook of her life. So, she led the Gratitude Stick exercise. Gary is a kindergarten teacher, who is very lighthearted and fun loving. He decided to play a mindfulness game called Smile Please with other teachers. And finally, Jenny talked about mindful consumption of plastics and sustainability. She got a PhD degree in biology and her thesis was about cultivating environmental awareness among the youth to reduce plastic use. Siri and her friend, Mary

(pseudonym), a school counselor from Concordian International School, also joined the workshop. They were impressed by the diversity of voices at the workshop and the enthusiasm of participants.

#### Scaffolding mindfulness teachings

In academic year 2018 to 2019, the Mindfulness PLC designed and implemented an eight-week mindfulness training program from kindergarten up to grade 6. This program aimed to enhance students' emotional intelligence and wellbeing through mindfulness practice. We decided to take a polysemic approach in our teaching practices by synthesizing secular mindfulness practices with Buddhist mindfulness practices. We used the Mind-up curriculum designed by Hawn's Foundation as the backbone and synthesized with some Paws.b lessons and the Plum Village lessons. We called this curriculum the Mindful Learners, because our students, their parents and the teachers were learning how to be mindful together and mindfulness practice is about learning about ourselves. The whole curriculum adopted competency-based model of EI created by the Department of Mental Health, the Ministry of Public Health, Thailand in 2000. The structure of the model includes three components namely virtue (conduct), competence (wisdom), and happiness (peace) (Department of Mental Health, 2000). Each lesson targeted one of the sub-components (competencies) in the model. The curricula of different grade levels have a similar structure (Table 2.1). However, the vocabulary and exercises were adjusted according to the students' abilities in different age groups. We created PowerPoint slides and worksheets for each class. I demonstrated a few lessons in each homeroom and observed the rest of the lessons conducted by other PLC members and colleagues.

After the implementation of the program, we had an evaluation meeting. The PLC members reported that they felt more confident and comfortable in teaching the lessons, compared to other colleagues who had never been trained before. But the benefit of scaffolding the teaching in the whole elementary program is that more teachers were exposed to the practice. From my experience, I noticed several challenges when I rotated through various classrooms. First, not every homeroom teacher welcomed the practice because it was a top-down command from the principal. Some teachers were intimidated by the potential religious association of mindfulness and mentioned they were not comfortable

being around when I was teaching. Second, even though some teachers were interested in mindfulness practice, they did not feel confident to teach after watching my classroom demonstrations. After the implementation of the mindfulness program, the PLC members and I continued to teach mindfulness in our classrooms, but teachers in other classrooms did not. Hence, we felt that ongoing training would be needed to enhance other teachers' self-efficacy in teaching mindfulness. Moreover, we needed to understand teachers' beliefs about mindfulness before providing professional development for teachers.

Table 2.1. The Mindful Learners syllabus for grade 3

EI Components	EI Components	Week	Activities
Virtue	Self-awareness, Emotional self-control	1	Mindfulness Bell (Mindful Schools) and Yoga (Joyful breathing, standing poses)
	Empathy	2	Befriending Practice (.b Foundations)
	Responsibility	3	Mindful Consumption (Snack Contemplation)
Competence	Self-efficacy	4	Weeble-Wooble Exercise (Paws.b)
	Interpersonal relationships, problem solving	5	Deep Listening and loving speech in pairs (Plum Village)
Happiness	Peace, relaxation	6	Getting through the storm (Body-Scan from Plum Village)
	Gratitude, Life satisfaction	7	Ten-Finger Gratitude Exercise (.b Foundations)
	Self-esteem, Life satisfaction	8	Happiness Toolkit & Painting a Happy Picture (Paws.b)



### Cogenerative dialogue on mindfulness | wellbeing dialectic

After the implementation of the mindfulness program, the PLC was dismissed because most members already understood the basic principles and the application of mindfulness practice. We decided to keep in touch on an informal basis. In our last meeting, Karl, Betty Annie, and I reflected on our previous experiences and had a cogenerative dialogue (cogen) about the implications of mindfulness in the wellbeing of our school community. A cogen is a reflective dialogue among a group of selected participants for identifying contradictions that may be changed with the purpose of improving the quality of teaching and learning (Tobin, 2014). I gave each participant a list of questions that prompt them to reflect on their beliefs. Then I asked them to decide if they agreed or disagreed with each statement and to explain their reasoning. Below is the transcript of our dialogue.

#### 1. Does mindfulness practice enhance students' learning?

**Betty:** For me, it depends on the student. If the student actually absorbs the ideas and tries to put in effort in the practice, then it can. But for some kids, it might not really click with them. So, if they are really doing it in a sincere way, it works. So, it depends on the student.

**Wong:** Yes. That's a good point. For those students who genuinely practice, do you think mindfulness enhances their learning skills, like critical thinking skills or how they interact with others in group work?

**Betty:** Yes. I think those students who would do or get mindfulness practice are generally more self-aware. So, I think having that awareness translates to any of the subjects that they are doing that requires them to think in a more critical way. And so, I don't know if it's the type of students or the type of individuals who are already able to have these skills to be aware. I am not sure if mindfulness enhances their skills or just the type of person they are.

**Karl:** Some students may be inherently more aware than the others. It's just about their personality or where they are brought up. Some students might be not focusing on anything because of how they are raised. I think that second grade level is kind of young and we can't really tell yet. Maybe in some students we can, but if they do it continuously and when they get

older, we can see it. Right now, it is kind of so young. Your question was does it benefit their academics? Or student learning? Definitely yes.

Wong: Learning can be academics or the emotional side of learning too, like the motivation side. They are more curious, also can be more compassionate towards the other students.

Karl: Yes. I think it can benefit that, because they slow down and they think about whether they are learning more and they are aware of that. Or if they're showing their emotions, they are not going to distract other people because they are thinking about maybe I shouldn't distract other people and I should listen, instead of distracting. That'll be mindfulness. Like John (pseudonym) for example, he usually just shouts out. But with mindfulness, he can focus instead. He can learn better and other people can learn better because he doesn't shout out anymore. For me, that will be using mindfulness.

## 2. Can mindfulness help reduce bullying problems in school?

Betty: We have students that didn't really improve. But I think there were students that became more aware. And one thing that we did was mindfulness. But we also talked directly about bullying. So, there were a few different approaches that we took. And there was a student like Joe (pseudonym) who doesn't seem to have any effect on, like he doesn't seem to have heightened awareness. But other students like Mike (pseudonym) who at least seemed to know he was doing it, but he couldn't control it. He does seem to be able to control his emotions more. So maybe he acted out less to other students. But it doesn't work across the board. For some students, it could be helpful.

Karl: Maybe it will take more than one year to see any difference. It's not going to change someone overnight. But if they continue with mindfulness practice for a few years ... a couple of years, we'll then see the change. For example, Nathan (pseudonym) got a lot better.

Betty: Yes, he got a lot better.

Karl: But I don't know if it is because of mindfulness or not. But it might be.

Wong: It's quite hard to isolate mindfulness from other measures that you've used to improve students' behaviors. Besides mindfulness, you

also talked directly to students about their behaviors or did some other activities that may not be mindfulness-based.

Karl: Like the bullying lessons we did. They are not called mindfulness, but there is definitely mindfulness in those lessons. Like think about what you do before you do with somebody else. Would you want them to do it back to you? That's mindfulness because they stop and think first. I think all the bullying lessons that we did are pretty much mindfulness lessons.

Betty: Yes. True.

### 3. When and in what subjects should teachers introduce mindfulness?

Karl: For me, it'll be social studies, like when we talk about cultures and people and different things like that. But it is really inherent in every subject. I wonder how mindfulness fits in music lessons, because they are trying to feel their notes and feel the pitch and how it is different. I think mindfulness will work for music, especially. But for science in particular, I haven't noticed anything. They are just inquisitive already, so much that I cannot figure out if it is mindfulness or not. They are already like that. What about music?

Annie: In the younger students, they don't do mindfulness or things like that. And it's too late to start for high school students. |

Wang: So, when is the best time to introduce mindfulness to students? For me, I float in-between different classrooms this year. And I feel like ... it seems like IP3 start to be responsive to the lessons or more ideas to share about mindfulness. IP2 also have some but it's the beginning of awareness. But grade 1 or younger don't really have much self-awareness.

Betty: Yes, maybe there is some scientific explanation of that, like when the metacognitive development begins. But I think you are probably right, about grade 3 when I can see that they become more self-aware.

Karl: About what age level would be good to begin teaching mindfulness? I think the earlier the better. I mean just because IP2 didn't talk about it ... They are probably just not able to express themselves at their English level. In IP3 level, they are expressing more because they have better

English. I think the earlier the better. For parents, even before they go to school for sure, or right away when they were born.

Betty: Well, maybe too early.

Karl: No, never too early.

**4. Can mindfulness practice enhance students' ability to handle destructive emotions?**

Karl: Yes, for sure. Like Mike gets mad fast. And if he uses mindfulness, he will be able to control more and not to act on it. Maybe Nathan did that too. He used to disrespect everybody and teachers, but he improved a lot towards the end of the year. He still does things, but ...

Betty: Yes, I think his awareness is being increased a lot, not only because of mindfulness, but he had a lot of serious consequences after what happened. So, it caused him to have to be more aware. He will think more before he acts.

Wong: That's a good point that not only teaching mindfulness, but kids need consequences in order to improve.

**5. Should mindfulness practice be included in a formal school curriculum?**

Betty: I would disagree just because I think it's conditional. I would agree if there is someone who is able to teach it and model it because it's not a good idea to just ... maybe just the curriculum tells the teachers this is what you need to do, but then if it is not actually modeled, it is not going to be effective.

Wong: That's a good point.

Karl: I think it definitely has to be secular mindfulness to be included in the formal curriculum. But no religious connotation. For me, or for people who are a little bit older or teachers, it might be when you hear mindfulness, you think of Buddhism. But for young kids, when they learn about mindfulness, they may not get the impression that it is Buddhism. So, if it's not a religion, they won't feel bad about it. As long as it is secular, it is safe because otherwise people might have a wrong impression about it. If you tell them that it comes from Buddha, or said Buddha did this and that, they might relate too much to him and that they

shouldn't be doing it or get scared of it. I think fear ... I think some people are just scared about it because of the history of it. They don't want to associate themselves with Buddhism or Eastern religion where it kind of came from. When it really ... it's not something that is religious about it. It's just about being aware of yourself.

Wong: Yes. It's about self-awareness...

Annie: Yes, I said yes because mindfulness is already included in many schools in England. So, what I see from my point of view that today you have a huge number of ADHD students and it's really good for them. This practice can guide them. Like if they practice in the morning, they will be calmer and pay more attention. And if you study it from a psychologist point of view, now it is already part of the psychology in the secular part, not the religious part.

Betty: Basically, I disagreed previously. But I do agree that it doesn't have to be called mindfulness. But I think there should be some kind of social emotional learning in school, whatever you call it. That should be part of the curriculum because it's critical for their development.

Wong: Yes, that's a good point. The vice-principal also asked me to call mindfulness something else because of the religious connotations. But he also thinks teaching students social emotional skills is a good thing. I think it's about the labeling issue. I also agree with Betty that the top-down approach will not work, like forcing every teacher to do this won't work. It depends on teachers' willingness to do it and modeling mindfulness correctly.

#### **6. Is mindfulness an important quality of a teacher?**

Everyone: Yes, definitely. Every profession.

Betty: The best teachers are very reflective on their practice. All that you call it, mindfulness, awareness, or reflectiveness is just really important for whatever you do. But for teachers in particular, you always have to be noticing how things are working and what could be improved. So yes, it just requires a lot of mindfulness.

Karl: When you are teaching, your emotions are very important. If you let it go and not aware of your emotion, you get out of hand very fast. You will get angry at the students. Even I used to do that a long time ago when I wasn't into mindfulness because I was not aware of my emotion and I said something mean to them or I was too strict. I didn't know what the consequence was of myself being too strict because I was not being mindful. So yes, being a better teacher is being mindful.

Wong: Yes. I agree too. For me, it's not mainly on the cognitive side. But when I started practicing mindfulness, I became more aware of my emotions. It is easier to notice when I get angry, than noticing when I am thinking when I am not thinking. So, I am more aware of my anger and how it affects the way I talk to my students and my attitude towards them. And then later on, I am aware of my thinking. Like I have some judgments about some of my students and I become aware of that.

Annie: I think I rarely get angry with them. I think because my subject is not optional, especially for high school and they all have to do it. So, if someone doesn't want to participate or does some mean things, I use some tools to deal with them. I got angry with one girl this year, but I hope I didn't act on it. Ha ha... I just told her that at this point you have two options, either start participating or go back to your classroom. Otherwise, I will give her a low grade and I am fine with it.

Wong: I think you talked about a good point here is whether we act on it or not. It's not like when we practice mindfulness, there won't be anger. You probably notice more anger than not having mindfulness. It's okay to be angry... The point is just to know. You can do anything in your mind, but just don't act it out. And if I do, just know so. (Transcript from audio recording, Mar 28, 2019)

#### **Insights for other educators**

The actions of each individual can possibly have rippling effects on their environment (Stoll, 2009). Thus, it is vital for individuals to connect and learn together and take a holistic view to see how to improve the system as a whole. The story of the mindfulness PLC showed the power of authentic inquiry in initiating and implementing systemic change for the wellbeing of the school community. The formation of PLC originated from the intention of a group of like-minded teachers to solve the bullying

issues in their classrooms and cultivate mindfulness and compassion among teachers and students. Hence, the activities in the PLC are event-oriented, responding to the salient characteristics of their context.

The weekly meetings gave plenty of opportunities for the PLC members to experiment with new ideas and receive feedback from their peers. In addition, when teachers practice mindfulness together as a community, they constructed new knowledge and influenced each other's worldviews. Therefore, the actions of the PLC have both educational and ontological authenticity.

The PLC members took what they had learned from the activities within the community and applied the new knowledge in their own classrooms. The teachings of the PLC members gradually influenced the coworkers around them through research presentations and workshops, which inspired others to become aware of their own teaching practices. The authentic inquiry of the PLC has demonstrated both tactical and catalytical authenticity.

Meaningful and genuine systemic change in a school community comes from the accumulation of small changes that are based on patience, perseverance, and compassion. Important change may just begin from a hallway talk. However, when teachers find their own voices and pull their resources together, their actions will trigger rippling effects.

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**Author Biographies**

Yau Yan Wong has a BSc degree in psychology from Virginia Polytechnic Institute and State University in the USA and a MSc in research methods in psychology from University College London in UK. She has been an elementary school teacher for over 13 years. For the past 10 years, she has been leading mindfulness research projects and providing mindfulness training to her fellow teachers, students and parents. She is currently a doctoral student in science education at Kasetsart University, Thailand. Her research interests include mindfulness, wellbeing, human adaptation, sustainable development, and science education as a lived experience.

**Contact information**

Name: Yau Yan Wong

Mailing address: Science Education Division, Department of Education, Faculty of Education, Kasetsart University, Thailand

Email address: yauyan.wo@ku.th



Chatree Faikhamta is an Associate Professor at the Faculty of Education, Kasetsart University, Thailand. He has taught a full range of undergraduate and graduate courses in science education such as chemistry methods course, research design in science education, science teacher professional development, etc. His research areas focus on STEM education, pedagogical content knowledge (PCK), self-study research and action research. He directed the nationally funded Developing PCK-based professional development program for prospective science teachers and their school supervisors. Chatree is involved in collaborative research in many countries such as Canada, Japan, Korea, Spain, Taiwan and UK.

**Contact information**

Name: Assoc. Prof. Dr. Chatree Faikhamta

Mailing address: Science Education Division, Department of Education, Faculty of Education, Kasetsart University, Thailand

Email address: feductf@ku.ac.th

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## CHAPTER 12

## Mindfulness in Daily Life Heuristic for Cultivating an Equanimous Mind

*Yau Yan Wong and Chatree Faikhamta*

### Abstract

This study took place during the COVID-19 pandemic. Many of us can relate to the feeling of uncertainty. It is a time the conditions of living for many of us are under threat. In this study, we explore how mindfulness practice can help us cultivate a sense of wellbeing in the midst of uncertainty. We adopt a hermeneutic approach to understand the characteristics of mindfulness by including the voice of practitioners from the Thai Forest wisdom tradition. We develop the *Mindfulness in Daily Life Heuristic* (MiDL) for people who are looking for cultivating equanimity towards daily life challenges. Preliminary findings indicate that several participants experienced heightened awareness of their body, thoughts, and emotions in daily life. Moreover, their understanding of impermanence and non-self, helped them cope with stress and provided them a sense of freedom.

### Keywords

mindfulness – heuristic – daily life – Vipassana – cultural studies

### 1 Mindfulness for Transcendence

The advances in science and technology have made modern life safer, more convenient, and more comfortable for many of us. In the past century, human beings have been using science and technology to extend their senses, to expand their control over natural resources, and to satiate their endless desires. Yet, no matter how advanced science and technology are, we are still facing the same life challenges as the people in the past and other living things, such as getting sick, aging, and eventually dying. Situations like the COVID-19 pandemic remind us to understand the impermanence and interdependence of everything in nature. In times of great suffering, we need to have the humility

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to contemplate our lives deeply. We need to see how we can use science and technology to take care of ourselves and our environment and evolve more consciously. When our living conditions are under threat, how can we learn to face adversity? In this chapter, we explore how we can cultivate a sense of equanimity through mindfulness practice to face uncertainty, and some common life challenges of being human.

Mindfulness is an open-hearted, moment-to-moment, non-judgmental awareness that can be optimally cultivated through meditation and daily observation of this body and mind (Kabat-Zinn, 2005). Mindfulness practices have historical roots in Buddhist tradition. Recently, teachers of mindfulness in the West have adapted this traditional contemplative practice into a secular discipline for the psychological and medical benefits that associate with mindfulness (Meiklejohn et al., 2012). For example, Kabat-Zinn, the founder of the University of Massachusetts Stress Reduction Clinic in the United States, applied mindfulness practice to help patients deal with chronic pain. Tobin and colleagues have been introducing mindfulness meditation, heuristics, and Jin Shin Jyutsu practice to educators and various other populations as self-help tools for improving their wellness and mental health (Powietrzynska & Tobin, 2017). Right now, mindfulness is considered as one of the key constituents of wellbeing according to the World Happiness Report (Sustainable Development Solutions Network, 2020).

There are, however, some skeptics of how mindfulness is represented in the field of secular mindfulness. We noticed that secular mindfulness practice is less prominent in Thailand, probably because its purpose and principles do not align with the ontology, epistemology and axiology of many Thai practitioners who adhere to Theravada Buddhism. For example, in Buddhism, mindfulness is not intended for sustaining positive states or reducing negative states, but it is for understanding this body and mind as they are. For Buddhists, mindfulness practice is for transcending this body and mind of ours, which they believe are the suffering proper.

Therefore, we sought to develop a *Mindfulness in Daily Life (MiDL) Heuristic* that includes the voices of practitioners from the Thai Forest wisdom tradition, which is relatively unknown in the Western mindfulness movement. A heuristic is a set of descriptions of a salient construct as well as a reflexive tool for enhancing awareness of current habits of mind. The characteristics of mindfulness in the MiDL Heuristic derived from three cogenerative dialogues (here after cogen) that Wong had with three Vipassana teachers, including Koffman, Palawongse and V. Nimmalo, from the Theravada Buddhist scriptures and from the Mindfulness in Education Heuristic (Powietrzynska, 2014). Cogens are discussions

between and among researchers and other stakeholders around a topic of interest. The difference between cogens and other forms of discussions is that cogens focus on contradictions and view differences as a resource for learning. Cogens seek to address the needs of all stakeholders without giving privilege to one voice or one interpretation over another. In a cogen all participants are regarded as coresearchers that construct new knowledge together (Alexakos et al., 2015). In the following section, we adopt a hermeneutic approach to explain basic terminology and principles of mindfulness practice in the Thai Forest wisdom tradition through describing and interpreting the cogens.

## 2 Principles of Thai Forest Wisdom Tradition

### 2.1 *Wisdom Training*

In Theravada Buddhism, mindfulness is defined as a mental state that observes all phenomena with an impartial attitude. Ven. Pramote Pamojjo, a revered monk in the Thai Forest wisdom tradition, explained that mindfulness is a wholesome state that allows a person to “see things as they are” and develop insights into phenomena (V. Pamojjo, 2015). Mindfulness practice in the Thai Forest wisdom tradition follows the Threefold Training framework, including wisdom training, morality training and mental training.

Wisdom is defined as understanding of the nature of this body and mind, through penetrating insights that arise from daily life self-observation. The purpose of wisdom training is to understand this body and mind as they are so that we can be free from defilements (e.g., desire or attachment, aversion, delusion or ignorance). The Buddha taught that we suffer as a result of attachment (V. Pamojjo, 2015). Whatever we attach to becomes our burden. The things that we attach to the most are this body and mind of ours. However, this body and mind are continuously subject to change and their natural states are not under our control. Suffering arises whenever the mind struggles to be different from what it is experiencing at the present moment. However, through training the mind can learn to become equanimous to the changes of all physical and mental phenomena so that we can transcend the ups and downs in life.

During a cogen with Palawongse, V. Pamojjo's teacher assistant, she describes the attitude of equanimity as follows:

Palawongse: Good is not permanent. Bad is also not permanent. We practice until we can see all good and bad are equal. All disappear, all gone. We practice seeing that. Not to practice getting the good and throwing away

the bad. All good and bad are equal. (Transcript from a video recording, May 20th, 2020)

## 2.2 *Four Foundations of Mindfulness*

In order to cultivate understanding of this body and mind, we can be mindful of the four foundations, including body or matter, feelings, mind, and mental factors. Koffman states that many people believe that they have to hold or sustain the attention on their body, and they have to premeditate this. But when we practice in this way, we cannot understand the natural state of the body and the mind. So, we have to allow the body to move naturally, and then just sort of be able to peek in and see what the body is doing. When we observe the natural state of the body, we can notice the impermanent and non-self nature of the body. Palawongse explains in the following vignette:

Palawongse: When you are ill, or you have different aches and pains, the body doesn't have those pains, and all of a sudden it does (impermanence). And we can't force the body to feel better when it is sick. We have to go to the doctor (non-self). (Transcript from a video recording, May 20th, 2020)

The same principle applies to the observation of the other three foundations. For example, when we observe feelings, we may notice that we cannot be happy or comfortable all the time (impermanence) and happiness or comfort is not fully under our control (non-self).

The mind refers to mental phenomena that involves memorizing, perceiving, interpreting, describing, analyzing and synthesizing. Similar to the body and feelings, the mind is always changing (impermanence) and is not fully under our control (non-self). The mind cannot be still or sustain focus forever and it is always doing something, such as wandering or thinking.

Mental factors refer to the processes of all physical and mental phenomena. In Buddhism, mental factors are also known as *Dhamma*. When we understand the characteristic of *Dhamma*, we notice the rise and fall of all phenomena, the cause and effect of phenomena, and some deeper impurities in the mind (e.g., attachment, aversion, restlessness, drowsiness, and doubt).

There is a consensus amongst V. Pramote, Koffman, Palawongse and V. Nim-malo that practicing mindfulness in daily life is essential for gaining liberating insight. The Thai Forest wisdom tradition classifies mindfulness practice into two kinds: formal practice and informal practice. Formal practice includes all forms of meditation, such as sitting meditation, walking meditation, mindful movements, and chanting. Informal practice is the observation of the changes

in the body and mind in normal daily life. Formal practice supports informal practice in the sense that it cultivates Samadhi and a habit of becoming aware in the mind so that the effect can spill over to the normal daily life. However, informal practice, that is, living our daily life with mindfulness, is the actual essence of Vipassana.

### 2.3 *Morality Training*

Morality (Sila in Pali) training is the upholding of precepts or ethical standards of Buddhism. Lay practitioners need to uphold five basic precepts: refraining from killing or harming other living things, stealing, and taking advantage of others, having sexual misconduct, lying or gossiping, and taking alcohol or other intoxicants. The underlying principle of morality is to do no harm to ourselves and other living things. Morality helps the mind feel safe, joyful, and peaceful. It is the foundation of mental stability, mindfulness, and compassion.

### 2.4 *Mental Training*

Mental training is the cultivation of mental stability; called *Samadhi* in Thai. V. Nimmalo describes two types of Samadhi, that are, absorption and stable observer. Absorption happens when we direct all our attention on an object, and it is useful for taking a good rest. However, it is not conducive for wisdom development. It is the second type, stable observing quality of the mind, that helps to attain Vipassana. V. Nimmalo describes the characteristics of the stable observer in the following vignette:

V. Nimmalo: Samadhi means the mind that is stable ... the mind doesn't move out to objects. The mind is stable with the mind. The mind resides at the mind, not out to the object. (Transcript of video recording, May 11th, 2020)

"The mind that is stable with the mind" refers to the stable mind that does identify with a phenomenon. In order to progress in our practice, it is important to find a balance of mindfulness, morality, and mental stability. In an informal conversation, Koffman once explained that when we are too strict about keeping the precepts without genuine understanding of why we need to do so, we become too judgmental towards ourselves and others. When we practice meditation to develop mental stability without mindfulness, we become addicted to relaxed and peaceful states without gaining any wisdom. When we have mindfulness without Samadhi, the mind becomes tired and restless. Hence, finding balance is the key to excel in the practice.



### 3 First Iteration of the Heuristic

Upon understanding the Dhamma, many [of] Buddha's disciples exclaimed, "it is crystal clear, as if something that was turned upside down, and it is now right side up." It is easy. We turn something up that was facedown. How hard could this be? (V. Pamojjo, 2013, p. 5)

Although the principles of Dhamma are logically sound, they cannot be understood through our intellect only. It is important to understand them through practicing mindfulness in daily life. The challenge is, how can mindfulness teachers from the Thai Forest wisdom tradition introduce the principles of Dhamma in a way that is conceivable and useful for the general public? What are the specific phenomena and insights a practitioner will experience in mindful moments? How can we cultivate automatic awareness in daily life without being too forceful or intentional? These are the questions that we address in this study. We attempt to provide more concise descriptions of mindfulness represented in the Thai Forest wisdom tradition through the construction of a heuristic.

Heuristics have been used by researchers for cultivating mindfulness and ameliorate emotions in classrooms. For example, Tobin and colleagues developed and implemented the *Mindfulness in Education Heuristic* as a low-grade intervention that helps teachers and students to monitor their emotions, to counteract their negative impact and to maintain wellbeing (Powietrzynska et al., 2015). Their heuristic is reflexive and generative in the sense that once a person reads and responds to the characteristics of mindfulness in their social life, those characteristics become objects of reflection and change their social conduct. This study is a continuation of Tobin's research work on heuristics. We have adapted Tobin's et al concept of *Mindfulness in Education Heuristic* and created a contextually relevant heuristic for the practitioners of the Thai Forest wisdom tradition.

Most of the statements are generated from the vignettes from Wong's cogens with three Vipassana teachers. The heuristic reminds participants to notice the phenomena that happen in the four foundations of mindfulness and cultivate a balance among morality, mindfulness, and mental stability. Three statements, including "I sense my body at the present moment, whether sitting, walking, standing or lying down," "I watch my feelings without getting lost in them" and "I am aware of the emotions behind my actions," are extracted and adapted from the Freiburg Mindfulness Inventory, that was designed based on the principles of Vipassana meditation (Buckheld, Grossman & Walach, 2001). There are 50 characteristics in the first iteration of the heuristic, including

TABLE 12.1 Facets of the Mindfulness in Daily Life heuristic from first iteration

Facet	Meaning of facet	Example of a characteristic from the heuristic
Moral living	the upholding of moral precepts that intend to avoid harming oneself and others.	#1 "I try my best not to kill or harm any human being, animal, or plant."
Non-judgmental observation	the ability of the mind to observe without judgment	#6 "I accept my body as it is"
Non-conceptual awareness	the bare knowing, not thinking or getting involved with thought or concepts.	#13 "I sense whatever feeling arises without labeling it or categorizing it."
Present-moment awareness	the observation of what is happening right now in the present.	#18 "My attention returns to the breath quickly after it wanders away."
Automatic awareness	Arises by itself without forcing or holding attention	#26 "I automatically recognize the change of thoughts without holding attention forcefully."
Wisdom from insight	the understanding of the impermanent, non-self and unsatisfactory nature of all phenomena	#34 "I notice the constant desire to feel happy throughout a day."
Mental stability	The stable observing quality of the mind	#42 "I notice when the mind moves out from the object of meditation."

47 statements on a 5-point Likert scale (i.e., 1 means 'very often (almost every day)' to 5 means 'very rarely (almost never)') and 3 open-ended questions (Appendix A). Seven categories emerged from the data analysis, including, moral living, non-judgmental observation, non-conceptual awareness, present awareness, automatic awareness, wisdom from insight, and mental stability (Table 12.1).

We created an online version of the heuristic by using Google Form and sent the link of the heuristic to the participants. Although the construction of the heuristic began with the cogens of three Vipassana teachers, we continuously modified it based on feedback from nine participants, who completed the first iteration. We adopted an approach that is collaborative, polysemic and polyphonic, so that we could include the voices of practitioners from different

contexts. All coresearchers have basic to advanced understanding of mindfulness practice in the Thai Forest wisdom tradition. Three of them are Thai nationals, and the rest are from the U.S.A., Australia, Canada, and Nepal.

#### 4 Learning from the (First Iteration)

According to the data from the last three open-ended questions in the first iteration, three out of nine participants reported that they experienced a higher level of awareness of their body and mind after completing the heuristic. One other participant mentioned that the Likert scale is too coarse of a focus. Hence, when we implemented the second iteration, we asked participants to write what they have noticed in a reflexive journal rather than using the Likert Scale.

Most participants criticized that a number of phenomena indicated in the statements are for advanced practitioners only. For example, a participant mentioned that number 1 "I try my best not to kill or harm any human being, animal and plant" (Appendix A) made her feel uncomfortable because the statement is very difficult to do and not specific. She felt that she was forced to answer or choose a number choice. As a result, we edited the statements in the category of Moral Living to describe specific behaviors that may reflect a sense of morality. For example in the second version of the heuristic (Appendix B), we changed number 1 to be "When I notice some small insects on the ground, I avoid stepping on them so that I will not harm them."

Two participants found statement 41 "I see this body and mind as the suffering proper" too advanced. One of participants who is a Vipassana teacher mentioned that only an Arahant, a fully enlightened being, can see the insight of number 41. Hence, it is omitted in the second iteration of heuristic. This participant also suggested we omit the characteristics that describe the liberating insight as very few people might have experienced them. Hence, we deleted statements number 6, 28, 32, 35, 36, and 47.

The participants identified a number of statements that are confusing or with misconception of mindfulness. For example, one participant mentioned that number 12 and 13 related to non-conceptual awareness are difficult to understand. He reasoned that labeling a thought or an emotion may help to cultivate mindfulness sometimes. Hence, in the second version (Appendix B), we rephrased number 12 to become "After I notice my body or mind contact an object, I move on without thinking about it." We deleted number 13. He also mentioned that number 45 is confusing because he did not understand how the mind could sink into the breath. Hence, we deleted this item. Another

participant mentioned that number 39 about noticing doubt is too subtle for beginners to notice. Hence, this statement is omitted from the second iteration. She also mentioned that number 43 "I practice sitting and walking meditation every day" is not an accurate indicator of mindfulness, because meditation is not equal to mindfulness practice.

According to the answers to the open-ended questions, one participant mentioned that we should have more statements about different aspects of craving, such as competition, striving for recognition, and bragging. Hence, we added a statement "I notice whenever the mind moves out to see, to hear, to touch, to smell, or to think," which is a characteristic of the mind that has craving to get sensual pleasure. We also added another statement, "I notice that I feel disappointed whenever the mind is not at peace," which indicates one's attachment to peaceful state.

Another participant said the heuristic should describe automatic awareness more explicitly. Hence, we added two characteristics, "I am able to sense when I am knowing naturally, and I am trying hard" and "I can notice a mental phenomenon after they happened without thinking about it in advance."

## 5 Second Iteration of Heuristics

According to the feedback from the first iteration of MiDL Heuristic, most participants did not report that they felt a heightened awareness after completing the heuristic. We suspected that the first iteration might have included too many characteristics of mindfulness. As a result, we decided to feed a daily diet of two to three characteristics from the heuristic to a group of participants from all walks of life. The second iteration was implemented among a different group of 6 participants who volunteered to join this study. Participants have different nationalities and they are living in different countries, including Thailand, the United States, France, and Australia. They also have different occupations, including teacher, university lecturer, graduate student, university administrator, and business owner. They learned about this mindfulness training program through email or word of mouth.

We decided to adopt an emergent and contingent approach to implement the second iteration. In the beginning of the program, we asked participants to complete an informed consent form and a demographic form online. Next, we had an interview with each individual participant on Zoom to explain the purpose of the study, to understand their background and prior experiences in contemplative practices. Then over the next eight weeks, each participant received one to three characteristics from the MiDL Heuristic per day, three

to four times per week through email. These characteristics aimed to enhance their awareness of the body and mind throughout the day. We assigned different characteristics to each participant based on their reports about their experiences. Towards the end of the day, they recorded what they had noticed in a digital reflexive journal (Google Doc), that was shared with the authors of this study. During the fourth week, we met each participant individually on Zoom to check their progress and to answer some of their questions. By the end of the 8th week, we interviewed the participants again to get the participants' feedback.

## 6 Bethany's Story – Implementation of MiDL Heuristic

In this section, we show how we use the *MiDL Heuristic* to engage participants in practicing mindfulness in their daily life. Among the seven volunteer participants, we chose Bethany's (pseudonym) case because she completed all of the assigned heuristics and provided thick descriptions about her experiences daily in her digital journal. We extracted several of the vignettes from Bethany's reflexive journals to demonstrate how she has been enacting the heuristic in her daily life and how the heuristic influences her wellbeing.

### 6.1 *Nonjudgmental Awareness*

Bethany is Wong's previous colleague, who used to participate regularly in the mindfulness professional learning community of a primary school in Thailand. She is now working as an English teacher in France. She practices yoga every day and has a high level of bodily awareness. In our initial interview, Bethany mentioned that she had been staying at home in France and teaching online during the pandemic. She mentioned that it had been a challenge for her to adjust to new changes and uncertainties, and thus she would like to make good use of her time to cultivate her mind. Below is a vignette that shows the assignment of her first practice and her response to the heuristics:

#### *First Practice: July 16th*

Item 8 "When I feel uncomfortable, I notice the discomfort without having to avoid it."

Item 10 "I notice the anger without suppressing or reacting to it."

Bethany: Today I noticed that being more aware of my thoughts helped me realize I do not have to dig so deep into them and get lost in them. I

have the power within me to recognize which thoughts are ones which can be noticed, accepted, and then released and which can cause an anxious mind. Today was a moving experience and it is only day 1! (Excerpt from Bethany's digital journal, July 16th)

Quite often, people either suppress negative emotions (e.g., telling ourselves that we are not angry, or everything will be okay) or reacting to them (e.g., getting out of temper). However, practicing mindfulness gives us the opportunity to understand aversion in a non-reactive and non-judgmental way. Within the first week, Bethany began to recognize thoughts with a different perspective. Through adopting the non-self perspective to observe thoughts, she was able to release stressful thoughts and got unstuck from anxiety. For example, on the second day (July 17th), Bethany was able to become less reactive to negative emotions.

Bethany: Today was a hard day, both physically and mentally. I woke up with back and shoulder pain. My mind felt unmotivated for the day. This is not the first time, nor will it be the last, but today was the first time I was able to not dwell in my emotions. Not react to them. I let myself be, if that makes sense .... (Excerpt from Bethany's digital journal, July 17th)

### 6.2 *Mindful Use of Social Media*

As Bethany spent a lot of time on her computer, it might be easy for her to lose awareness of her body and mind. Hence, we recommended her to become aware of how the information on the Internet influences her mind. We introduced two heuristics from the Moral Living category in Bethany's second practice. The first heuristic is based on the fifth mindfulness practice of the Plum Village, "nourishment and healing":

#### *Second Practice: July 18th*

Item 2: "I am aware of how the comments and information on the Internet influence my thoughts and emotions."

Bethany: Social media has been something that has been bothering me more lately than usual; there is so much information, both positive and negative, that tends to consume us and for me, I start comparing myself to others without even realizing it! I will pay more attention to my time spent on the internet and the feelings that arise. (Excerpt from Bethany's digital journal, July 18th)

### 6.3 *Compassion towards Self, Others, and Nature*

As Bethany has been experiencing a lot of stress in her environment, we recommended that she cultivate a non-striving and compassionate attitude towards herself and other living things. The second heuristic is based on the first mindfulness training, 'reverence for life,' which aims to encourage her to appreciate the wonders of nature and cultivate joy towards simple things in life.

#### *Second Practice: July 19th*

Item 1: "When I notice some small insects on the ground, I avoid stepping on them so that I will not harm them."

Bethany: I remained aware of the insects and other living things around me. While I was eating an ice-cream in the hot afternoon, there was a pigeon walking close to me. I noticed it had a problem on his left foot. He was limping but was clearly hungry. My heart hurt looking at the poor bird. I threw some pieces of my ice cream cone on the ground for him; he enjoyed every bite. Because of the bird's presence today, I slowed down and became more aware of nature and its gifts. (Excerpt from Bethany's digital journal, July 19th)

### 6.4 *Being Present with the Body*

For Bethany's third practice, we invited her to cultivate present awareness by bringing awareness to her body posture when she was using her smartphone or computer. This is a grounding technique that may help her wake up from time to time from the screen and be present with her body.

#### *Third Practice: July 20th*

Item 17: "I sense my body at the present moment, whether sitting, walking, standing or lying down." (Present Awareness)

Bethany: Today I felt present in my body in many different situations. While I was meditating, I felt the earth's support below me. While I was teaching at my desk, I noticed my posture was not upright, rather slumped forward. I reminded myself several times in a couple of hours to sit upright so that my body would not become sore and restless .... (Excerpt from Bethany's digital journal, July 21st)

### 6.5 *Automatic Awareness*

Bethany was becoming more aware of the aversion in her mind throughout the day. However, she found it difficult to get unstuck from negative thoughts/

feelings. So, for the fourth practice, we assign two heuristics that may help her develop automatic awareness in a more effortless way.

*Fourth Practice: July 22nd*

Item 33: "I can sense when the mind is knowing naturally and when it is trying too hard."

Item 19: "I watch my feelings without getting lost in them."

Bethany: Today I felt many different emotions throughout the day, as different thoughts came and went, and also as different situations occurred. I tried really hard not to dive too deeply into them, but I have to be honest, it was a struggle .... (Excerpt from Bethany's digital journal, July 22nd)

But being more aware of this is helping in some ways ... I was able to be more patient with myself, which is already good in my eyes. (Excerpt from Bethany's digital journal, July 23rd)

Bethany was becoming less judgmental and more compassionate towards herself. However, she was still striving hard to push away or fix the negative thoughts and emotions in her mind. For the fifth practice, we invited Bethany to observe feelings and thoughts without forcing attention on them. Below are the characteristics that guide Bethany's practice:

*Fifth Practice: July 24th*

Item 24: "When a feeling arises, the mind automatically recognizes it."

Item 25: "I automatically recognize the change of thoughts without holding attention forcefully."

Bethany: My mind recognized feelings that came and went throughout the day. I was able to be gentle with them and just notice them as if I was a stranger walking by. This was a challenge, but at the same time it was refreshing to just allow thoughts and feelings to just 'be.' (Excerpt from Bethany's digital journal, July 24th)

### 6.6 *Body and Mind Connection*

Bethany sent me (Yau Yan) an email on July 26th that she felt she became more sensitive to her emotions and felt overwhelmed by her emotions sometimes. As a result, we assigned two heuristics to guide her to observe how her emotions influence her heart rate and her breath.



*Sixth Practice: July 26th*

Item 30: "I am aware of the change in the rate of my heartbeat when I feel irritated."

Item 32: "I notice a change in the way I breathe when my emotions change."

Bethany: There were a few thoughts from the past ... that managed to arise which caused my mind to spiral, but instead of spiraling out of control, I took deep breaths and let my mind come back to its calm state and then my body. I feel like this practice is allowing me to take a step back and see things from a new perspective. It is really beneficial for me, personally, as well as for my relationships around me. (Excerpt from Bethany's digital journal, July 26th)

Bethany constantly paid attention to her breath and used it to develop higher mental stability. Being with her breath stopped her from spiraling in the cycle of overthinking. It also helped her improve her wellbeing and relationships with her students.

Bethany: Today while I was teaching, I had some difficult students and instantly my heart rate sped up with irritation rising. Thankfully, I was able to remind myself to take deep breaths and remember that anger won't solve anything here .... (Excerpt from Bethany's digital journal, July 27th)

When Bethany paid attention to her breath and heart rate, she developed higher awareness towards the behavior of the mind.

**6.7 Understanding Non-Self**

After practicing mindfulness on a daily basis for two weeks, Bethany became more sensitive to changes in the emotions. She began to wonder if this form of meditation exercises was good for her wellbeing. Below is an excerpt from her journal:

Bethany: Today I started my day being aware of my thoughts and how they could impact my breath and my heartbeat .... Later brought a frequent and intense amount of emotions. I've been in a low spot with my life and I am feeling strong emotions. I am starting to wonder if this meditation and awareness practice is making me feel a bit anxious or nervous because I am more in tune with myself .... (Excerpt from Bethany's digital journal, July 28th)

Bethany had a lot of doubt towards herself and the practice because she was not used to letting her mind be natural. However, when Bethany practiced mindfulness on a daily basis, she began to realize that the mind was always changing no matter how hard she had tried. In the seventh practice, we invited Bethany to observe the natural changes happening to her body.

*Seventh Practice: July 29th*

Item 22: "I notice that sometimes my body moves without intention."

Item 23: "I allow my body to move naturally and observe what it is doing."

Bethany: I took a lot of deep breaths to bring myself back to the present moment. Yoga was a great way for me to remember to breathe and focus on the breath and when the thinking mind took over, I was able to recognize this and come back to the body, moving on the mat from one pose to another. I am feeling more at peace than a few days ago, which I believe is due to this mindfulness practice. (Excerpt from Bethany's journal, July 30th)

#### 6.8 *Practicing Empathy, Not Sympathy*

Learning how to communicate with others mindfully can be a great exercise for nurturing present awareness. When we are talking to others, especially intense conversations, our mind tends to immerse in thoughts and gets restless. During the ninth practice, Bethany had a difficult conversation with a friend and experienced a lot of physical sensations during and after the talk.

Bethany: I had a difficult conversation with that friend (I told you about last week); it was stressful because there were a lot of emotional topics that got brought up. During this time, I was able to remain calm (mostly), but the physical sensations took over. ... My shoulders and neck got so tight and tense and by the time the conversation ended, I had a very powerful headache. (I am thankful for mindfulness, as it has helped me form more rational ideas and brings me some peace of mind (so far!)) (Excerpt from Bethany's digital journal, August 6th)

If Bethany experienced stress and headache when she was listening to her friend, it is possible that her mind got lost in stressful thoughts and identified with her friend's negative emotions. Hence, we assigned a heuristic to her which helped her cultivate more present awareness.

*Tenth Practice: August 7th*

Item 20: "When I notice a strong emotion in my friends, I empathize without being drawn to their emotions."

Bethany: I have noticed strong emotions in a few people around me; at first, I found myself starting to also feel those same emotions, but I reminded myself that it's not my place. This is something that I've always struggled with. I care so much about my loved ones that I tend to get stressed over their problems. This time, I listened with an open heart and was just there for emotional support. It felt good to be there and listen, without feeling my body tense up. (Excerpt from Bethany's digital journal, August 10th)

#### 6.9 *Understanding Impermanence*

Mindfulness in a Buddhist sense is more than just for cultivating peace in the mind because peace, like other mental states, is transient. Suffering results from our striving to sustain a certain state forever. For Bethany's twelfth practice, we assigned a heuristic to help Bethany notice the transient nature of her mind.

##### *Twelfth Practice: August 14th*

Item 35: "I notice whenever the mind moves out to see, to hear, to touch, to smell or to think."

Bethany: Today in my mindful yoga practice, I noticed when my mind moved out to see, hear, touch, smell and think. By being more aware of this, it really helps me move more mindfully and be more present on my mat. I also noticed my breath is always there to support me, no matter what situation I may face! (Excerpt from Bethany's journal, Aug 17th)

Bethany chose a bird's-eye view to observe how the mind move towards different senses. Rather than obsessing with the situation in the foreground, she constantly brought her focus back to her breath at the present moment. This is a sign of the stable observing quality of the mind.

#### 6.10 *Observing Biases*

As Bethany experienced more moments of mindfulness and peace, she became frustrated when she was not mindful sometimes. In the sixth week of the program, she felt her practice became stagnant. Hence, she was struggling to maintain focus. Bethany did not notice that her desire to detach from emotions had made it harder for her to get unstuck from emotions. Hence, we added a new heuristic that helped her notice her biases towards different phenomena:

*Eighteenth Practice: September 1st*

Item 41: "I notice how the mind reacts to the things that it likes and the things that it doesn't like."

Bethany: Today I observed the way my mind held onto emotions of happiness and feelings of discomfort. This is challenging to just observe, without completely wanting to control my mind. This practice is good for me, as I am used to being in charge and making things happen the way I want them to. Becoming a stable observer has taught me to let things be & relax more. (Excerpt from Bethany's digital journal, September 2nd)

**6.11** *Cultivating Resilience*

For Bethany's nineteenth practice, we sent her a heuristic to evaluate her awareness of her reactions towards life challenges and uncertainty in her daily life:

*Nineteenth Practice: September 4th*

Item 40: "I remain flexible and stable when I face challenges and uncertainty in daily life."

Bethany: Today I really focused on the last pointer and found that I was able to remain stable and flexible when I faced challenges or discomfort in my day. It was not easy at first, but I was happy to observe that my mind was able to remain calm, even when thinking about stressful things. (Excerpt from Bethany's digital journal, September 7th)

**6.12** *Noticing Craving*

Craving/attachment is a subtler phenomenon than aversion because it is harder to notice that craving may eventually lead to pain. However, a mind that is struggling to get happiness from outside is actually restless and anxious. Such restlessness originated from the desire to hold on to happiness as well as the fear of losing happiness. For Bethany's twenty-fourth practice, the heuristic is about noticing the mind's craving for happiness.

*Twenty-fourth Practice: September 19th*

Item 29: "I notice the constant struggle to feel happy throughout the day."

Bethany: When I noticed feelings as well as thoughts of doubt, worry, insecurity, or any defilement really, I was able to just notice, without holding

onto the feeling(s). It was much easier to just be ok with thinking it and then letting it go. The instant I let it go, calm and freedom remained. I also noticed that when I felt happy, I was able to embrace the feeling in the present, without having a fear of 'losing' the feeling in the future moments. (Excerpt of Bethany's digital journal, September 19th to 21st)

As Bethany noticed the struggle to gain happiness, she could remain present with the happy feeling without letting the struggle ruin her experience. She embraced the novelty of each new moment.

#### 6.13 *Agency in Mental Health*

For the final practice, we repeated three heuristics (i.e., item 13, 24, and 33) to help Bethany develop a non-striving attitude in her mindfulness practice.

Bethany: My emotions were felt, but I had the tools to lessen some stress and not feel so heavy and unpleasant. I could also sense when the mind was knowing naturally and when it was trying too hard. I have experienced first-hand from this program and practice that life is not so beautiful. Yes, while it has beautiful features in it like that natural world, there are many things wrong with this world, like society and people. (Excerpt of Bethany's digital journal, Sep 23rd–27th)

When Bethany was able to embrace the unsatisfactory nature of existence, there was less striving in her daily life. Moreover, the stressful thoughts/feelings/emotions became less heavy.

Bethany: This mindfulness practice has opened my eyes to a new realm of spirituality. I feel more in tune with myself, able to recognize that I am not this self. I am not my feelings, thoughts, nor judgments. Mindfulness brings me a peace of mind and more clarity throughout my days. I will continue practicing because it has grown to become a part of this self and this mind! (Excerpt of Bethany's digital journal, Sep 23rd–27th)

Through understanding the non-self nature of the body and mind, Bethany experienced less judgments towards herself and others. Hence, there was more peace and clarity in her daily life.

#### 6.14 *Findings from Interviews*

In our first interview on July 16th, 2020, Bethany mentioned that she was going through a difficult time in her life. The situation of COVID-19 in France was

getting worse and her job situation was uncertain. Thus, she was looking for ways to feel better. Prior to the program, she had been practicing yoga and meditated every day. However, she would like to cultivate a routine that integrated mindfulness into her daily life.

In the second interview on September 9th, 2020, during the middle of the program, Bethany felt a new sense of freedom because she could just be the observer of her thoughts without dwelling in her emotions. She said she felt impressed with her mind's capacity to find more peace throughout the day. And she said mindfulness had improved her personally and her relationships with others. Moreover, she mentioned her mindful presence began to "rub off" on others. For example, her boyfriend began to feel interested in mindfulness practice and tried to meditate on his own for a while.

In our final interview on September 28th, 2020, this program had completely changed her understanding about the nature of mind and mindfulness. She used to think that mindfulness practice is the same as yoga or meditation that aims to relax or to uplift the mood. However, the mindfulness practice introduced by this program is a totally different game because it is about knowing herself. She said she was a perfectionist and liked to be on top of everything. However, when she noticed that this body and mind are not fully under her control, she was learning how to let go of that control and see things as they are. She reflected on this experience during the interview and said she was now more courageous to face negative emotions. She also mentioned that mindfulness practice was like self-therapy in the sense that she could rely on herself when she faced difficulties.

## 7 Application of Mindfulness Heuristic in Education

Bethany's story shows us the possibility of human beings to find a sense of wellbeing through transcending the ups and downs of life. We do not need to be enslaved by our surrounding living conditions for happiness. We have the potential to find peace even amidst uncertainty through knowing ourselves. When we understand the impermanent nature of this body and mind of ours, we will not expect everything to remain in good condition all the time. We understand that even this body and mind of ours are always subject to change, and therefore so does this world that we are living in. And when we understand that this body and mind are not under our full control, we stop judging ourselves and others. We have a peaceful understanding that everyone is under the influence of defilements and we are all suffering. Hence, there is no reason to inflict more suffering to ourselves and others. With mindfulness, we can empathize with others and work together for the greater good.

The characteristics of mindfulness, such as being present, aware, compassionate and equanimous to difficulties, are important qualities of teachers, because they are usually considered as the exemplars of emotional regulation for students. Unfortunately, many education systems right now are nurturing greed, aversion, and delusion in the school communities instead (Bai, 2019). Hence, practices that nurture mindfulness, happiness, compassion and mental stability should be the priorities of 21st-century schools.

In order to nurture a mindful learning environment, first teachers need to cultivate mindfulness within themselves and experience the benefits of mindfulness practice directly. Once they are familiar with the fundamental principles of mindfulness practice and experience the benefits of mindfulness in their daily life, they can begin to introduce mindfulness practice to students. For example, characteristics of the MiDL Heuristic can be introduced to students as objects of contemplation throughout the day. Teachers can also use them to frame a class discussion around a salient sociocultural or socio-scientific issue. We recommend teachers to focus on Moral Living for younger students, as the heuristics in this category are relevant to children's daily life experiences and are easier to practice. Teachers may introduce the heuristics from the Mental Stability category to older students that have longer attention span. The Wisdom Training is more suitable for high school students or adults as it requires a good foundation in morality and mental stability to begin with.

As some of the characteristics are still challenging for beginners, we needed to provide a lot of explanation and additional learning resources to support participants' practice. In the near future, we intend to modify the MiDL Heuristic so that it can be used by anyone to develop a healthier and more sustainable lifestyle that is good for personal health and the wellbeing of other species in the ecosystem. When we become aware of our own greed, aversion and ignorance, we also become more conscious of our impact on the environment and understand that our wellbeing depends on the wellbeing of other species, minerals, water, air, soil and other components of our ecosystem. With mindfulness, it is possible for us to experience harmony within ourselves and with our Mother Nature.

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## Appendix A

### *Mindfulness in Daily Life Heuristic (First Iteration)*

Indicate the frequency of occurrence from 1 = "Very often (almost every day)"; 2 = "often"; 3 = "Sometimes"; 4 = "rarely"; 5 = "Very rarely (almost never)"

1. I try my best not to kill or harm any human being, animal, or plants.
2. I try my best to be truthful and only speak when necessary.



3. I try my best not to indulge in intoxicants, including alcohol and recreational drugs.
4. I try my best to be faithful in a relationship and to protect the integrity of couples and families.
5. I try my best not to take advantage of others.
6. I accept my body as it is.
7. When I feel uncomfortable, I notice the discomfort without having to avoid it.
8. When I feel happy, I notice the feeling without holding onto it.
9. I notice the anger without suppressing or reacting to it.
10. I notice the restlessness in the mind without suppressing or reacting to it.
11. I notice in the moment of mindfulness, there is no greed, anger or delusion in my heart.
12. I notice the moment when my body contacts an object before interpretation happens.
13. I sense whatever feeling arises without labeling it or categorizing it.
14. When I sense the greed arising in the heart, I notice it without thinking of a reason to justify it.
15. I notice the rising and falling of thoughts without paying attention to their content.
16. I sense something stirring in the mind without knowing what exactly it is.
17. I sense my body at the present moment, whether sitting, walking, standing or lying down.
18. My attention returns to the breath quickly after it wanders away.
19. I watch my feelings without getting lost in them.
20. I notice the mind wander from the present moment experience.
21. When I notice a strong emotion in my friends, I can empathize without being drawn to their emotion.
22. I am aware of the cause for my present experience.
23. I notice that sometimes my body moves without intention.
24. I allow my body to move naturally and observe what it is doing.
25. When a feeling arises, the mind automatically recognizes it.
26. I automatically recognize the change of thoughts without holding attention forcefully.
27. I notice that all physical and mental processes happen automatically without anybody controlling them.
28. I regard the body as a physical mass that does not belong to anybody.
29. I notice that my body is constantly changing its posture.
30. I notice myself scratching my body constantly because of subtle itches.
31. I notice the tension around my chest as I breathe in and out.
32. I notice a feeling is something different from a thought.

33. When I experience discomfort, the mind gets unstuck from the feeling quickly and moves on to the next moment.
34. I notice the constant desire to feel happy throughout a day.
35. I watch thoughts without identifying with them.
36. I notice that the thinking mind is different from the observing mind.
37. I notice my emotions change frequently throughout a day.
38. I notice the mind struggle to sustain a peaceful mental state.
39. When doubt arises in the heart during formal meditation, I am aware of its cause and notice how it influences my practice.
40. I am aware of the emotions behind my actions.
41. I see this body and mind as the suffering proper.
42. I notice when the mind moves out from the object of meditation.
43. I practice sitting or walking meditation every day.
44. When I focus on my breath, I feel relaxed and peaceful.
45. I observe my breath without sinking into it.
46. I notice the mind is nimble, light, and moving from one moment to the next.
47. I sense a difference between the observer and the observed phenomenon.

*Open-ended questions*

48. From your perspective, which statement(s) is unclear? Why?
49. From your perspective, which statement(s) is difficult to give an answer? Why?
50. Can you think of any other phenomena that are important for developing Vipassana but are not included in this heuristic?

## Appendix B

### *Mindfulness in Daily Life Heuristic (Second Iteration)*

Indicate the frequency of occurrence from 1 = "very often" (at least once per day), 2 = "often" (at least once per week), 3 = "sometimes" (at least once per month), 4 = "rarely" (at least once per 3 months), 5 = "very rarely" (almost never).

1. When I notice some small insects on the ground, I avoid stepping on them so that I will not harm them.
2. I am aware of how the comments and information on the Internet influence my thoughts and emotions.
3. When I communicate in person or online, I remain honest, polite, kind, and understanding.
4. I eat and drink in a way that is good for my health and mental clarity.
5. I put effort to nurture healthy relationships with my partner, family, friends, and co-workers.

6. I share my time, energy, or materials with those who are in need.
7. I observe my body without judgment.
8. When I feel uncomfortable, I notice the discomfort without having to avoid it.
9. When I feel happy, I notice the feeling without holding onto it.
10. I notice the anger without suppressing or reacting to it.
11. I notice the restlessness in the mind before it manifests into anger.
12. After I notice my body contact an object, I move on without thinking about it.
13. I can notice a physical (e.g. body movement) or mental phenomenon (e.g. feeling, thought, or emotion) after they happened without thinking about it in advance.
14. When I sense anger arising in the heart, I notice it without thinking of a reason to justify it.
15. I notice the rising and falling of thoughts without paying attention to their content.
16. I sense something stirring in the mind without knowing what exactly it is.
17. I sense my body at the present moment, whether sitting, walking, standing or lying down.
18. My attention returns to the breath quickly after it wanders away.
19. I watch my feelings without getting lost in them.
20. I notice the mind wander from the present moment experience.
21. When I notice a strong emotion in my friends, I can empathize without being drawn to their emotions.
22. I notice that sometimes my body moves without intention.
23. I allow my body to move naturally and observe what it is doing.
24. When a feeling arises, the mind automatically recognizes it.
25. I automatically recognize the change of thoughts without holding attention forcefully.
26. I notice myself scratching my body constantly because of subtle itches.
27. I notice the tension around my chest as I breathe in and out.
28. When I experience discomfort, the mind gets unstuck from the feeling quickly.
29. When I experience discomfort, the mind gets unstuck from the feeling quickly.
30. I notice the constant desire to feel happy throughout the day.
31. I am aware of the change in the rate of my heartbeat when I feel irritated.
32. I notice my emotions change frequently throughout a day.
33. I notice a change in the way I breathe when my emotions change.
34. I can sense when the mind is knowing naturally and when it is trying too hard.
35. I am aware of the emotions behind my actions.
36. I notice whenever the mind moves out to see, to hear, to touch, to smell, or to think.
37. When I focus on my breath, I feel relaxed and peaceful.

## MINDFULNESS IN DAILY LIFE HEURISTIC

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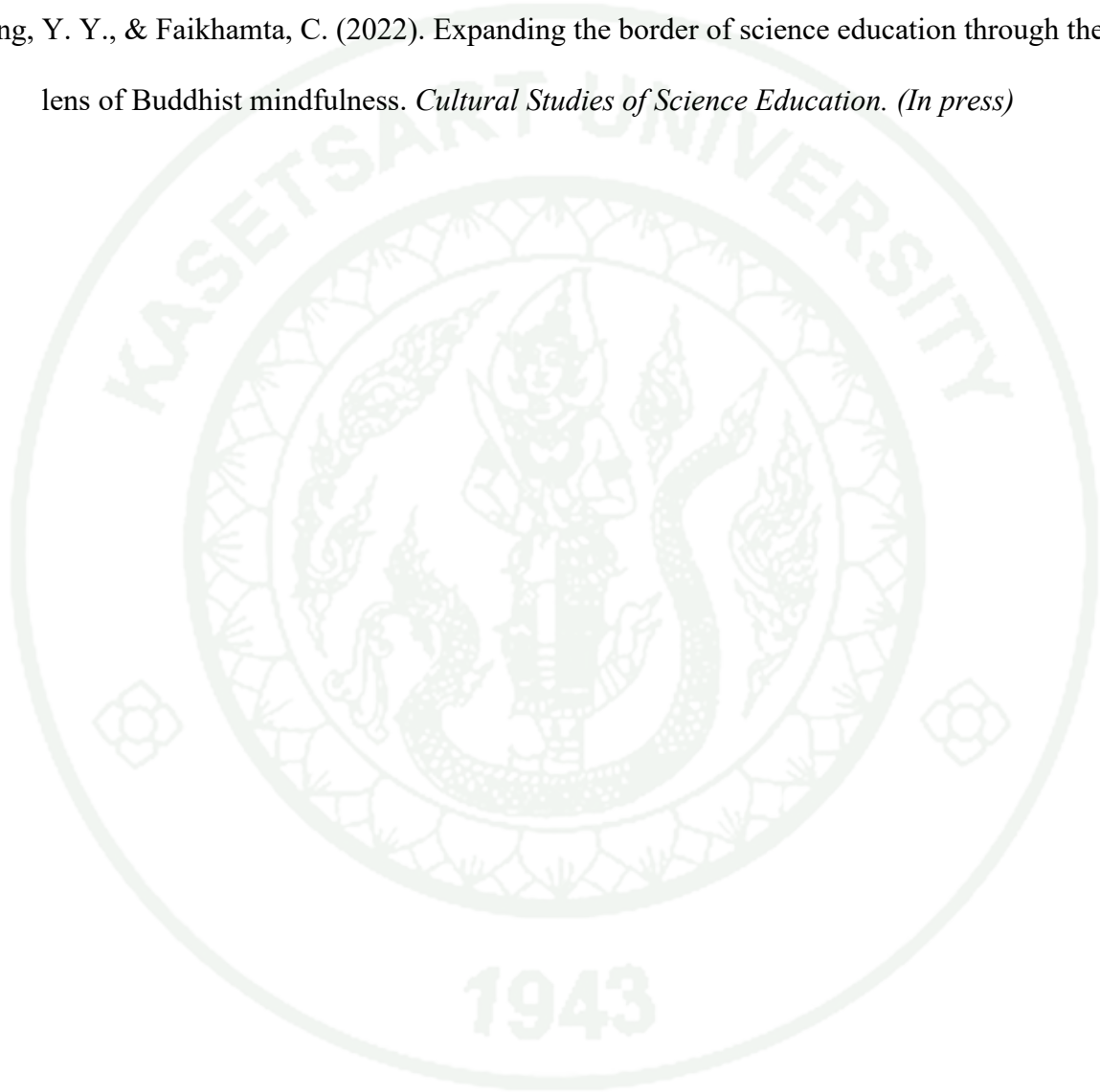
38. I notice the mind is nimble, light, and moving from one moment to the next.
39. I sense a distance between the mind and the body.
40. I notice that I feel disappointed whenever the mind is not at peace.
41. I remain flexible and stable when I face challenges and uncertainty in daily life.

*Open-ended questions:*

42. From your perspective, which statement(s) is unclear or difficult to give an answer? Why?
43. How do you feel after completing the heuristic?
44. Can you think of any other phenomena that are important for cultivating mindfulness but are not included in this heuristic?

**Publication 5**

Wong, Y. Y., & Faikhamta, C. (2022). Expanding the border of science education through the lens of Buddhist mindfulness. *Cultural Studies of Science Education*. (In press)



**Expanding the border of science education through the lens of Buddhist mindfulness**

**Yau Yan Wong<sup>1</sup>, Chatree Faikhamta<sup>2</sup>**

**Abstract** This is a hermeneutic phenomenological study that describes and interprets Wong's (the first author) lived experience in the borderlands of science and Buddhist mindfulness as a science education doctoral student in Thailand. Through using Wong's autobiography and interpreting the transcripts from several cogenerative dialogues with three vipassana teachers from Buddhist traditions, we explore the affordances of being in the borderland of science and Buddhism, and how Buddhism can expand the border of science education through the inclusion of important topics, such as mindfulness, emotional wellbeing, and interbeing. This study also examines the roadblocks that are preventing deeper integration of science and mindfulness, including empiricism, scientism, individualism, materialism, and dualism. Our standpoint is that to overcome the 21<sup>st</sup> grand challenges, teachers of science need to have the courage to cross the borders of various disciplines and help students develop essential skills for cultivating a healthy, balanced, and mindful lifestyle.

**Key words** borderland • science education • mindfulness • wellbeing • mental health

**摘要** 这篇文章以诠释呈现学探究第一作者黄老师身为科学教育博士生在科学研究与禅修的边疆的经验。透过分析黄老师的自传和她与三名内观禅修者的对话，我们探索在科学研究与禅修的边疆中有哪些转化科学教育的契机，并且深入研究一些道至科学不能跟禅修深层次结合的障碍，例如经验主义、科学主义、个人主义、唯物主义和二元主义。我们的观

Lead Editors: Angela Chapman and Alejandro Gallard M.

W. Yau Yan ( )  
Science Education Division, Department of Education, Faculty of Education, Kasetsart University, Thailand  
email: yauyan.wo@ku.th

F. Chatree ( )  
Science Education Division, Department of Education, Faculty of Education, Kasetsart University, Thailand  
email address: feduct@ku.ac.th

点是科学教育家需要勇于跨越传统学科的界限，帮助学生培养健康、平衡和有觉性的生活方式，让他们能够面对二十一世纪的挑战。

**主要詞語** 边疆 • 科学教育 • 正念 • 福利 • 精神健康

#### **Living in borderlands**

I was born in Hong Kong, a metropolitan city in China that was once colonized by British about over a century ago. In the past, there was a political border separating Hong Kong as the British sovereign state and mainland China. A border is a rigid and clear-cut form of boundary (Mura 2016). It set, organized, and regulated people's social and psychological existence (Marsico 2016). Unlike borders, borderland is fuzzy and diffuse. Hong Kong was a borderland, a political and geographical area near a boundary where the East met the West. On the surface, Western values such as capitalism, consumerism, and individualism appeared to dominate the mainstream culture of the city. However, many Hong Kong Chinese still upheld a lot of Chinese values and traditions. After the turnover to China in 1997, Hong Kong Chinese remain as border citizens living in a cultural interface.

Life in the borderlands often produces uncertainty, tension, and constant negotiations of identities because it is a space where differences and contradictions become explicit (Nelson and Phillips 2018). Throughout my life, I have been crossing many geographical borders as well as ideological borders. I always negotiate between different identities such as Chinese, British, Thai, teacher, science educator, and mindfulness practitioner. As a seasoned border citizen, I do not feel the need to adhere to a particular identity or an ideology. All ideologies are different lenses that people use to see the world depending on the space and time. I see difference as a learning opportunity. Egon Guba and Yvonna Lincoln (1994) wrote that any given paradigm or worldview

merely represents the most sophisticated view of its proponents, and they are all inventions of the human mind that are subject to human error, no matter how well argued. Problems arise when people become attached to a fixed identity or a particular ideology that they fail to notice the biases associated with their lenses and reject other knowledge systems prematurely. When a person is fixated on certain beliefs about what the world should be like, how the world should be known and what knowledge is more valuable than others, it leads to prejudice, discrimination, and oppression of other knowledge systems.

In this article, I examine the borderlands of ideologies, particularly science and Buddhism. Since the rise of Enlightenment in the West, there has been a division between science and spirituality. Science is not only a rational methodology for inquiry but has evolved into scientism, a new scientific and dogmatic worldview that informs people what to believe and how they should live their lives (Walach and Rich 2019). Scientism originates from logical empiricism that aims to structure philosophical discourse for verifying scientific theories and to align all human knowledge into a scientific worldview (Godfrey-Smith 2010). However, the ontological and epistemological assumptions of scientism are oppressing other ways of knowing (Tobin 2015) and limiting the potential of science education in moving global citizens towards a healthier and more sustainable future.

Practicing mindfulness is not about convincing ourselves to value every single knowledge system or paradigms equally, but it is about knowing when the mind is biased and how our emotions mediate our thoughts, our being, and our relationship with others. It is about knowing that thoughts, views, beliefs, feelings, emotions, and even consciousness are uncertain, everchanging, and imperfect. And all these mental phenomena play an important role in how we make sense of this world. It is vital for scientists to know how all faculties of the human mind



work together, rather than just fixating on cognition. In addition, mindfulness supports the cultivation of self-awareness, resilience, empathy, and the ability to take alternative views, which are important qualities for being a socially responsible global citizen. Thus, we advocate mindfulness to be included as an important part of the 21<sup>st</sup> century school curriculum.

A border is an outer edge, the end of a safe zone, and the beginning of an unsafe zone (Nelson and Phillips 2019). A safe zone is where certainty and coherence are assumed, whereas an unsafe zone is an uncertain and an open space. Borders create fear and crossing presumes risk (Lugo 1997). Quite often, people build thick borders around an identity and around a community so that they can feel somewhat safe. However, we are suggesting that rigid ideological or disciplinary borders are not necessary. The purpose of this study is to dissolve boundaries such as social science and science education, science and spirituality, self, and others, human and nature, through the lens of mindfulness. Through including multiple voices and worldviews, I intend to demonstrate that embracing uncertainty can lead to innovation, awakening, and healing.

This is a hermeneutic phenomenological study about my experience as a science education doctoral student in Thailand, crossing the borders between Buddhist mindfulness practice and science education. Phenomenological studies aim to understand the essential meanings of a social phenomenon through penetrating deep into human experience (van Manen 1997). Paul Ricoeur explains that hermeneutic phenomenology used self as the subject matter of knowledge, creation, and value acts (Petrovic 2013). Through describing and interpreting the subject's lived experiences, the readers get to see how the subject makes sense of the world.

I consider cogenerative dialogue (i.e., cogen) as an appropriate research method to study borderlands because cogen aims to examine the contradictions and nuances between different ontologies. Cogen is a multilogical research method developed by Kenneth Tobin and his

colleagues. Cogen embraces diversity of voices as a resource and addresses the needs of all stakeholders without prioritizing anyone's voice in discussions around a salient topic of interest (Tobin 2015). To gain a deep understanding of Buddhists' ontology, epistemology, and axiology, I invited Jess Koffinan, an experienced mindfulness instructor from Canada, to engage in a series of cogens surrounding the topics on mindfulness, education, and society. Later, Koffinan introduced Venerable Krit Nimmalo and Malee Palawongse, who are renowned mindfulness educators in Thailand to join our conversation. All coresearchers participated in a hermeneutic cycle to interpret the transcripts of cogens. I seek to explore the affordances for being in borderlands and transcend the roadblocks that are blocking the deeper integration of science and mindfulness practice, including scientism, individualism, materialism, behaviorism, dualism, and religious dogmatism.

#### **Behaviorism in contemporary psychology**

My interest in studying the human mind comes from my motivation to help a close relative called Lucy (pseudonym) who suffered from depression. Lucy grew up in a turbulent family and experienced physical abuse in her childhood. Although she had a successful career and a loving husband in adulthood, she had difficulty in managing her emotions. She constantly ruminated about her traumatic childhood experiences and seemed to be trapped in the past. Whenever a stressful situation arose, Lucy began to have suicidal thoughts. Her unstable mental state had a negative impact on her health, but she refused to seek professional help.

Depression is a common disorder that has enormous medical, social, and personal costs. It often starts early in life and runs a recurrent course (Fletcher 2021). I wanted to understand the cause of depression and find a way to help Lucy as well as other friends who suffered from depression. Therefore, about 20 years ago, I chose psychology as my major in college. Since the beginning of

the twentieth century until now, psychology and education were dominated by a variety of empiricist epistemologies, including behaviorism, instrumentalism, and pragmatism (Kincheloe and Tobin 2009). Behaviorism is a derivative of empiricism, assuming that objective behavior is the only concern of research and the only basis of theories that explain one's social life. Hence, behaviorism rejects introspection and consciousness, and the main goal of behaviorist psychology is to predict and control human behaviors (Kincheloe and Tobin 2009). Throughout the six years of studying psychology, I learned how to understand people through examining their brain activities or behaviors with psychophysiological tests. However, I rarely learned how to self-reflect or to understand my own suffering at a deeper level.

I tried to apply the theories that I learned from psychology courses into practice while I was volunteering as a crisis hotline counselor at the New River Valley Community Center for about 18 months. My job was to provide counseling service to people who attempted to commit suicide, and to liaise with the police to identify their locations in case of emergency. The knowledge that I gained from lectures on clinical psychology and neuroscience helped me identify what kind of mental illnesses my clients suffered from. However, I realized that it was not enough to help my clients get unstuck from their negative emotions and the vicious cycle of self-harm. Quite often, clients with depression were trapped in a negative narrative about themselves and others. Most of them were taking psychiatric drugs, which helped them alleviate some symptoms but rarely cured their mental illnesses. Sometimes, the use of anti-depressant comes with some negative side effects, such as lower libido and weight gain, which deter patients from using anti-depressants.

Understanding the physicality of the brain is not the same as understanding how the human mind works. Based on many cases of suicides that I dealt with, I learned that depression is more complex than a chemical imbalance in the brain. Every client has a unique journey of self-discovery and

spiritual growth. Through offering my attention and empathizing with my clients' lived experiences, I understood a lot more about suffering than interpreting numerical data from psychometric tests. I recognized that reducing all mental phenomena to scientific accounts of physiological processes and states does not lead to insights about the root cause of mental illness, the essence of people's lived experiences, or any meaningful individual and social transformations. Moreover, most of my clients were college students. I noticed that mental stability was crucial for concentration and school satisfaction. However, in many schools, students are rarely taught how to manage their own emotions when their lives get difficult.

#### **Turning to Buddhism**

I was baptized as a Catholic when I was five. Most of my family members, including Lucy, are Catholics and we joined the Sunday service every week for many years. I love the story of Jesus, who is the symbol of love and compassion. However, I do not like the idea that God banishes those people who are not Christians to hell. I think that is not what a loving god will do.

After graduating from college, I began to learn about Buddhism. I explored how contemplative practices could help people get unstuck from negative emotions and suicidal thoughts. I moved to Thailand in 2009 and worked as a science and math teacher in an international school in Bangkok. During a one-day retreat in 2010 in Pakchong, I came across Thich Nhat Hanh, a Buddhist monk who founded the Plum Village monastery in France. The retreat began in early morning. We first had vegan breakfast and Hanh led a walking meditation. Hanh asked his students, "Do you know how to walk? Have you arrived?" I found these questions intriguing because who did not know how to walk. Hanh explained, "When we walk, we bring our body and mind to the present." This was the first time that I had practiced walking meditation. I noticed that my mind was always busy thinking while I was walking. However, I experienced several short moments in which my mind

stopped thinking and just enjoyed the silence. Those moments of getting unstuck from thoughts were rejuvenating.

After the walking meditation, followers from different countries and religions gathered to listen to Hanh's dharma talk. Hanh shared his experiences in the Vietnam War. He was a peace activist who tried to persuade both the American leaders and the communist party in Vietnam to stop the war. However, he was not welcomed by both parties and was exiled to France. In other words, he had lived in a borderland as well. His experiences motivated him to promote world peace through engaged Buddhism. Hanh's passion in engaging young people in mindfulness practice and reducing their suffering deeply touched me.

After the retreat, I began to study Hanh's teachings. I recognized that Hanh dedicated his life to breaking down boundaries. For example, in his book entitled *Going home: Jesus and Buddha as brothers*, he explains how such concepts as holy spirit and mindfulness converge. He also encourages people to embrace Buddha and Jesus, the symbols of compassion, in every moment of their daily life. Before reading this book, I worried that my identity as a Catholic might conflict with my new identity as a Buddhist. However, this book brought me the peace of mind because according to Hanh, both Christianity and Buddhism aim to help people reduce suffering.

Hanh emphasizes the importance of cultivating true happiness and true love. He said true happiness is possible when we love ourselves, others, and every part of nature in an equanimous way. Thich Nhat Hanh and Katherine Weare (2017) propose that mindfulness helps us overcome dualistic way of thinking, that is a mentality that separates good from bad, suffering from happiness, human beings from nature and so on. Moreover, his book entitled *Interbeing* explains the dialectic relationship between human beings and nature. Interbeing is the insight of non-self or the

interconnection among all beings and things in our ecosystem. Through the insight of interbeing, we can empathize with the suffering of other beings and stop harming each other.

Since 2011, I have been participating in a by-monthly gathering with the Plum Village community called A Day of Mindfulness. Later, I joined the Mindful Living program with a few fellow teachers and spent time with the monastics. Most of the participants had been through some traumas, such as wars, abuse, or death of loved ones. They regarded the Plum Village as a place for healing and for transform sadness into wisdom. Spending time in nature, getting away from city life, and being in noble silence are essential for the mind to take a good rest. Living in the Plum Village made me fall in love with the forests. I thought it would be a wonderful learning experience for my students to appreciate the richness of nature, rather than just reading about it from science textbooks.

I slowly adopted the practices from the Plum Village, such as being with nature, being present with every daily activity, deep relaxation, and slowing down, my lifestyle. Moreover, I began to explore how I could use mindfulness practice to enhance my students' psychological resilience. I described my experiences in a book chapter entitled *An autobiographical study about an educator's journey in awakening, healing and liberation through mindfulness practices* (Yau Yan Wong 2020).

#### **The problem with scientism**

Since 2011, I have been devoting my energy to enhancing students' emotional intelligence through conducting research related to mindfulness practice in my classroom. Wellness, sustainability, and literate citizenry are the highly desirable goals of science education and mindfulness practice is a promising practice in achieving these goals (Powietrzynska, Tobin and Konstantinos 2015). I consider the science classroom as an appropriate context for mindfulness practice. Since 2019, I

have been pursuing a doctoral degree in science education, attempting to promote wellbeing and a sustainable lifestyle in my school community through mindfulness practice.

In the beginning of my doctoral study, I realized that I stepped into a borderland. I faced resistance from many researchers that I came across in Thailand, who considered mindfulness as a construct that is limited to Buddhism or psychology only. A Thai science educator once told me that scientists are supposed to study phenomena that are observable and measurable. Hence, this educator argued that human emotions, consciousness, or spirituality are beyond the scope of science. I asked him which subject in schools would cover topics related to mental health. He said, "I don't know. Maybe educational psychology or Buddhist Studies, but not science education for sure."

What the above educator said is about scientism, not science. If science is about understanding natural phenomena by means of rational methods of inquiry, it can also be used to study people's inner experiences. However, scientism on the other hand is a worldview that extends the insight of natural sciences to all other aspects people's way of thinking and living (Walach and Keich 2005). Historically, there is a boundary between social science and natural science. Social science is regarded as soft science whereas natural science is regarded as hard science. The degree of hardness is determined by the level of objectivity and quantification. Moreover, there is a separation between human beings and other animals or matter. Social science is about human beings, but natural science is about other livings things, matter, or energy. The paper on animism by Heesoon Bai's (2015), a Korean philosopher, criticizes that such a dualistic way of thinking in science education has caused the disconnection between human beings and the rest of the ecosystem and the deterioration of our planet.

In the past, social scientists attempted to borrow empiricism from natural science to make social sciences more rigorous. Behaviorism as a derivative of empiricism restricts the scope of inquiry to the outer experiences and objects that can be observed, measured, or produced. As a result, topics like emotional wellbeing, moral conduct, lifestyle, consciousness, and other inner experiences are attributed to the realms of religion and philosophies. However, numerous scholars such as Immanuel Kant criticized such approach ignored the free will and agency of human beings (Taylor 2014).

Scientism and behaviorism have significant impacts on our education system. For too long, modern education has been focusing much on collecting data, efficiency, and productivity. Educators have devoted too much energy to training students to absorb more information and process information better and faster like computers. However, the happiness and wellbeing of students often take the backseat in the agenda of a school curriculum (Tobin 2017). The inner learning experiences of students and their mental health have become less important than being competitive in the job market. As a result, our youth has become lonely, depressed, and violent.

According to a survey conducted by UNICEF and the Department of Mental Health (DMH) in Thailand, increasing numbers of students face stress, anxiety, and depression. The findings indicate that in Thailand about 28% of adolescents experience high levels of stress, 32 % are at risk of depression and 22 % are at risk of committing suicide (UNICEF 2021 Oct 8). This mental health crisis among young people is not just caused by the pandemic but also the negligence of students' happiness and agency. Bai (2019) criticized the mechanism of modern education, which has been turning our youth into learning machines and depriving them from their vital core. Students rarely learn how to be reflective, to cultivate self-compassion and happiness from within.



Cultivating wellbeing should not be contained within the discipline of psychology subject, but rather the goal of learning science and other subjects. Science education is a borderland between social science and natural science. The role of science educators is to train student teachers to teach science. That means science educators not only deal with traditional science disciplines (e.g., biology, chemistry, and physics), but they also deal with students. I believe my knowledge in psychology is useful for me to understand student teachers' needs. I think my identity as a science educator is not limited to the technicality of teaching. It is also important for science educators to teach how to cultivate self-care skills, empathy, compassion, and mindfulness, which are essential skills of being a good teacher. In the field of science education, educators have the affordance to expand the agenda of science. Teachers of science need to think about how they can be part of the solution to the current mental health crisis among our youth.

In the second year of my doctoral study, Chatree Faikhantha, my thesis advisor, invited Kenneth Tobin to be my co-advisor. Tobin and his colleagues are the pioneers in integrating mindfulness practice with science education. The scholarship of Kincheloe and Tobin (2009) on the critique about positivist research methodologies allowed me to understand that I was not the only scholar that had been battling to expand the agenda of science education. Tobin (2015) advocates to prioritize practices that enhance students' wellbeing in science curriculum. Tobin and his colleagues, including Powietrzynska (2015) and Konstatinos et al. (2016), introduced various kinds of reflective tools such as breathing meditation and mindfulness heuristics in science classrooms to cultivate a polysemic and supportive learning space for authentic inquiry. Their research work became the foundation of my dissertation.

**Exploring Theravada Buddhism**

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Over the past 10 years, the context of my research has always been in Thailand, a Theravada Buddhist country. Since 2012, I began to explore insight meditation in Mahasi Sayadaw Buddhist tradition. Mahasi Sayadaw belongs to Theravada Buddhism originated from Myanmar. It focuses on cultivating mindfulness and concentration through mental noting phenomena based on the four foundations of mindfulness such as body, feeling, mind, and mental factors, throughout the day. Insight meditation aims to end suffering through understanding the four noble truths, that is seeing suffering, the cause of suffering, the end of suffering, and the path to enlightenment. I had been learning closely with a senior monk, Venerable Suksan for about a year and a half. During the silent retreat, I experienced many moments of happiness that was beyond sensual pleasures. I learned that happiness could also come from being unstuck from thoughts, anger, or greed. Knowing that happiness can be easily accessible in the present moment was an empowering and life-changing experience for me. I documented part of my experience within this tradition in my autobiographical study (Wong 2020).

I continued to explain another school of Theravada Buddhism, the Thai forest tradition. Since, 2018, I have been following the teachings of Venerable Pramote Pamojjo. Mindfulness practice in the Thai forest style is about letting the body and mind be as natural as possible and let mindfulness arise on its own throughout the day. Unlike Mahasi Sayadaw style, Thai forest tradition does not use mental noting. Venerable Pamojjo wrote that “mindfulness will occur as a result of clearly recognizing mental states as they arise, not from holding concentration in one spot, or mental noting, or forcing it into being” (p.116). Such approach has helped me change the habit of suppressing my emotions through cultivating appropriate mindfulness and appropriate concentration. I learned to allow mindfulness to arise automatically in my daily life without too much intention.

### **Understanding happiness**

I made friends with many lay practitioners within Venerable Pamojjo's monastery. As I am fluent in both English and Mandarin, I was involved in the Western as well as Chinese communities. Like the Plum Village, Buddhism brings people from different backgrounds to learn together. The monastery is also filled with wild animals, like roosters, dogs, cats, and snakes. Venerable Pamojjo always says these animals feel safe to live in the temple because they know the monks would not hurt them.

At the beginning, I did not understand Venerable Pamojjo's teachings. Therefore, I approached his teaching assistants for help. I was fortunate to meet Koffman, a long-time student and the English translator of Venerable Pamojjo and began to learn from him. During one of Koffman's online mindfulness course, he says that mindfulness practice is for cultivating an unwavering mind towards the ups and downs in life. He notes that mindfulness practice is not about holding onto happiness, but about understanding that none of the physical or mental state can be sustained or controlled. He explains that most people seek happiness through unreliable sources, such as wealth, career, relationships, entertainment, and traveling. However, these sources of happiness are quite unreliable because this world is always changing, never persist, and cannot be controlled. However, mindfulness is a higher level of happiness that is not dependent on whether our life is going well all the time. It allows us to be less caught up in what is happening in the foreground and become more aware of what is truly sponsoring our thoughts, emotions, and actions.

Koffman's teachings highlighted the salience of equanimity towards emotions and how mindfulness can help people adapt to the uncertainty in their lives. The concept of equanimity is quite contrary to our modern lifestyle. Individualism and materialism have led us form a habit to maximize happiness or avoid pain (or inconvenience) through controlling the distribution of

natural resources. We have been using science and technology to get our needs met through exploiting other species and forests. Yet, we rarely learn how to find happiness from within. The grand challenges that are threatening humanity now, including climate change, loss of biodiversity, pollution, and severe natural disasters, are caused by people's ignorance about their inner dimensions and their connections with nature. Hence, making science learning into a kind of cold cognitive activity cannot help to improve this world because much of the world's suffering has been caused by human beings' egoism, violence, and greed.

To change our habit of consumption, we need to notice our addiction to sensual pleasures through mindfulness and look deeply into the cause and effect of such addiction. Buddhist practices like renouncing the material world occasionally, joining mindfulness retreats, and spending some quiet time in nature afford us the opportunity to experience an alternative way of living. Then we will have the chance to notice a simpler, and more reliable source of happiness, that is fully living in the present moment.

#### **Cultivating mental stability**

Koffman introduced me to another Thai monk, Venerable Krit Nimmalo. Venerable Nimmalo is one of the most renowned vipassana teachers in Thailand, who is also promoting mindfulness in many schools. During the cogen with Venerable Nimmalo and Koffman on May 11<sup>th</sup>, 2020, I asked Venerable Nimmalo how we can observe the mind. He said we can observe in this moment the mind pays attention to something and the next moment it is paying attention to something else. He explained that consciousness is the part of the mind that knows the other four elements of existence. Without mindfulness, consciousness is immersed in the thought stream most of the time and bonded with the observed physical or mental object that arises. However, the mind can rise

above the thought stream when there is a stable observing quality. He describes the characteristics of the stable observing quality in consciousness as follows:

Nimmalo: There are two types of Samadhi (i.e., mental stability or concentration) ... So, with the first type of Samadhi, the mind moves out to object (i.e., paying complete attention to a physical or a mental phenomenon)...[In the second type of Samadhi, the mind does not move out to the objects (i.e., being aware without fixing attention on something). The mind is stable with the mind. The mind resides at the mind, not out to the object. (Transcript of video recording, June 11, 2020)

The above vignette highlights the salience of concentration in helping the mind to get unstuck from thoughts and emotions. This stable observing quality of the mind is crucial in have a meta-awareness of the cognitive and emotional schemas that are operating in the background of our daily experience. Hence, Venerable Nimmalo says this quality is conducive to wisdom cultivation (i.e., the understanding of the impermanent, uncontrollable, and unsatisfactory nature of our body and mind).

Venerable Nimmalo says most often when people got angry, they focused on who and what made them angry. They are completely lost in their anger and forget to observe their own mind. However, mindfulness allows us to see that there is anger in the mind, and it is different from the part of the mind that knows the anger. We become less identified with the defilement (i.e., afflictive mental states, including anger, greed, and delusion).

**Suffering | happiness dialectic**

Lucy has always been on my mind. I have introduced different practices to her through the past 10 years, but she showed very little interest in them. I felt like I was failing her. I consulted another vipassana teacher, Palawongse, on May 20<sup>th</sup>, 2020. Palawongse is a long-time student of Venerable Pamojjo and Koffinan's teacher. During the cogen, she asked me what got me on the path of mindfulness practice. I told her briefly about Lucy's story. I said I wanted to help Lucy and others be free from mental illnesses. In the following vignette, Palawongse describes her understanding of suffering:

Palawongse: Good as a state is not permanent. Bad as a state is not permanent. We practice until we can see that all good and bad are equal... We practice seeing that, but not to get the good, and throw away the bad. No. All good and bad are equal. (Transcript of audio recording, May 20, 2020)

From the cogen with Palawongse, I learned that to cultivate the kind of insight that leads to lasting transformations, it is crucial to observe all wholesome states (e.g., happiness, peace, mindfulness, etc.) and unwholesome states (e.g., greed, aversion, restlessness, etc.) with an impartial mind. Depression is a kind of aversion towards self and others. Like all mental states, depression is impermanent, which means it comes and goes under certain conditions. Hence, depression is not a fixed identity. It is simply a phenomenon that can happen to anyone. Rather than trying to get rid of depression, we can learn from it through mindfulness and concentration.

Palawongse said that in order to cultivate a nonjudgmental attitude towards suffering, we can notice the changes in our body and mind frequently until we become familiar with the characteristics of different phenomena and recognize them whenever they arise. Gradually, we learn to accept the changes in our body and mind with peace. Palawongse said every experience and every crisis, are valuable opportunities for us to learn about ourselves. With mindfulness, we

can see that everyone suffers, and no one is perfect. She emphasized that mindfulness allows us to forgive ourselves and others so that we can live in the world in harmony. Perhaps I would have more success in helping Lucy if I learned to embrace suffering with equanimity. I might offer her my nonjudgmental presence and compassion instead of my opinion.

#### **The borderland of science and spirituality**

I consider myself a scholar-practitioner. These two identities are not contradictory if we are willing to remain open-minded. From my experience, mindfulness practice provides a meaningful context for scientific inquiry. On the other hand, I adopt a rational attitude to understand my spiritual experiences through conducting research. Spirituality is not necessarily devoid of rationality. For example, mindfulness practice is about understanding our inner experiences through frequent observation of the changes in our body and mind. It is an iterative and rational way of understanding natural phenomena, but its focus is on inner experiences rather than external phenomena.

During the Covid-19 pandemic, many teachers and students around the world suffered from a lot of anxiety and stress because of the lockdowns. I organized a few sessions of mindfulness training for my friends, who were mostly science educators and K-12 schoolteachers, to look for ways to help ourselves and our students to cope with changes. I met a few Western scholars who felt uncomfortable with some Buddhist concepts. For instance, when a participant heard me talk about Theravada Buddhist concept of body-mind separation, he felt this idea sounded like Cartesian's dualism and positivism. Hence, he decided to reject Theravada Buddhism completely because this concept contradicted with his post-positivist epistemological belief. Certain Buddhist concepts might sound foreign in the beginning, especially some meanings might get lost in translation. For example, the separation of body and mind means differentiating between

physicality and mentality, rather than out of body experience. Moreover, a lot of Buddhist teachings cannot be understood through thoughts or beliefs. Mindfulness needs to be directly experienced through dedication in the practice. The blockage that these participants faced could be their fear towards religious dogmatism.

Spirituality is different from religious dogmatism, in which the former focuses on imposing certain beliefs on others through indoctrination, whereas the latter focuses on fostering understanding of self, and our interconnection with nature. To strengthen its authority, religious dogmatism often associates with strict membership, hegemony, and faith based on authority. On the other hand, spirituality is an ongoing personal inquiry that everyone begins once they are born. Buddhist mindfulness is a kind of spirituality because it is about promoting self-awareness and personal transformation, rather than holding on to a belief. It is the search for the meaning and purpose of life, the essence of lived experiences, and our connection across time and space in the vast universe.

Therefore, to understand mindfulness in Buddhist context, we need to spend time with the monastics, suspend our judgements, and try mindfulness practice for a certain period. Buddhism is not a religion, a philosophy, or a skill, but a lifestyle that aims to transform selfishness, violence, and greed in the mind. Mindfulness is one of the Noble Eightfold Paths. In Buddhism, mindfulness alone is not enough for freeing the mind from suffering. Mindfulness needs the support from the other seven noble paths, namely appropriate concentration, appropriate understanding, appropriate thought, appropriate speech, appropriate action, appropriate livelihood, and appropriate effort. Hence, extracting mindfulness and choose to enhance that only may not lead to lasting personal transformation. This is not the full potential of mindfulness. Instead, we need to understand how mindfulness is enacted in the context of Buddhism.



### **Crossing borders**

This study aims to dissolve boundaries between psychology and science education, between social science and natural science, between spirituality and science education, and between self and others through the lens of mindfulness in the context of Buddhism. Through describing my experiences in among these borderlands, this study explores the possible contribution of Buddhist mindfulness to science education. It also examines the impact of several modern ideologies that are preventing a deeper integration of mindfulness practice with science education. Modern ideologies like behaviorism and scientism create some obstacles for educators to address mental health and sustainability issues in a more meaningful and transformative way.

The current environmental problems and suffering in the world have been caused by people's ignorance about the interdependent nature of existence and a selfish way of consumption. Such ignorance gave rise to individualism and materialism. Quite often, we get lost in thoughts or busy searching for sensual pleasures and forget about our body and mind. We do not notice the happiness that is already present within us. When separation, aging, sickness, and death happen, we feel overwhelmed by these major life challenges. Mindfulness helps us develop psychological resilience to face adversities and find peace in difficult times.

Mindfulness is a universal characteristic of the human mind. Everyone has the potential to become mindful in their daily lives, regardless of their backgrounds. Although mindfulness practice originated from Buddhist traditions, mindfulness is not only available to Buddhists. For example, are you aware that you are breathing? Have you noticed that your mind got distracted from time to time? The above questions are mindfulness heuristics that aim to heighten your awareness of any changes in your body and mind. We do not have to believe in Buddha to answer

these questions. All of us can learn about ourselves if we are willing to pay attention. Mindfulness is a life skill that can be taught to young people and every global citizen.

Over the past 16 years of work experience as a teacher, I rarely saw any subject that focuses on developing life skills for facing major life challenges. Our modern education system increasingly focuses on forward-planning, efficiency, productivity, and competitiveness. The mental illness crisis during the current Covid-19 pandemic is a wake-up call for all educators to recognize the urgency in promoting mental health among young people. Students' mental health is no longer just the responsibility of psychologists. The pandemic has changed the way teachers deliver their lessons and how students learn. Teachers need to be aware of the risk factors influencing students' wellbeing, including lack of quality electronic devices, excessive assignments, exhaustion from too much screen time, social isolation, or financial crisis in families. This pandemic is also a golden opportunity for educators to reflect on their practices. Educators need to think about how they can make learning more reflective, enjoyable, and relevant to the needs of students.

All teachers, including teachers of science, have the responsibility to respond to the salient needs of students and be willing to go beyond academic issues. It is the job of education administrators ought to prioritize students' happiness and wellbeing in the process of learning. Besides reducing the learning time and workload, educators can help students develop psychological resilience through inviting them to practice mindfulness together. The Plum Village practices such as deep relaxation, nature walk, breathing exercise, and sharing in a circle are great ways to engage young learners (Hanh 2011).

The ability to take other views, to be aware of how emotions meditate cognition, and to lower one's ego are important qualities for being a scientifically and psychologically literate citizen in a democratic society. These abilities require a good foundation of mindfulness. Therefore, we

encourage science educators not to limit their role to only one discipline or identity. To solve complex real-world problems, educators need the courage to cross borders, to be ready to teach any life skill that is essential for students' wellbeing, and to steer our society towards a more mindful, compassionate, and sustainable direction.

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**Biographical information**

**Yan Yan Wong** is a Ph.D. candidate in science education at Kasetsart University. Her research focuses on promoting mindfulness education and wellbeing in schools. For the past ten years, she has been leading mindfulness research projects in an international school in Bangkok and providing training to her fellow teachers, students, and parents.

**Chatree Faikhamta** is an Associate Professor at the Faculty of Education, Kasetsart University, Thailand. His research areas focus on STEM education, pedagogical content knowledge (PCK), self-study research and action research. He directed the nationally funded Developing PCK-based professional development program for prospective science teachers and their school supervisors.

## CONCLUSIONS

### I. Achieving Authenticity

This dissertation is a critical reflection of my lived experiences in learning, practicing, teaching, and researching mindfulness practices within my school community and later collaborating with educators across the world. The overarching framework of this research study is authentic inquiry, which has an emergent and contingent design. The study is emergent because the scope and depth of this inquiry keeps expanding and evolving until now. The study is also contingent because all interventions including the mindfulness training programs for students, teachers, and parents, as well as the Mindfulness in Daily Life Heuristics are event-oriented and aiming to address the salient needs of coresearchers in their social worlds.

The goal of this authentic inquiry is to redefine and deliver a kind of science education that has ontological, educational, tactical, and catalytic authenticity. The mindfulness training programs described in this study have achieved ontological authenticity because they have transformed the worldviews and lifestyles of all coresearchers. Through engaging in regular reflective practices, participants have become aware of the thoughts, emotions, and biases that they previously were unaware of. I regard researchers as the main instrument in the process of any kind of inquiry. Hence, it is important for researchers to understand their own ways of thinking and to notice how their ways of thinking are influencing their ways of living. Johann Wolfgang von Goethe asserted that human body is the greatest instrument to evaluate empirical experiences because it understands nature from inside-out (Beavington, 2021). When researchers enhance their self-awareness, the quality and impact of their inquiry will also become more



powerful. Hence, I am advocating a kind of science education that begins from self-inquiry and extrapolates self-understanding to empathize with other beings as well as nature.

This inquiry adopts a multilogical research methodology, meaning that it embraces diversity and regards difference as a valuable learning resource. Through conducting cogenerative dialogues, multiple worldviews and voices across various age groups, occupations, and cultural backgrounds have been included in the research processes. Thus, the study being undertaken has educational authenticity, meaning that the inquiry addresses the needs of all coresearchers, especially those who do not have access to resources that are essential for their wellbeing. For example, during the pandemic, many teachers and students have been facing a lot of new challenges and stress. They need to adapt to learning in a new virtual environment, spending long hours staring at the screen, or for some teachers, facing unemployment. Although these participants do not consider themselves as mentally ill and may not seek help from psychologists, they are suffering from a lot of anxiety and stress that may negatively affect their wellness and wellbeing. In this study, I would like to expand the role of science educators beyond the scope of delivering reductionist scientific methodology, beyond the walls of classrooms, and relate to the daily salient needs of other global citizens. Through providing free online science education during the pandemic, I intended to enhance the scientific literacy and psychological resilience of the participants and their community during the pandemic. The MiDL heuristics and Facing Crises with Equanimity Forum addressed people's concerns about healthcare, stress management, equity of education, xenophobia,

racism, sustainable development, and diet through the lens of polysemia. As a result, science education on this forum has become relational, holistic, and contextualized.

My coresearchers and I intend to achieve personal and social transformation through nurturing mindfulness, mental stability, resilience, compassion, and agency among ourselves and the youth. The study has achieved tactical authenticity, meaning that participants used the new knowledge that they acquired from cogens to help other people in need. This study also has catalytic authenticity because the actions of coresearchers triggered a chain of ripple effects among their communities and gradually raised the awareness of wellbeing and sustainability of others. For example, in the beginning, only a few teachers from my school joined the mindfulness PLC. Later, the PLC members invite other teachers to join. During the pandemic, educators from America, Singapore, Nepal, Taiwan, and Hong Kong joined the online forum and shared their insights during the pandemic. The ripple effects of this authentic inquiry began from transformation within myself, followed by transformation among my students, my colleagues, and then to a greater community of science educators in the world.

## **II. Highlights of Each Chapter**

The five essays in this dissertation explore a range of questions and philosophical concepts, including wellbeing, mindfulness education, education for sustainability, and inquiry paradigms. In my autobiographical study in chapter 2, I used thick descriptions to document my cultural roots, my childhood, my education background, and my work experience as an

elementary school teacher. I explained how my lived experiences put me in the path of mindfulness practice, what I have learned from various great mentors along the way, and how I applied what I have learned to my teaching and researching practices in science education.

Before I learned about mindfulness practice, I was a burnt-out teacher who felt trapped in an education system that was competitive, stressful, and depleting. However, since I learned about mindfulness in Thailand, I have recognized the capacity of my mind to know myself and to slowly transform my relationship with stress. I discovered a way to cultivate resilience and peace within myself despite all of the problems happening in my environment. Through engaging in over a decade of self-inquiry and contemplating the nature of suffering, my lived experiences in mindfulness practice has transformed my worldview, how I understand the world, how I relate to my school community, and how I live my daily life. Most importantly, mindfulness guides me to discover a meaningful purpose for science education. I realized that science education is not about imposing a certain way of thinking or content on our students. Instead, science education should aim to educate students to become conscious inquirers, to become aware of their ways of thinking, to transcend all ideologies (e.g., atomism, individualism, and materialism), to understand and embrace what makes us human, and to recognize our interbeing with nature.

I recognized that mindfulness is a very important competency for one's wellbeing. Hence, I began to learn different approaches to introduce mindfulness to my students. In chapter 3, I talked about how I used mindfulness practices to help students understand themselves, develop meaningful relationships with peers and nurture appreciation and compassion for plants

and other animals. Besides introducing mindfulness to students, I also conducted mindfulness training programs for other teacher and parents. I explored the opportunities along with several challenges that I have faced when introducing mindfulness to Thai students as a foreign female mindfulness teacher-researcher. I have learned that it is essential for teachers of mindfulness to adopt polysemic and nonjudgmental attitudes towards different knowledge systems and cultures. For science education and mindfulness practice to be transformative and liberating, teachers should aim to inspire students rather than indoctrinating students.

In chapter 4, I interpreted my journey in sharing mindfulness practice with a few like-minded colleagues. Through conducting collaborative classroom research with them, mindfulness has been taught across multiple grade levels in the school and integrated with a few subjects in the formal curriculum. The curriculum and pedagogy of these programs are based on the teachings of a few influential teachers, including the insight of interbeing from Hanh, the practice of Four Foundations of Mindfulness from V. Thong, the cultivation of wisdom from V. Pamojjo and his teaching assistants, the application of mindfulness heuristics in education from Tobin, animalism from Bai, and many others. I intend to show that cultural transformation is possible through nurturing a mindful community.

During the Covid-19 pandemic, I used the insights from my lived experiences to design and implement mindfulness heuristics among a group of adults who suffered from stress and anxiety. In chapter 5, through describing and interpreting the case study of Bethany, I intend to show how mindfulness can help global citizens from different walks of life cultivate mental

stability and resilience through altering their perceptions and relationships with their thoughts and emotions. In such uncertain times, when many parts of the world are suffering from unprecedented pandemic, floods, and political unrest, mindfulness can help us understand suffering in a much deeper level, enhance our agency to respond to crises, and turn suffering into opportunities for awakening as well as meaningful transformation. From Bethany's example, I want to demonstrate that life can be difficult, but we do not need to suffer with it. Negative emotions, including sadness, anger, fear, and frustration, are tools for us to understand ourselves. If we bring gentle curiosity to learn about these difficult emotions, they will become our greatest teachers in our lives.

This study has an emergent design because the plan of my doctoral study unfolded in many unexpected turns. Originally, I was planning to conduct a new mindfulness training program during science class in my homeroom. However, Covid-19 pandemic began, and my school was closed. There was a lot of anxiety and stress among my family, students, colleagues, and friends. Two of my Canadian friends, who are Luangpor Pramote Pamojjo's students, were stuck in Thailand due to the lock down. I decided to invite them to engage in cogens so that we could find creative solutions to help people around us. Their generous and candid sharing dramatically changed the way I understand the nature of the mind, mindfulness, and enlightenment. Later, they introduced a few other avid Vipassana teachers to talk to me. As a result, these above cogens became a major part of my doctoral research study and are interpreted in chapter 6. According to these Vipassana teachers, the human mind has the potential to rise above all physical and mental phenomena. There is another level of knowing or existence that

is above the content of our stories and that is sensing what is sponsoring our thoughts, emotions, and actions. This level of knowing allows us to see how feelings and emotions are meditating our cognition. In Buddhism, it is called the knowing mind or the stable observer. This knowing mind is the key to cultivate a peaceful mind that can live harmoniously in an imperfect world. Besides writing this chapter, Koffman and I also shared these insights on an online public forum with other educators across the world during the pandemic. We hope that through meaningful discussions and mindfulness practice, our communities could gather resources and wisdom to alleviate the pain, anxiety, fear, and grief resulting from the pandemic.

I am not arguing that mindfulness can solve all current grand challenges facing humanity, such as overconsumption, climate change, mass extinction, and mental illnesses. However, I believe the cultivation of mindfulness is crucial to the survival and wellbeing of our children and the sustainability of our planet because it reveals a higher potential of the human mind to become self-aware and transcend extant conditions.

### **III. Emerging Themes**

In the next session, I identify five themes that emerge from my autobiography, cogens with mindfulness practitioners, and conversations with other coresearchers. Based on the new insights derived from the five essays, I hope to generate a few new mindfulness heuristics for citizens from all walks of life across the life span, who have the humility and courage to look within themselves, to see suffering as a learning opportunity, to challenge the status quo, and to evolve consciously through the Anthropocene era.

### **A. Wellbeing is realized through understanding suffering**

Happiness is a feeling that is available from within us here and now. It does not have to come from another person or external materials. To help students recognize the inner potential of happiness, teachers first need to learn how to transform the violence within themselves into wisdom and compassion. Quite often, western contemporary psychologists define suffering as negative emotions, whereas for Buddhism all phenomena, whether happiness or sadness, are symptoms of suffering. What exactly is suffering in a Buddhist sense? The cause of suffering is the desire to pursue lasting happiness from things that are impermanent and uncontrollable. The violence within us is caused by the mind that has been struggling to get more happiness and to avoid suffering. Buddhist mindfulness aims at understanding the fundamental causes of suffering through cultivating a nonjudgmental attitude towards all our lived experiences. Like myself, I had been through great suffering and learned how to live with it in peace. After learning how to take care of myself, I began to have more energy to help my family, students, and other fellow teachers.

Teachers can invite their students to practice together. Teachers and students can form a community to contemplate the causes of their suffering and seek for creative solutions to transform suffering into great learning opportunities. Hanh said building a sangha (i.e., a mindfulness practice group) in a school community is crucial to transform

the culture of the community. A sangha uses the lenses of mindfulness, inclusion, compassion, and equanimity to examine suffering as it is and learn to take collective responsibility to solve problems. As Hanh said, “No mud, no lotus.” Without understanding suffering, happiness and wellbeing are not possible.

A sangha does not have to limit to human beings only. When I was an elementary school teacher, I always took my students to visit the trees in our school’s garden. I invited my students to hug the trees and talk to them. Trees are the shelters of many smaller creatures. Being present and connecting with other species living among these trees was a wonderful exercise to nurture deep relaxation within us. I always imagine what the trees and these creatures want human beings to do for them. How do they want to be treated? I like to touch the insects, snails, earthworms, and frogs in front of my students and let them know that they are not harmful. After a while, my students became less fearful towards these little animals and felt more curious about them. As we got more familiar with them, animals became our friends rather than just objects for us to observe.

Last, but not least, school administrators can promote teachers’ best practices in growing happiness among students with each other through conferences, professional development activities, and social media. We can influence education policies through promoting national awareness of wellbeing. In 1991, Hanh wrote, “Mindfulness must be engaged. Once there is seeing, there must be acting. Otherwise, what’s the use of seeing?”



(Neumann, 2017, p.10). What he meant was mindfulness is for bringing peace and justice to the world. All the Buddhist mindfulness teachers that I came across always tell their students to donate their good merits to all beings in the world after practicing mindfulness. My friend, Nun Wu, once said when we practice for a selfless cause, the happiness that we feel is much greater. For Buddhists, they practice mindfulness to understand that they cannot be happy when other beings around them are not happy, and they cannot be free from suffering if they harm other beings.

### **B. Mindfulness practice includes cultivating awareness and wisdom**

Quite often, people thought mindfulness practice is the same as meditation. Hence, they cannot connect mindfulness with learning. However, meditation is simply one of the many contemplative practices that support the cultivation of mindfulness. Hahn teaches that mindfulness is about noticing and reclaiming our freedom in every moment of our daily lives (Neumann, 2017). That means mindfulness practice is remembering and noticing what our body and mind are doing in our daily lives.

Educators have a keen interest in research information about the relationship between the brain and students' learning. The fields of neuroscience and cognitive science, together with the advancement of noninvasive imaging technologies (e.g., positron emission tomography (PET) and functional magnetic resonance imaging (fMRI), provided us with a lot of new insights about the anatomy and functions of the

brain. According to the book entitled *How People Learn – Brain, Mind, Experience, and School* by National Research Council (NRC, 2009), some key findings about the relationship between the brain and learning from neuroscience and cognitive science include: 1) learning changes the physical structure of the brain, and 2) learning organizes and alter the structure of the brain. Neuroscientists such as Davidson and Irwin (1999) conducted several studies identifying the underlying neuro circuits of positive and negative emotions in the human brain. Their studies suggested that now scientists can predict what emotions arise in a person through examining a brain scan. However, understanding how the brain functions does not necessarily mean understanding how the mind works. The brain is a physical organ, whereas the mind is wherever our attention goes.

Mental phenomena, such as feelings and emotions, are highly subjective and refined. For example, every individual has their unique way in perceiving, relating to, and reacting to anger. Moreover, changing the brain chemistry does not necessarily transform the mind. For example, there is no pill on Earth that can help us learn a new skill, like science, math, or playing music. Although we can eat nutritious food to enhance the health of the brain, we need to train our mind to build the new skill through concentration, self-reflection, patience, and practice. Learning a new skill builds new pathways in the brain, and a functional brain facilitates effective learning. However, the brain and the mind are two different aspects of existence that require different kinds of care.

In the fifth essay I analyze social interactions selected from cogens involving four Vipassana practitioners with Theravada Buddhist lineages. The analyses show that the body and mind are two separate entities. I asked Koffman how the body is separate from the mind. He explained that the word “separate” might be a bit misleading. Perhaps using the word “distinguish” or “differentiate” may be more appropriate. Physicality is different from mentality. For example, physical change is slower and less visible compared to the change of mental phenomena, whereas our mind changes from one thought to another from moment to moment. The body is tangible, whereas the mind has no form or a physical location. V. Nimmalo mentioned that the mind is wherever the receiving point of our attention is. Although the mind may have physical manifestation, such as changes in the brainwaves, heart rate, or breath, these physical manifestations are not fully reliable measures of the mind. However, the human mind has the potential to observe itself. He said understanding the mind requires mental tools, such as mindfulness and concentration. Mindfulness and concentration allow us to know our own thoughts, feelings, and emotions without the help of external assessments by outsiders.

Mindfulness means remembering our body and mind, whereas mindlessness is forgetting about our body and mind. Hanh (2011) described this body and mind of ours as follows:

Our home is made up of our body, feelings, emotions, perceptions, and consciousness. The territory of our home is large, and we are the monarch who is responsible for it. We should know how to go home to ourselves and take care of our body and our mind. (p. 42)

Going home to ourselves means being present with our body and mind. We can train our mind to be present by using an object as the home for the mind, such as breath, body movement, a keyword, or an image. For example, over the past ten years, I practice mindful breathing and walking meditation with students in the morning to set a mindful tone for a day. For mindful breathing, we notice the in-breath and the out-breath through the nostrils or the movement of our bellies. Whenever the mind wanders away from the object, we know so and keep noticing. The same principle applies to walking meditation, but we use the movement of the whole body or our legs as the object of focus. These exercises help children train their mind to focus in the here and now and to remember the feeling of a wandering mind. Based on my experiences, after three to four weeks of daily practice, students usually reported that they notice their breath from time to time throughout the day. Practicing mindfulness helps students learn to slow down, relax, be present, and have fun. I notice that students can focus better when there are more moments of silence in the classroom.

Mindfulness practice includes two parts, which are cultivating present awareness and cultivating wisdom. Wisdom is the understanding of the three characteristics (i.e., impermanence, non-self, unsatisfactoriness) of this body and mind. Luangpor Pramote said when we understand the nature of the body, we also understand the nature of the mind. For example, if we observe our hair, we notice that old hair is constantly replaced by new hair. However, our identity does not reside in our hair because it is always changing. In fact, our identity does not reside in any part of our body because it is always changing and aging. However, we usually have an idea about our appearance and our health condition that we may not notice the subtle changes in our body. When we do not accept the impermanent and nonself nature of the body, our mind suffers with the body when we get sick. Hence, mindfulness practice aims to cultivate an equanimous attitude towards the inevitable changes happening in our body and mind.

Nonself means that this body and mind of ours are not who we are. They are conditioned by our habits, our upbringing, our culture, and our environment to react to triggers in certain patterns. Quite often, our daily existence is on autopilot mode. We get lost in the stories in our head without knowing how our body, thoughts, and emotions influence our actions and how we are interdependent on our surrounding environment. As our mind moves from one thought to another at a very fast speed, we have the impression that our identity is continuous and unchangeable. Moreover, our body and mind automatically react to stimuli so fast that we think our identity is self-existing and

separate from the rest of the world. However, according to V. Pramote and other experienced mindfulness practitioners, with enough mindfulness and concentration they notice that this body and mind of ours moves from one moment to the next without a fixed identity. This body and mind move and change every moment without anyone controlling the process. Therefore, when our mind stops sustaining things that cannot be sustained, and stops controlling things that cannot be controlled, it follows the flow of nature and lets go of suffering.

In the MiDL Heuristic study, Bethany's understanding of the three characteristics of her body and mind helped her become more impartial to both physical and mental suffering. In Bethany's reflective journal, she mentioned that knowing that her thoughts and emotions are nonself is a very empowering and touching experience. She learned that no matter how hard she tries, this body and mind of hers are always changing and not under her control. However, she learned that she had a choice, and she did not need to be taken over by her thoughts and emotions. Her story indicates that with mindfulness, we nurture understanding and compassion towards ourselves. The body and mind will never be perfect but that is okay. We take care of our body and mind with a nonjudgmental attitude so that we will not add more suffering to ourselves. Mindfulness helps us take life less personally.

It is crucial for children to understand the transient and nonself nature of the mind because the mind plays a crucial role in learning and being. Moreover, understanding the nature of the mind can help remove the effect of labeling on students with learning disabilities. For example, about 6 years ago, I taught my fourth graders the nature of our puppy mind in lesson 2 of Paws.b mindfulness training program for children. I mentioned that the mind is similar to a puppy. Our mind does not like to stay still, that it does not always bring back things that we like, and that it is not controllable. A student called John (pseudonym) diagnosed with ADHD (i.e., Attention Deficit Hyperactive Disorder) was surprised to hear that. Below is a vignette of our conversation:

John: I thought I am special because I have ADHD. I thought only my mind is not controllable.

Wong: That's not true. Everyone's mind is similar to a puppy. We are always distracted.

Then I asked the whole class to do an experiment. I invited students to focus on their breath and notice how many times their mind wandered away from their breath. After three minutes of practice, I asked students to raise their hands if they noticed that their mind wandered. Almost every student raised their hands. John marveled, "Then I guess my mind is not that special." I said, "You are right. Our mind always gets distracted. But we are not our mind. In fact, we can train the puppy mind to focus. We

just have to be patient and kind to our mind.” John became very interested in observing his own mind. He told me that the medication that he had been taking made him feel like something was restricting his mind. However, mindfulness practice became a fun way for him to understand his puppy mind. A few years later, I saw him teach a new student how to observe anger with mindfulness. It seemed like he had learned to live with his puppy mind in harmony.

Our mind does not have a fixed and independent identity because our preferences, emotions, memory, and attention change according to the existing conditions within and situational factors. For example, we cannot force the mind to focus when we feel tired, sick, or angry. Luangpor Pramote always says that the prerequisite for concentration to arise is happiness. Our mind automatically becomes focused when it is relaxed and happy. If teachers understand the uncontrollable nature of their own mind through mindfulness practice, they will know that training the mind to focus requires patience and compassion. They will understand that it is natural for students to get distracted from time to time and that punishment does not help students focus better. Moreover, if teachers understand how the human mind works, they will also know that nurturing happiness and wellbeing is the key to effective learning.

To nurture a happy learning community, the first thing that teachers should do is to nurture happiness within themselves. Hanh has a famous quote, “Happy teachers



can change the world.” It means that teachers’ happiness is crucial to students’ learning. When teachers know how to take care of their stress, they have more emotional energy to support their students. Abevaroni, Jennings, Greenburg, Harris and Katz’s (2013) study on the protective effects of mindfulness against burnout among teachers indicates that mindfulness has a strong negative correlation with emotional exhaustion, depersonalization, and low personal achievement. Moreover, their study also shows that mindfulness-based stress reduction training promotes the wellbeing of educators, classroom learning environment, and students. From this example, we can see that teachers’ social emotional competence has a strong influence on students’ wellbeing.

### **C. The understanding of nonself leads to compassion and sustainability**

Our idea of self is usually derived from this body and mind of ours. Ven. Nimmalo explained that in the beginning of mindfulness practice, we may notice that the body and mind are two different entities. If we allow the body to move naturally, we may see the body is moving whereas the mind is something other than the body. Later, we accumulate more mindfulness energy, we also learn that the mind that knows and the mental phenomenon that is being observed are two different things. We begin to be able to differentiate more refined mental phenomena, such as feelings, thoughts, perceptions, and emotions. The body, feelings, cognition, mental formations, and consciousness are known as the five aggregates.

Human beings regard these five aggregates as a self, that is, a fixed, immutable, and independent ego. However, Luangpor Pramote explains that the belief of having a self is delusional because the five aggregates are just like parts of a car. He said we cannot claim that the wheel is a car, or that the engine is a car. Each component of a car has its own function, but it is not a car itself. He also said anything that can be observed is not a self.

In Buddhism, suffering originates from ignorance about the nature of our five aggregates. For example, when we are totally immersed in thinking, we believe that our thoughts are real, and the thoughts are coming from us. So, whatever the thoughts say, we have reactions to it. We either follow them or reject them. And when we feel angry, we think that the anger belongs to us, that it is our anger, or it is a part of who we are. However, if we are experiencing thoughts from a mindful mind, a mind that is not immersed in the contents of our thoughts, we are able to observe this body and mind from a higher perspective. We can distinguish different components that made up the idea of a self. Suffering, including physical pain, stressful feelings, thoughts, or emotions, can become something for us to observe, to understand, and to learn from. We can take life less personally.

According to my cogen with Koffman, Luangpor Pramote mentioned when we understand ourselves, we understand the world. V. Nimmalo said when we understand

ourselves, we understand the others as well. We see everybody as friends in a sense that every living thing loves happiness and hates suffering. We are all just made of physicality and mentality, not a person. He said the more we understand the world, the less we suffer. We start from understanding this body and mind of ours and we can extrapolate to the rest of the world. When we understand that we are not that different from other animals and nature, that we are all impermanent and interdependent, then there is no more self-existing and expanding egos. There is no need to compete against each other for survival. We will be one with nature.

Every year, I invite students to contemplate the nature of our existence through an exercise called *What am I made of* from the Plum Village. Quite often, when the children brainstorm what they are made of, they notice that their body has borrowed elements from the rain, the ocean, other animals, plants, and minerals. They also learn that the contents in their mind came from their ancestors, parents, teachers, books, social media, traditions, and society. Moreover, our body is constantly exchanging elements with our surrounding environment. When we live on this planet, we borrow this body and mind of ours temporarily and we need to return them to nature one day. We are not different from these elements because we are all transient.

In the MiDL case study, when Bethany recognized the potential of her mind to observe her thoughts, she said she felt empowered and relieved because she was not her

thoughts. Before participating in the MiDL training, Bethany believed that she could control the thoughts that arose in her mind, and so she should be responsible for her thoughts. However, when she noticed that thinking is the mind's natural state and that she had no control over what thoughts naturally arose in her mind, she became less judgmental towards herself. Understanding the non-self (i.e., uncontrollable) nature of the mind leads to an equanimous attitude towards stressful thoughts and emotions, and hence reducing one's suffering. Moreover, she also judged her partner and others less because she understood that the others suffer from the same condition, that is, nobody can control their own mind.

Luangpor Pramote always says the original mind is bright and pure. Compassion is more natural to human beings than hatred and violence. When we break down the idea of self into smaller components, our lives become less centered around the self. We can release the potential of the mind to feel for the suffering of others and to care for others. We can shift our attention from satisfying every need of our ego to connecting ourselves with others. I am not saying that mindfulness is the magic bullet of removing my suffering in an instance. However, with mindfulness, I learn to take care of my suffering in harmony and also to help others to do so. For me, being able to help myself and others is the greatest joy because now my life has a purpose. My life is a temporary property that I borrowed from the world, and so I should live to serve the others.

Bethany had a similar realization during the mindfulness training. After experiencing the benefits of mindfulness practice, Bethany had the desire to help others reduce their suffering. She shared her insights with her partner and her family so that they could experience more happiness. She also wrote that shifting the focus from herself to others brought her joy. For example, she felt happy to buy a yoga mat for her best friend or thought about some nice things that she could do for her mother. These are good examples that indicate compassion for others begins from self-compassion and self-care.

#### **D. Science and spirituality are not mutually exclusive**

Science, mathematics, and technology originated from human beings' curiosity towards nature and our place in this vast universe. During ancient times, there was no clear distinction between science and spirituality. Our ancestors used their prior lived experiences and whatever knowledge they got to solve their daily life problems. As human knowledge became more sophisticated, Western philosophers proposed ways to make the process of reasoning more systematic and rational so that it was not biased by personal beliefs or superstition. The foundations of modern philosophy and scientific reasoning were based on Descartes' philosophy of systematic doubt. In Descartes' Discourse on Method (1637), he stated that, "Question everything and all previous authorities. Accept as true only what is absolutely certain." Combining his knowledge of mechanics, physics, and mathematics, Descartes postulated that nature itself has a

perfect geometric and mathematical order. To analyze any question, we can break it down into its smaller parts, working from simple issues towards more complex ones. Moreover, he said to avoid deductive error, we should not be too confident about our theory. We must keep testing and retesting through empirical means to verify the theory. Descartes' philosophy influenced many Enlightenment philosophers, who sought to find the logical/mathematical order of the universe so that they can understand man's place in the universe and how we can govern ourselves. Descartes' ontological and epistemological assumptions have a far-reaching impact on Western science because they formed the foundation of positivism and empiricism.

In the past 400 years, positivist research dominated both natural sciences and social sciences. Indeed, empirical research has made a lot of contributions in the advancements of natural sciences, medical science, and technology. However, like other inquiry paradigms, positivism and empiricism have their limitations. For example, in the past few decades, positivist research has been under criticism because of its mechanistic and reductionistic dynamics (Kincheloe & Tobin, 2009). Other critique includes the focus of positivist research on collecting aggregate data in a decontextualized way, neglecting a researcher's role as the main instrument, and disregarding the agency of subjects. Because of positivist research's overemphasis on quantification and objectivity, science has become disconnected from the daily needs of individuals. The culture of positivism has far-reaching effects in K-12 science education.

For example, science curriculum in many K-12 schools focuses mostly on studying phenomena that are external to students. Important topics, like wellness, wellbeing, sustainable lifestyle, or crises management are put on the backseat of a curriculum. Students have been too busy sending their mind out to see, to hear, to think, and to do things and they do not have time to look within themselves. Besides being unaware of themselves, our students are also disconnected from the real world. They spend most of their time sitting in classrooms and being isolated from nature (Bai, 2019). They learn about nature mostly from textbooks, experiments, or group projects happening within the walls of classrooms. They learn about other animals by dissecting them in the laboratory rather than being present with them when they are alive (Beavington, 2021). This is because our modern science education is assuming that researchers are separate from the researched, that human beings are superior to other living things, and that living things are separate from nonliving things. The problem is that as long as we are teaching our children that human beings are separate and above the other parts of the ecosystem, education for sustainable development will remain as a theory or a group of ideas. The outcome of an uprooted science education is a generation of angry and empty young people that are disconnected from themselves, the others, and nature.

The cause of environmental problems is mainly our ignorance about how our worldview and values influence the way we treat other components of nature. If science education does not prioritize wellbeing, why is it important for our youth to learn science? Rather than limiting science to phenomena that can be quantified, students should learn science as a lived experience, that is, to learn how to use rationality, ethics, and compassion to face everyday life challenges. For example, in higher education, science educators like Tobin and his colleagues have been conducting research about the regulation of emotions and wellness through oriental medicine and mindfulness practice among teachers and students (Tobin, 2015). Psychologists including Davidson (2009), Goleman (2005), and medical doctors such as Kabat-Zinn take a scientific approach to study how people can regulate their negative emotions through mindfulness meditation. Therefore, K-12 schools should not confine science in traditional subject boundaries, such as biology, chemistry, and physics. K-12 teachers of science need to guide our youth to reconnect with themselves (e.g., body, mind, and prior lived experiences), with others (e.g., parents, grandparents, local community, and global communities), and with nature (e.g., other species, minerals, rivers, and forests). Science learning should be practical, transdisciplinary (e.g., STEM), reflective, cross-cultural, cross-generation, and cross-species.

In this dissertation, I intend to reunite spirituality and science and explore how mindfulness practice from Buddhist wisdom philosophies can compensate the limitation of current science education. I advocate that science education does not have to adopt a



mathematical, mechanistic, formula-laden lens to conduct inquiry. Beavington and Bai (2021) proposed that Goethean scientific methodology, which adopts a conscious-process-participatory epistemology, is more appropriate for studying phenomena related to biodiversity, climate change, plant growth, and other biological and physical entities. Their proposal is based on a concern for ethical values and preserving humanity as part of the whole ecosystem.

Spiritual and existential topics are rarely addressed in science because many scientists regarded them as too subjective or not measurable. However, spirituality is not necessarily devoid of rationality. For example, in mindfulness practice, we understand ourselves by distinguishing our existence in terms of smaller components, such as body and mind, or five aggregates. Throughout the day, we observe the changes of our body and mind with the theoretical framework of the impermanent, non-self, and unsatisfactory nature of existence. When we collect enough evidence, our mind can transcend biases, superstition, and ideologies.

Besides identifying smaller components of phenomena, Buddhism also takes a holistic approach to study the complex dialectical relationships among phenomena, such as dependent origination (i.e., a vision of life that we see everything as interconnected, and that nothing exists alone.) Buddhists believe that when we understand the complex interdependent cause and effect relationships among natural phenomena, we can

eradicate selfishness, self-importance, violence, greed, and ignorance, and attain enlightenment. In most research studies on mindfulness in the field of contemporary psychology, mindfulness has been examined as an isolated and operationalized construct. However, in Buddhism, mindfulness cannot exist or be developed alone. In order for mindfulness to arise, it requires the right conditions, such as morality and concentration. Mindfulness is part of the whole Noble Eightfold Path.

Throughout my doctoral study, I sensed a division between science and spirituality. I came across many scientists and science educators who are skeptical about mindfulness because of its religious association. On the other hand, I also met a few monks who commented that scientists and scholars in general have not seen the truths through direct experiences. I consider this division as unnecessary and even harmful. Science and spirituality are not mutually exclusive ways of knowing. Many scientific inquiries originate from our intuition, our imagination, our desire to help others, and our curiosity about this cosmos. It is dangerous to teach, learn, or apply science in an “uprooted” manner. What I mean here is that modern science focuses too much on removing humanity from scientific inquiry but neglects the lived experiences and agency of people that are involved in an inquiry (both researchers and the researched). Therefore, teachers of science need to be vigilant towards the impact of various ideologies on students’ learning and wellbeing. They need to become aware of and avoid instilling symbolic violence during the process of teaching science and not to impose a metanarrative or a fixed worldview with

their authority. On the other hand, I think there is room for doubt in spirituality. If the purpose of spirituality is to help people transform and transcend, then it should leave room for people to question, to learn, to change, and to grow. Self-inquiry, like scientific inquiry, is a life-long journey.

#### **E. Mindfulness raises science education above materialism**

Our Mother Earth is in this dire state because of human beings' ignorance about the possibility of happiness beyond sensual pleasures. Our modern lifestyle, education system, and political system have not been evolving beyond materialism. From the past until now, human beings have been conditioned to think that the source of happiness comes from sensual pleasure. As a result, they strive to maximize access to resources so that they can sustain their body and mind, and their external living conditions to a satisfactory level. People have been devoting all their energy to attainment, such as higher degrees, well-paid jobs, comfortable homes, exciting vacations, social recognition, and happy relationships, so that we can feel somewhat happy one day in the future. We keep exploiting other species to feel adequate and safe. We have been using science, technology, and other resources to make our lives more convenient, and to keep ourselves comfortable and entertained so that we do not have to face the transient and uncertain nature of our existence. Most people know that they as well as their beloved ones will get old, sick, and die one day. But most of us rarely have a chance to learn how to deal with anger, grief, or depression when crises happen in our lives.

Hence, indulging in sensual pleasures becomes our escape from reality. However, if we do not recognize that the happiness deriving from sensual pleasures (good taste, smell, sight, touch, sound, and exciting thoughts in our heads) is short-lived, unreliable, and unsubstantial, we will continue to yearn for more. This is what Bai called the Hungry Ghost Phenomenon (Bai, 2019).

Mindfulness education is gaining popularity because Western scholars discovered various benefits associated with it, including higher concentration, better emotional regulation, reduced stress, and improved health. So far, there is considerable studies showing that mindfulness meditation is associated with higher concentration, lower emotional reactivity (Davidson, 2008), faster recovery from trauma (Wamsler, 2018), and healthier lifestyle (Grabow et al., 2018). However, according to Buddhist wisdom traditions, mindfulness has a higher potential than achieving short-term enhancement in performance or happiness.

In Buddhism, mindfulness is a mental state that can be systematically cultivated through regular reflective practice daily. Practicing mindfulness does not mean that we hold onto or seek to change the present state so that happiness can be sustained. Deeper transformation through mindfulness comes from an understanding that all physical and mental states, including mindfulness, are transient and cannot be sustained at our will. This level of understanding is called equanimity in Buddhism. Equanimity or a

nonjudgmental attitude towards whatever happened to this body and mind of ours cannot be forced or fabricated. It comes from our frequent contemplation and a deep understanding of the impermanent, uncertain, and unsatisfactory nature of our existence. When we truly understand the three characteristics of existence, our desire to indulge, to acquire, and to attach to things that make us happy will slowly dissipate. The happiness from within that is unconditioned, that does not rely on sustaining any mental state or physical matter, is known as enlightenment. Enlightenment, the extinction of desire, arises when there is no separation between the mind and nature.

We do not have to be enlightened to experience the happiness coming from equanimity. Like some of my teachers and myself, the duration and severity of our suffering gradually reduce as we integrate mindfulness more with our daily life. Through mindfulness, we discover the possibility of a kind of wellbeing that is more stable and liberating. However, I am afraid that many schools in our modern education system are not helping our students experience this kind of happiness because they emphasize the success from “measurables”, such as grades, qualifications, income, and social recognition. On the other hand, human inner qualities such as happiness, wellbeing, and resilience are regarded as the products of a good career or high income rather than the causes and indicators of success. As a result, many students graduate from schools with few skills to resolve conflicts, to cultivate meaningful relationships, or to face major life challenges like sickness and death with patience and compassion.

Let us contemplate the impact of materialism on modern education by asking ourselves the following questions. How much time do teachers spend on nurturing students' happiness and wellbeing compared to traditional cognitive skills? How often do teachers reward students who exhibit kindness to others compared to students with excellent academic achievements? Do we consider someone successful simply by the fact that he or she is a happy, kind, and moral individual? Which person received more social recognition, the success story of an entrepreneur or the story of a teacher who has influenced the lives of many students?

The purpose of describing and interpreting my lived experiences in practicing mindfulness here is to encourage educators and every global citizen to wake up from our autopilot mode. I intend to help my readers become aware of the schemas that have been causing pain in themselves and others. We cannot save this planet with the old cognitive schemas that have caused destruction to our environment. We need to change the ontological, cultural, and sociological pattern of human beings through reforming education. For example, STEM education should not be just about producing more scientists and engineers so that the economy can thrive. STEM education is not meaningful if it is just about producing more scientists and engineers and maximizing profits. It should prioritize the wellbeing of our children, the transcendence of suffering, and the balance of our whole ecosystem. We need an education system that assists

global citizens to realize the highest potential of their mind to transcend pleasures, thoughts, and emotions, and to experience interbeing. And human beings need to perceive themselves as partners with other species rather than the owners of natural resources. It is because the happiness of human beings is not independent of the wellbeing of other species and Mother Nature. We need to become aware of our dialectic relationships with the rest of the world through contemplating the cause and effect of human actions. Mindfulness practice has helped me as well as my co-researchers become more sensitive to the effects of our negative thoughts and emotions on our own wellbeing. Such sensitivity nurtures our empathy towards others' suffering and provides motivation for us to change our lifestyles.

For parents, including myself, our biggest concern is the happiness of our children, which is interdependent on the wellbeing of the whole ecosystem. I felt worried about the future of our next generation because obviously humans and our planet are heading towards a dangerous path. As I am writing this dissertation, our world is facing an unprecedented pandemic. Koffman, once said it is a time when everyone can relate to uncertainty. When I saw the continuing climb of death toll in Thailand and the rest of the world, I pondered if human beings would be able to win this battle and how our children would live in the future. It seems like there are more and more reasons (e.g., air pollution, pandemic, and political unrest) for human beings to lock themselves up in their homes. Meanwhile, other animals and the rest of the nature can live without us. The news media around the world are showing pictures of wild animals roaming

around the cities, celebrating the rare freedom that they got with hardly any humans around during the lockdowns. What does it tell us when other animals are celebrating our absence?



**Figure 1** Wild goats wandered around a town in Wales during the Covid-19 pandemic

**Source:** Furlong (Apr 2020)

I refuse to live in ignorance and wait for the new generation to deal with the environmental and social problems. In the past eleven years, many colleagues and a few Dhamma teachers told me that my idea of integrating mindfulness with a formal curriculum was hard to bring to fruition. I agree that the mission is challenging but it is not impossible. Social transformation is possible through education and authentic inquiry. An education system has a dialectical relationship with the society in which it



is embedded. That means an education system is the reflection of the agenda of policy makers and the society's culture, meanwhile the education system also shapes a society (Hyland, 2011).

Although it may take a long time to see the results, educators have always been the most powerful change agents of a society, who inspire and empower students to reach the highest standards of morality. Educators should never lose hope or just aim to maintain the current status quo, which is very likely leading to the destruction of the whole biosphere.

#### **IV. Challenges of a Foreign Teacher-Researcher in Thailand**

##### **A. Who is eligible to teach mindfulness?**

My journey is filled with triumphs as well as challenges. In the beginning when I proposed to teach mindfulness in my classroom, I faced resistance from various parties. For example, traditionally, within Theravada Buddhism, only the Sangha (i.e., enlightened being) can teach mindfulness practice. It is because misrepresenting mindfulness and misleading someone to stray away from the path of enlightenment is a big sin for Theravadins. As a result, many Thai teachers believed that mindfulness (the essence of Buddhism) should be taught by monks only. There are always many questions from various parties concerning whether a foreign teacher like me could possibly understand and represent Buddhist mindfulness correctly.

Moreover, in the beginning of my research project, I introduced the mindfulness practices from the Plum Village, which is a Zen Buddhist tradition. The administrators concerned whether the mindfulness practices from other wisdom traditions would contradict Theravada Buddhism. Many Theravadins consider Mahayana Buddhism as a sect that strays away from Buddha's original teachings because it promotes the path of Bodhisattva (i.e., a person whose mind has the power to attain nirvana but delays doing so out of compassion in order to save suffering beings.) To Theravadins, the path of enlightenment is the highest human potential rather than Bodhisattva who chose to stay in the cycle of birth and rebirth to help humankind.

There was also a concern about which gender is eligible to teach Dhamma. Within Theravada Buddhism, only males can be ordained as monks and give dhamma talks. Nuns and other female lay practitioners are mainly responsible for housekeeping and taking care of the monks in the temples. Although quite a number Luangpor Pramote's students are lay female practitioners and nuns, it was not a common practice in Thai temples. Although I do not claim to be a Dhamma teacher and I have different objectives from monks, my eligibility to teach mindfulness has always been questioned among the Thai community.

I am not an enlightened being and I do not know how to lead someone to enlightenment. I just want to teach mindfulness practice as a self-help tool for my

students to enhance self-awareness and resilience. From my point of view, mindfulness is a universal quality, and everyone has their own way of enacting, experiencing, and understanding it. Is it acceptable for someone to interpret mindfulness in another way if that person is using their version of mindfulness to do good for humanity? Is it necessary to limit mindfulness just for the purpose of enlightenment only? If teachers of mindfulness intend to educate rather than to indoctrinate, answering the above questions or gaining approval from someone with authority becomes not important.

I consulted Ven. Nimmalo about these questions. He explained that Buddha did not establish a religion called Buddhism. Buddha called himself a teacher who taught people how to free themselves from suffering. Mindfulness is a universal state that does not belong to anyone, and so it can be taught in any context. Palawongse also explained that there are two levels of mindfulness: one level is for solving worldly matters, and another level is for eradicating defilements. In other words, it does not mean that teaching mindfulness for worldly matters is wrong, but mindfulness educators should be aware that human beings have the potential to develop a deeper level of mindfulness that helps them cut through the defilements and liberate themselves from suffering.

## **B. Going Beyond Academics**

About ten years ago, I was the only teacher teaching mindfulness in the school. Many colleagues said teaching students how to become self-aware or to manage their emotions was beyond the role of a teacher. They said this was the job of the students'

parents. What they said made me think about the purpose of education and the means to achieve that purpose. According to the Partnership for 21st- Century Learning (P21), in order to prepare students for the grand challenges of the 21st-century, all schools must promote a higher order understanding of academic content that aims to cultivate interdisciplinary themes such as health literacy, civic literacy, entrepreneurial literacy, environmental literacy, and global awareness. In addition, students need to develop life skills such as social and emotional competencies to thrive in the increasingly complex life and work environments (Battelle for Kids, 2019).

Unfortunately, quite often most schools focus on developing basic literacies and cognitive skills, whereas social emotional competencies take a backseat. The reason is that there is an increasing tendency for schools to focus on collecting quantitative data through examinations to meet national as well as international standards. Rather than promoting students' natural curiosity and inquisitiveness, education has become a tool for policy makers to drive economy and to enhance global competitiveness. Modern education is now based on an assumption that high income and successful career are equal to happiness and wellbeing. As a result, our education system is pushing students to keep striving hard for achievements and delay happiness so that they will become happy in the future after years of pain. However, we now know that income is not a reliable predictor of happiness.

If students use the faculties of their mind to learn throughout the day, then why is it not important to learn about the nature of their mind? If the grand challenges in the world resulted from ideologies that are the fabrication of the human mind, we need to understand the nature of thoughts, why people think in certain ways, and what limitations and opportunities are afforded by their ways of thinking. Mindfulness may be the key for human beings to break the cycle of unhealthy cognitive and emotional schemas and evolve to a higher level of consciousness.

### **C. Challenge of a Teacher-Researcher**

When I was a primary teacher in Hong Kong, many of my coworkers conducted classroom research to improve their pedagogical content knowledge and it is part of the job descriptions. Hence, from my point of view, my teaching practices should always be based on evidence from research. In fact, conducting research is the way I inquire and make decisions in most aspects of my life, such as finance management, wellbeing, and social relationships. Therefore, when I am working as a teacher in Thailand, I decided to conduct action research to develop myself professionally. However, I have learned that conducting research is not always welcomed by school administrators.

When I first began to work in Thailand, very few teachers had initiated research in our school. Most of the research projects were assigned from the top management. Therefore, there was some skepticism and resistance from teachers, parents, and school administrators when a research project was initiated by a teacher. For example, I was

questioned by some colleagues if I was doing research for a pay raise. Some parents asked if I was trying to gain profit or a higher degree from the research. A few school administrators feared what I would do to the students or how the findings from the research may influence the school's reputation. Hence, they asked me to keep the research confidential. In fact, my proposal to conduct research for my doctoral thesis was rejected by a school administrator once because of his fear of what research may do to the children. The ignorance about the importance of research in improving the quality of education is a roadblock that I have faced frequently.

#### **D. Religious Association with Mindfulness**

Recently, mindfulness training has been generally recognized in the west as a pedagogy that can enhance the wellbeing of teachers and students. However, in Southeast Asia, the Buddhist temples are the place for education throughout centuries. Nowadays, although most regular Thai schools adopt the Western model of learning, mindfulness practice is considered as a religious ritual rather than a life skill for students to learn about themselves in daily life. Most Thai Festivals are related to Buddhism and students are required to participate in Buddhist ceremonies, Dhamma talks, and chanting regularly throughout the year. These activities help passing on the traditions and preserving the Thai culture. However, quite often, the chants and Dhamma talks are quite long and have a lot of Pali and Sanskrit words. Children find them hard to understand. As a result, many Thai students resent mindfulness meditation right from

the beginning. Therefore, I need to help them overcome this resistance by engaging them in a form of mindfulness practice that is useful for solving their daily life problems.

I advocate that mindfulness practices from the West can enrich and revitalize the practices from Eastern wisdom traditions. That is what I have been doing, trying to use Western pedagogies to introduce the core mindfulness theories and practices from the Eastern Buddhist traditions to my school community. I intend to show that children can understand and practice mindfulness through regular short interactive exercises and fun games. In fact, mindfulness games and short exercises are also welcomed by adults. Everyone enjoys active learning, not just children.

## **V. The Ripple Effects of Authentic Inquiry**

Looking back at the past 11 years of my life as a teacher-researcher, I felt a bit surreal. All memories have become stories recorded in this dissertation. I resigned from my position as a foreign teacher since March 2020. After I left the school, some of my previous colleagues, students, and their parents continue to share with me about their experiences in mindfulness practice. Although I am not working there anymore, the seeds of mindfulness may be sown in the hearts of many people. The ripple effects of mindfulness continue to spread.

During the pandemic, my coresearchers and I organized the Facing Crises with Equanimity Forum via Zoom, where we invite different mindfulness experts, university educators, K-12 teachers, and professionals from various industries to engage in cogens. There were participants from Thailand, the USA, Mexico, Nepal, Singapore, and Hong Kong. The online public forum offers free science education in an informal setting. From March to October in 2020, we met every Monday evening. We tried different kinds of contemplative practices and shared insights about how we could use them to face our life challenges. The forum addressed topics such as healthcare, education equity, racism, xenophobia, stress management, and death and dying. Through harnessing the resources from our community, we intended to help our community alleviate their anxiety during the lockdown.

From October to December 2020, there was a brief period of optimism in Thailand. The lockdown was lifted for a while. My friend and I volunteered to be the instructors of a mindfulness training program for the teachers and students from a vocational school in Nakhon Sawan, Thailand. This retreat allowed me to see how Theravada Buddhism can contribute to the education of a local community. It has been an inspiring experience for us to meet so many young and enthusiastic mindfulness practitioners, who used various art performances to express their understanding of mindfulness.



I am keeping in touch with most coresearchers after the MiDL program. I enrolled myself in the mindfulness instructor program by Koffman. He has become my mentor and good friend. I have been his student for about one and a half year until now. His teachings have a strong influence on the direction of my research. I shared what I have learned from him with my family and many other friends. For example, in the past two months, I offered a mindfulness training program to a friend's family. This friend is a very successful manager of a company with a happy family. However, he would like to find a way to deal with the stress from managing crises at work. After the program, my friend and his wife expressed that mindfulness practices really helped them see their life challenges in a more equanimous way.

After sitting for about fifteen minutes, I heard the alarm from my Smart watch which reminds me to stand up from time to time. During this pandemic, I have been sitting and working at my desk most of the time. As a result, I am now suffering from chronic backpain. I told Prof. Tobin that I learned about the importance of wellbeing the hard way. In the past, I mostly paid attention to my mental health and neglected my body. However, suffering is always my greatest teacher. Over the past month, I exercise every morning and evening. My heightened body awareness also triggered a ripple effect in my family and neighborhood. For example, my daughter, my husband, and mother-in-law have recently decided to exercise with me. A few young professionals in our village came to talk to me in the morning and told me how much they have been inspired by my dedication to fitness. Similar to the mindfulness of the mind, the mindfulness of our body can also trigger meaningful personal and social transformation.

The chronic pain I am facing triggered my sympathy towards my daughter and other students who have been enduring long hours of sitting in front of a screen. I began to brainstorm ideas about how I can teach my students about the detrimental effects of sitting too long in my science class. During the pandemic, some of my friends shared the same sentiment and said they now understood how much suffering there is for their kids to sit and learn for hours. In fact, before the pandemic, students also had to sit for long hours. However, now parents get to see the suffering of their children and become more aware of the problem. Recently, my friends and I began to discuss and envision an education that is active, engaging, inquiry-based, place-based, transdisciplinary, and holistic. After this cogen, my neighbor next door, a university professor in sports engineering, decided to homeschool her sons with the approaches that the moms talked about. She said she could not find such kind of education in Thailand for her children, so she took the issue into her own hands. I look forward to seeing how this courageous parent will implement the new ideas that we co-created during the cogen. There is also another mother, who suffered from chronic depression. She decided to get professional help after the cogen. She told me that she was inspired by our conversation about wellbeing, especially the part where we said happiness is a skill and a choice. I feel excited to see the power of cogen. It is a vehicle of social transformation.

I recognize that changing habits and a culture may take a long time and a lot of effort. However, every individual has the power to be the seed of transformation. Considering the current state of our planet, it is now imperative for us to begin the transformation through contemplating difficult questions. We can learn from the Noble Eightfold Path in Buddhism, which begins from appropriate view or appropriate intention. As educators, we need to ask ourselves what science education is for, how science education can benefit the wellbeing of every member in the institution, and what science education intends to achieve. Finding the appropriate answers to the above questions can be a long soul-searching process, which is emergent and contingent. However, science educators and educators in general should never stop asking these questions, even though sometimes they can be challenging or inconvenient.

## **RECOMMENDATIONS AND FUTURE WORK**

There has been a lot of skepticism towards science and technology recently. For example, there is a huge number of people in many countries feeling skeptical towards the effectiveness and side effects of vaccination and thus refuse to get vaccinated during the pandemic. Moreover, many citizens feel reluctant to wear facial masks in public despite of the recommendations from WHO and many medical doctors. Within my neighborhood in Thailand, there is a teacher who does not like to wear facial masks. I once asked him why he did not want to wear a mask. He said he did not believe in the propaganda of scientists

and the government because they are just looking for ways to make profit. Such skepticism towards science can be dangerous to the health and safety of all global citizens.

Should we really blame science for all current challenges facing humanity? Are science and technologies really the causes of climate change, mass extinction, pollution or even the recent pandemic? Science and technologies are human constructions, and they are meant to be tools for us to solve daily problems. However, whether these tools can do good for humanity depends on how people use them. If our use of science and technology comes from violence, greed, or ignorance, our speech actions will cause more harm than good. However, if our use of science and technology is based on awareness, equanimity, and compassion, then our speech and actions will benefit more than harm. It is the mindlessness, aversion, and greed that arise in the human mind that cause suffering to other human beings and other species, rather than science and technology.

The use of science and technology as well as the contribution of scientific research are always limited by the intention, perspective and biases of the researchers, no matter how hard we try to eliminate biases. Therefore, the main purpose of this dissertation is to propose scientists and science educators to understand how their mind works and to cultivate a different relationship with biases. The focus of this inquiry is not about criticizing the flaws of Western science but is about how science and science education can embrace and transform the flaws of the human mind into opportunities to learn about the

universe. Rather than dehumanizing science by trying to get rid of subjectivity, scientists can embrace subjectivity as a learning tool. Through observing and understanding the interactions between our subjective world with the external world, we learn about how our feelings, thoughts, emotions, and actions influence our surrounding environment. This is an important lesson that I have learned from practicing mindfulness. Biases, defilements, and all difficult emotions are not something for us to eliminate. Instead, they can transform into the compost for growing a lotus (i.e., awakening). When we can learn to live with our imperfections in harmony, our ego becomes less eager to compete, to discriminate, and to harm the others.

Building on the scholarship of Kincheloe and Tobin (2015), I advocate that science education must evolve beyond a step-by-step reductionist way of thinking because it does not help our youth to innovate, to evolve consciously, to overcome ignorance, to become change agents, and to live with the society and nature in harmony. Learning science and any subject should be an iterative, creative, emergent, and ongoing inquiry. Rather than removing the qualities that makes us human, science education needs to embrace the limitations as well as to expand the potential of the human mind, which is the main research instrument. The human mind is constantly under the influence of physical sensations, feelings, emotions, and distractions. Moreover, human beings have the tendency to seek for pleasure and to avoid discomfort. That is why most people tend to associate with people with similar worldviews, values, and beliefs. However, even we can find many people with similar beliefs, it does not mean that what we know is the absolute truth. If we truly

understand the nature of human mind, we will also understand that none of the knowledge systems in the world hold the absolute truth, including science. Guba and Lincoln (1994) argued that all inquiry paradigms are human constructions and thus have flaws. Or as Tobin (2015) wrote that “As theories illuminate so they obscure.” (p.4) It does not mean that we should reject science, rationality, and all metanarratives altogether because this is another extreme. Whenever we reject or discriminate another knowledge system, our actions are founded upon aversion, egotism, and ignorance. We do not need to eliminate the human factor from science or to reject science because of potential biases. But I am inviting researchers to transcend a narrow view of science and to allow the definition of science to keep evolving and expanding. We need to find a balance or the middle way between attaching to a fixed view of science and rejecting science. Again, this middle ground is not fixed, but depends on what is practical and ethical for a salient context. Mindfulness contributes to science through helping us know when our thoughts become dogmatic and extreme. The middle way is realized when we do not feel the need to stop thinking or the need to attach to any thought. We allow all thoughts, feelings, and emotions to come and go naturally.

The insight that has dramatically improved my mental well-being is understanding that negative emotions, biases, mistakes, and defilements are tools for me to know myself rather than something to get rid of. Through noticing our biases in a nonjudgmental way, we get to learn about our own worldviews and values. According to the lived experiences of myself and many other coresearchers, the insight of nonself, impermanent, and

unsatisfactory nature of human existence is liberating rather than depressing. For example, I am aware that I am a Buddhist. My personal beliefs inevitably influence where I direct my attention to and how I interpret my lived experiences. However, with mindfulness, I notice such bias in my perspective and I will not fool myself that I am not biased. Moreover, thoughts and biases are transient and not part of my identity. Sometimes I am biased and sometimes I am not. There is no need to strive to uphold a fixed identity, or to adhere to a fixed worldview. Accepting my limitations is more authentic than pretending that I am not biased. I also learn to be humble and nonjudgmental when I notice that someone else is biased. Like what Palawongse said in the cogen, we understand that everyone is defiled and that none of us is perfect, we learn to be gentle to ourselves and to forgive the others. Ven. Pamojjo also mentioned that the moment we notice our biases, there is a moment of mindfulness and equanimity. As I am writing this dissertation, I have been mindful not to lie or to cause harm as well as not suppressing the flow of thoughts and emotions that arise. When I peacefully accept the conditions of my human mind, there is a feeling of release from the trap of reductionism. I can accept the inherent uncertainty of a conclusion and allow the inquiry to keep unfolding.

Through this dissertation I aim to inspire imagination and raise awareness rather than attempting to provide another dogmatic definition of science or science education. I do not claim that I have the authority to define (or redefine) science because of the evidence that I have provided here. Instead, I am challenging the received view of science as a dehumanized, cold cognitive, and elite enterprise. Quite often, science has been taught as

a bunch of facts, equations, and theories that students need to memorize. Science has become disconnected from students' daily needs because it has been limited to cognition and ignoring other so-called subjective aspects of human existence, such as emotions, passion, and spirituality. However, what this authentic inquiry shows that all faculties of the human mind play an important role in making sense of this world. In fact, excluding certain faculties of the human mind from science is unnatural and irrational. Our lives do not happen only in our thoughts, but we also make sense of the world through feelings, instincts, intuition, and many other underexplored faculties of the human mind.

Through the inclusion of mindfulness practice as part of science education agenda, I intend to reframe science as a tool to understand any phenomenon that happens in our lives. Science can be a tool for us to know ourselves and to transcend our attachment to dogmatic views and materials. Science can also be used to improve the quality of our living, not in a material sense, but by cultivating a more connected, compassionate, and conscious way of being. Science does not have to happen in a physical location but can be learned within this body and mind of ours as well. When we master the science of knowing ourselves, we will know how to take care of ourselves, to empathize with others, and how to deal with crises in a rational, conscious, and compassionate way. I hope my journey will inspire other teachers and science educators to imagine what science can be, to define science in their own way, and to allow students to do so.



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### BIOGRAPHICAL DATA

<b>NAME:</b>	<b>Ms. Yau Yan Wong</b>
<b>DATE OF BIRTH:</b>	March 4, 1980
<b>PLACE OF BIRTH:</b>	Hong Kong
<b>GRADUATION:</b>	<p>B.Sc. Psychology with Cum Laude Honor, Virginia Polytechnic Institute and State University, U.S.A. since 2002</p> <p>M.Sc. Research Methods with Honor, University College London, U.K. since 2004</p> <p>Postgraduate Diploma in Education (PGDE) with Merit, Hong Kong Baptist University, H.K. since 2009</p>