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## Towards Positive Education: A Mindful School Model

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## Towards Positive Education: A Mindful School Model

### Abstract

In a world of increasing emphasis on well-being, positive education, articulated as the teaching of skills of well-being alongside academic ones, can be a vehicle for educating both the mind and heart. The Singapore education system is moving towards a future curricula, C2015, fostering student-centric and values-driven education. This demands continued engagement of the whole-child through a co-constructive journey, a school ecosystem that encompasses total curricula and whole-school approach, and a future-oriented perspective with multiple pathways of excellence. Mindfulness is a crucial lever for enacting qualitative transformation by enabling individuals and systems to be skilful architects of internal and external changes. It confers clarity, autonomy, and congruence that motivates, calibrates, and informs action. This paper delineates a whole-school approach to cultivating dispositional mindfulness through teaching, embedding and living it. An exposition of mindful schools is given, including but not limited to mindful teaching, learning, structures, and relationships. These mindful components interact to form a collective greater than its summation, instilling a culture and climate that can be self-sustaining. Ultimately, mindful schools can serve as the foundation for positive educational curricula (e.g. character strengths, resilience, motivation), furnishing a pathway towards student flourishing.

### Keywords

mindfulness, positive education, mindful education, mindful teaching, mindful learning, mindful school structure, mindfulness-based strengths practice

### Disciplines

Curriculum and Instruction | Educational Psychology | Elementary and Middle and Secondary Education Administration | Psychology | Social and Behavioral Sciences

Towards Positive Education: A Mindful School Model

Chin Leng Ong

University of Pennsylvania

A Capstone Project Submitted

In Partial Fulfilment of the Requirements for the Degree of

Master of Applied Positive Psychology

Advisor: Dr. Jane. E. Gillham

August 1, 2013

Towards Positive Education: A Mindful School Model  
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In a world of increasing emphasis on well-being, positive education, articulated as the teaching of skills of well-being alongside academic ones, can be a vehicle for educating both the mind and heart. The Singapore education system is moving towards a future curricula, C2015, fostering student-centric and values-driven education. This demands continued engagement of the whole-child through a co-constructive journey, a school ecosystem that encompasses total curricula and whole-school approach, and a future-oriented perspective with multiple pathways of excellence. Mindfulness is a crucial lever for enacting qualitative transformation by enabling individuals and systems to be skilful architects of internal and external changes. It confers clarity, autonomy, and congruence that motivates, calibrates, and informs action. This paper delineates a whole-school approach to cultivating dispositional mindfulness through teaching, embedding and living it. An exposition of mindful schools is given, including but not limited to mindful teaching, learning, structures, and relationships. These mindful components interact to form a collective greater than its summation, instilling a culture and climate that can be self-sustaining. Ultimately, mindful schools can serve as the foundation for positive educational curricula (e.g. character strengths, resilience, motivation), furnishing a pathway towards student flourishing.

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## **1. Education**

### **1.1 Aims of Education**

What should education aim to achieve? This question has been asked by many before us, and will continue to be asked by many after us. A distinguished educational philosopher from the twentieth century, Richard Peters (1966), put forth that education is the initiation of activities intrinsically worthwhile, and precludes any extrinsic ends to it. One such activity is the pursuit of knowledge and understanding for the cultivation of rationality or reason. This view has been consistently held by majority of philosophers such as Socrates, Plato, Aristotle and others as the fundamental aim of education. Hirst (1965) describes the goal of 'liberal education' as developing the 'rational mind' or the capacity to think. Nevertheless, this narrow intellectual conception of education can be expanded to include broader aims, which White (2009) describes as developing "alternative perspectives linked to wider and more practical, utilitarian justifications of the enterprise" (Hyland, 2011, p.179). These justifications may concern mental health (Wilson, 1972), work and well-being (Marples, 2010), good citizenship (Brighouse, 2006), and others that define its worth in a particular direction. However, the question of what is justified or worthwhile remains debatable.

This brings us to a broader aim of education as an "elaborate social mechanism designed to bring about in the persons submitted to it certain skills and attitudes that are judged to be useful and desirable in that society" (O'Connor, 1968, p.7). This highlights the normative nature of education; it is ultimately value-laden and dependent on the societal needs in which it is built on. Harkin, Turner, and Dawn. (2001) echo, "education systems reflect the nature of the society in which they exist" (p.139). In summary, the aims of education should be idiosyncratic and

contextualized to the society of interest. Consequently, any comparative evaluation of education systems may be irrelevant without considering its inherent societal parameters.

## **1.2 Well-Being and Positive Psychology**

### ***Well-Being as a Value***

Well-being can be one of the many relevant needs of the society. It is one of many possible values of a good life (Pawelski & Moores, 2013). The past decade has seen increasing global emphasis on well-being for no less than three reasons: first, for some countries (e.g. US, China), increased economic growth over decades has not been commensurate with changes in happiness and life satisfaction of its people (Easterlin, Morgan, Switek, & Wang, 2012; Helliwell, Layard, & Sachs, 2012). Second, economic metrics have not been a fair measure of a nation's progress. This is reiterated by Robert F. Kennedy (1968):

The gross national product counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage... it does not allow for the health of our children, the quality of their education, or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages...it measures everything, in short, except that which makes life worthwhile (para. 22).

Thirdly, the emergence of the field of positive psychology during Martin Seligman's presidential tenure at the American Psychological Association in 1998 has paved way for an increased focus on what makes life worth living. As a testament to the renewed recognition of well-being as a global imperative, the United Nations in 2011 passed a resolution “to pursue the elaboration of additional measures that better capture the importance of the pursuit of happiness and well-being in development with a view to guiding their public policies” (United Nations, 2011, para. 8).

### *Positive Psychology*

Positive psychology (PP) is the scientific study of optimal human functioning. It aims to discover and promote factors that allow individuals, communities, societies to thrive and flourish (Haidt & Gable, 2005). Seligman (American Psychological Association, 1999) believed that much of psychology after World War II has focused on the identification and treatment of mental illnesses, and largely neglected the building of fulfilling and productive lives, and the identifying and nurturing of high talent. The latter two are equally valuable and important for a flourishing life. Seligman and Csikszentmihalyi (2000) articulated that psychology has to move beyond a diseased model of remediating what is wrong, fixing what is broken, and repairing the worst. The fundamental premise is that the presence of many aspects of well-being is not merely an absence of their lack thereof. A multitude of examples can illustrate this: happiness is not the absence of unhappiness, peace is not the absence of war, and health is not the absence of illness. Positive states of human flourishing (e.g. positive emotions, engagement, positive relationships, meaning and purpose, accomplishment) are genuine and deserve balanced attention.

Nevertheless, PP is neither a new field nor a paradigm shift. In fact, it has a long history, dating back to William James' writings in 1902 on what he termed "healthy-mindedness" (Gable & Haidt, 2005). The term "positive psychology" first appeared in the last chapter of Maslow's book *Motivation and Personality* (1954), the title of which was, "Toward a Positive Psychology." Maslow captured psychology's asymmetrical focus, remarking that "the science of psychology has been far more successful on the negative than on the positive side; it has revealed to us much about man's shortcomings, his illnesses, his sins, but little about his potentialities, his virtues, his achievable aspirations, or his full psychological height" (1954, p.



354). PP definitely shares roots with the humanist movement, bearing similarities to the work of Maslow, Rogers and many others (Froh, 2004). As such, PP may be better understood as a movement uniting what has been "scattered and disparate lines of theory and research about what make life worth living" (Seligman, Steen, Park, & Peterson, 2005, p. 410). In addition, as a re-calibration of focus towards the full spectrum of human experience, PP does not deny the negative aspects that occur nor attempt to 'be positive'. It acknowledges the negative aspects as much as it seeks to affirm the positives. Indeed as Pawelski (2005) echoed, PP requires a kind of '*balanced meliorism*' that includes remediation and enhancement.

PP employs scientific rigor in its empirical inquiry, and in this manner differs from the branch of self-help which presents phenomenological evidence (e.g. personal anecdotes). PP encompasses three areas of focus: positive subjective experiences, positive individual traits and positive institutions (Seligman & Csikszentmihalyi, 2000), and can be applied to a vast number of domains, for instance coaching, education, business, media, sports etc. I will explore the domain of Positive Education in this paper and elaborate on mindfulness and mindful schools as positive individual traits and institutions respectively.

### **1.3 Positive Education**

Seligman, Ernst, Gillham, Reivich, and Linkins (2009) describe the threefold motivation of positive education: 1) as an antidote to social, emotional, and behavioral difficulties, 2) as a vehicle for increasing happiness and life satisfaction, and 3) to enhance learning. Positive schools recognize that in addition to focusing on psychological distress in our students, a proactive approach in building protective factors is needed to buffer them against adversity and pain (Terjesen, Jacofsky, Froh, & DiGiuseppe, 2004). Cultivating positive emotions can enhance learning by broadening attention and increasing creative and holistic thinking

(Fredrickson, 1998; Fredrickson & Branigan, 2005). This promotes increased emotional regulation and builds resilience, over and above alleviating anxiety and stress. Similarly, the development of character strengths such as hope, kindness, social intelligence, self-control and perspective not only buffer against the negative effects of stress and trauma, but also lead to positive youth developmental outcomes (Park, 2004). Such a preventative approach expands our ability to work towards fulfilling the needs of all students, improving their well-being regardless of where they currently stand.

Given that well-being is imperative and children spend most of their waking hours of the day in school, the school would be a natural setting for well-being to be cultivated, recognized, celebrated and encouraged. Seligman et al. (2009) often ask these two questions to educators and parents one after another: "in two words or less, what do you most want for your children?" and "in two words or less, what do schools teach?" Responses for both often do not align, with the first question eliciting well-being responses, while the second highlighting aptitudes and accomplishments. That schools often teach what is different from parents' expectations may seem to suggest the unnecessary dichotomy between well-being and accomplishment. Parents often tell their kids "no pain, no gain", that arduous effort devoted into working hard would justify its academic outcomes even if they were uninterested or unmotivated. Positive education reconciles this misguided split by advocating for the *teaching of skills of well-being alongside skills of accomplishment*.

Topics in positive education are plenty (e.g. resilience, engagement, intrinsic motivation, self-control, purpose). Multiple programs such as the Penn Resiliency Programme (PRP), Strath Haven Positive Psychology Curriculum and others have shown positive results in mitigating ill-being and enhancing well-being (Seligman et al., 2009). On a larger scale, the

first whole-school approach infusing PP was implemented by Geelong Grammar School starting 2008. They have been doing so through three approaches: (1) explicit teaching across several grades on positive education topics (e.g. resilience, gratitude, strengths), (2) embedding positive education into the curriculum (e.g. identifying character strengths in Macbeth in literature class), and (3) living positive education (e.g. practicing in daily lives). Research on its effectiveness is still ongoing. Taking a whole-school approach has its advantages over isolated one-off programs, as there is greater environmental influence and congruence.

The topic of mindfulness is salient in positive education for two main reasons. First, according to Siegel (2007), mindfulness helps to develop the whole brain. He writes that in addition to the cognitive (left-brain) learning that is emphasized in schools, mindfulness "invites the right mode to participate in the experience" (Siegel, 2007, p.234), therefore facilitating holistic education and development. Given the growing emphasis on affective and social education, mindfulness can be an important driver. Second, aligned with the approach of balanced meliorism in PP, mindfulness cultivates student well-being over and above eradicating student malaise. For instance, mindfulness reduces negative emotional reactivity in times of distress (Cresway, Way, Eisenberger, & Lieberman, 2007) and also promotes freedom in making self-regulatory decisions (Brown, Ryan, & Creswell, 2007). John Teasdale succinctly articulates the role of mindfulness: "we're not just fixing pathology here, we're actually learning to recognize patterns of mind that both contribute to the way in which we convert sadness into depression, mild fear into chronic anxiety but stand between us and our inherent potential for another way of being, greater wisdom and compassion" (cited in Burnett, 2011, p.98).

#### **1.4 Singapore Education System**

Singapore's transformation as a nation from a "third to first world" within a generation is highly laudable (Yew, 2000). Its education system has paralleled its growth, and is being described as "world-leading", having ranked among the top in several international studies on academic attainment such as the Trends in International Mathematics and Science Study (TIMSS), Progress in International Reading Literacy Study (PIRLS) and the Programme for International Student Assessment (PISA). A recent McKinsey (2010) report placed Singapore as having "great" and "most improved" schools and capable teachers. This status of "most improved" means that the Singapore education system has achieved significant, sustained, and widespread gains in student outcomes on international and national assessments from 1980 onwards. Success factors for this achievement include the nation's forward-looking vision that tightly links education with economic development, top-down integrated planning with other agencies, small scale with tightly coupled systems, human resource managements to match demands of the system, strong focus on mathematics, science and technical skills and a system of continuous improvement (OECD, 2011).

In order to better illustrate the nation's contextual factors guiding its educational aims, a brief background of its needs and vision will be articulated. Following Singapore's independence in 1965, the nation was faced with high unemployment, a low-skilled population, and high population growth. In order to equip the population with basic education and build an export-driven economy, the government rolled out 'survival-driven' education (1959-1978) with rapid school building and large-scale recruitment of teachers. This was rather successful with universal primary and lower secondary education achieved in 1965 and early 1970s respectively. However, while Singapore had grown to become a newly-industrializing economy,

there was high educational waste in the form of poor literacy standards and early departure from school by many students.(Goh, 1979). Out of every 1000 students entering primary (grade) one, only 444 reached secondary four (grade 10) after ten years. Also, increasing competition from neighboring Asian countries for low-skilled and labor-intensive industries was slowly eroding its competitive edge. In response, the government shifted its economic strategy to a capital and skills-intensive one. The education system mirrored this shift from a one-size-fits-all to a differentiated approach, providing multiple pathways through streaming (or tracking) students based on abilities. This became the 'efficiency-driven' education phase (1979 to 1996). Attrition rates were drastically reduced and literacy rates were significantly raised. Many technical workers were produced to attract companies with more sophisticated technological base, and the attractiveness of vocational education was vastly increased.

Nevertheless, after the Asian Financial Crisis of 1997, the world headed towards a knowledge-based economy. Then Prime Minister Goh (1997) described three features of the future: the intense competition of a global future with no permanent competitive edge, innovation and knowledge as absolutely critical to stay ahead, and change as a permanent state will be increasingly rapid and unpredictable, affecting everything we do at work, in society and at home. As such, the educational system created a new vision "*Thinking Schools, Learning Nation*" (TSLN), undergirded by the premise that a nation's wealth in the 21st century will depend on the people's capacity to continuously learn (Goh, 1997). TSLN encompasses a wide range of initiatives designed to tailor education to the abilities and needs of students, to provide more flexibility and choice, and to transform the structures of education. This marks the beginning of an "ability-driven" phase of education (1997 to present). Tharman Shanmugaratnam, then Minister of Education, captured its essence by saying "we need a

mountain range of excellence, not just one peak, to inspire all our young to find their passions and climb as far as they can" (cited in Lee, Goh, Fredriksen, & Tan, 2008).

### ***Teach Less, Learn More***

In 2004, Prime Minister Lee Hsien Loong introduced the initiative of "Teach Less, Learn More" (TLLM) under the TSLN umbrella, which aims to touch the heart and engage the minds by promoting a different paradigm of learning. It hopes to "lessen the dependence on rote learning, repetitive tests and instruction, and focus more on engaged teaching, discovery through experiences, differentiated teaching, learning of lifelong skills and building of character through innovative teaching approaches and pedagogies" (interview with Ho Peng, then Director-General of Education; as cited in OECD, 2011). Such a paradigm requires a gradual shift and bears several implications for schools.

***First Implication: Whole-child engagement.*** First, engaged learning becomes the core. Jones, Valdez, Nowakowski, and Rasmussen(1994) articulated four elements of engaged learning: learners who are responsible and self-regulated, who are strategic in the learning process and apply the learned knowledge, who understand learning as social and collaborate with others, and who are energized by learning. In essence, it entails intrinsically motivated involvement of cognitive processes such as decision making, evaluation and problem solving (Kearsley & Shneiderman, 1998), and requires mobilization of cognitive, affective and motivational strategies for learning. Involvement of the whole-child is cornerstone.

***Second Implication: Qualitative transformation.*** With the emphasis on quantifiable performance indicators such as academic results, the primary dilemma remains: why "teach less" when "teach more" leads to more examination success? As such, for a qualitative shift to occur, a fundamental and epistemological shift in school processes as well as teachers' and

students' mindset is imperative. Ng (2008) states that there needs to be understanding (not just memory), pedagogy (not just activity), social constructivism (not just individual study), self-directed learning (not just teacher-directed), formative and self-assessment (not just summative), and learning about learning (not just about the subject). Nevertheless, he cautioned against 'throwing the baby out with the bath water' by emphasizing a balance between these competing needs. As echoed by Ho Peng (as cited in OECD, 2011, p.163), "the Singapore education system has strong holding power and strengths in literacy, mathematics, and sciences, and these should remain. However, it needed to do better on the soft skills that enable future learning".

***Third Implication: Whole-school approach.*** TLLM involves not only epistemological shifts in teaching and learning processes, but also of the examination-oriented culture, mindsets of leaders and teachers, and the supporting systems and school structures. School leaders need to empower teachers and enable them to take risks and make changes to their jobs. They need to infuse a culture of holistic learning in the school, and be an embodiment of these core beliefs. Certainly, these also warrant positive upper management support from the Ministry of Education.

### ***Student-Centric, Values-Driven Education***

The world in the 21st century unleashes rapid advances in technology and changes traditional societal structure, lifestyles, families, and the media in unpredictable ways. Holistic education beyond the academics is an urgent imperative. To meet the needs of the 21st century, the Ministry of Education (2010) implemented a new framework (21CC) outlining the skills and competencies required of our future generation. These include information and communication skills, civic literacy, global awareness, cross-cultural skills, critical and inventive thinking, and socio-emotional competencies. These are anchored upon the core

shared values of respect, responsibility, resilience, integrity, care, and harmony. The 21CC framework will be part of Curriculum 2015 (C2015) for Singapore's education system, the latter a curriculum that would develop student attributes embedded in the desired outcomes of education (MOE, 1997). In 2011, the Ministry of Education introduced Character and Citizenship Education (CCE) in schools and articulated it as a pathway towards a student-centric, values-driven education (MOE, 2012a). Several implications are highlighted.

***First Implication: Future-orientation.*** In the keynote address at the CCE conference 2011, Lee (2012) conveyed the essence of CCE as education for future-oriented citizenship. This concept of citizenship departs from traditional ones that reflect the here-and-now contexts of nations. He elaborates, "citizenship for the future is a different matter - it is a bold step forward, and a leap of faith... future-oriented citizenship acknowledges the reality and necessity of change; it looks beyond the present and accepts uncertainty" (Lee, 2012, p.509).

***Second Implication: Co-construction.*** An education that is drawn by the future requires an open mind and an avid ability in sense-making of what is emerging. It is embracing uncertainty with faith and confidence that enables active participation and engagement. As Lee (2012) further adds, "once a nation adopts a future-orientated approach to citizenship, the state of play for citizenship will change from state-led to collective construction or co-construction of the future" (p.510). It is stepping into a learning journey together.

***Third Implication: Total curriculum.*** CCE will adopt a total curriculum approach, meaning that it will be taught both explicitly as an independent subject and implicitly across various other curricula (e.g. math, sport, music). Learning has to be integrated instead of compartmentalized (Lee, 2008).



### *Aims and Challenges of the Singapore's Educational System*

Aims and challenges for the future are spelled out through the implications above. The need for holistic development draws forth the need for whole-child engagement. This means extending beyond cognitive excellence to emotional and social well-being. An education that drives these changes has to involve a whole-school approach with a total curriculum. Having a future-orientation and being willing to co-construct reality imply being more proactive and resilient. Finally, achieving qualitative educational transformation requires innovation and breaking out of old molds.

Moving on, the Singapore education system will continue to mold the future of the nation by providing “hope” to the next generation, developing students with a “heart” and a longing for “home” (MOE, 2012b). It will continue to provide a flexible, diverse, and inclusive education with multiple peaks of excellence. Excellence remains a relevant goal but there needs to be a broader way of defining merit. It has to be accompanied by ethical dimensions of integrity and social responsibility. As the system moves towards enhancing socio-emotional skills through CCE, it has to ensure that academic performance is maintained. A delicate balance must be struck between traditional and progressive education.

Strategically speaking, since the TSLN agenda in 1997, there has been rapid progress in the "thinking" phase, nurturing thinking skills such as creativity, innovation and critical thinking. The introduction of CCE and C2015 will see the launch of the nation into the "learning" phase (Lee, 2012).

### **1.5 A Mindful Mold**

Education Minister Heng Swee Keat (MOE, 2013) reiterated that learning with hope for the future, a heart for others, and a longing for home requires us to "return back to the fundamentals", re-affirming the basic goals of education. The pragmatic philosopher John Dewey once observed, "Education isn't preparation for life. Education is life itself." It is through the view of education as a learning process and not as an outcome that empowers us in our current effort to bring about holistic developmental opportunities and active engagement for future-oriented citizenship. It is about expanding an awareness of possibilities and a sense of self and collective efficacy that galvanizes the sort of collective action that is required (e.g. whole-school and total curricula approach). Qualitative transformation occurs when we embrace our agency as co-constructors of reality rather than accepting a pre-constructed reality. Such an education is transformation inside-out. However, we need to first realize and understand the fundamentals, before we enact changes.

Mindfulness can be a crucial ingredient in education as transformation by creating spaces that allow us to shift into modes of change. According to Lanestrand (2012), one way it does so is by fully allowing us to experience ourselves, others, and our environment as what it is, contributing to our ability to develop and learn. Further, such kind of growth is consequently organic. Aligned with how Gunaratana (2002) describes mindfulness as "an alert participation in the ongoing process of living" (p.142), mindfulness shifts our role from being a life participant to a participant-observer, and from a mode of doing to being. Ranging from a keen sense of self and other awareness, to relationships, decision making, character development, and to school structures, mindfulness enhances these processes and contributes to qualitative transformation.

## 2. Mindfulness

Mindfulness is a rapidly burgeoning field of focus within psychology (Brown, Ryan, & Creswell, 2007). Recent developments and convergence of various disciplines including historical traditions such as Buddhism, psychology and neuroscience have allowed us to paint broad brush strokes on what mindfulness means. Mindfulness remains a multi-faceted construct which can be conceptualized, theorized, and operationalized in a myriad of ways (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Bishop et al., 2004; Brown, Ryan, & Creswell, 2007). Despite its differences, there are core common features which I will aim to extract, integrate, and eventually assimilate into an operational definition relevant for our discussion. The proposed operational definition here is not 'the' but rather 'a' definition; it is not aimed at refining, improving, or challenging any existing ones, as it is a mere theoretical synthesis among the existing definition pool. Nevertheless, it should provide a practical, parsimonious and direct understanding of mindfulness with a view towards application.

### 2.1 School Vignette

[The following vignette is fiction-based consisting false names and stories; it only serves illustrative purpose. 'I' here refers to Paul, a beginning eighth grade Chemistry teacher.]

*I trod down the hallways to my class, 2A2, full of excitement and anticipation. I have prepared an interesting experiential activity for this class of mostly kinaesthetic learners, and am confident they would enjoy since it relates to their common passion - soccer. The only two challenges were integrating the activity within one hour, as well as dealing with a disruptive minority of delinquent kids. For the former, I had planned some buffer time, and to the latter, I made careful plans to separate disruptive individuals by assigning them to roles that would tap on their respective strengths.*

*The bell rang. I arrived outside 2A2 classroom, awaiting the expected chaos that would descend after Mr. Tan, whose math class was before mine, left the classroom. It was unusual this time; a supervising Mr. Tan was seen ambling across the class of eerily quiet 2A2. Mr. Tan caught my gaze and came up to me asking permission for a 10 minutes extension of his class as he started the test later than expected. Owing to situational exigencies and a mark of courtesy, I acquiesced. My polite demeanor was however a poor reflection of anxiety, disappointment and irritation I felt upon understanding how my activity would be affected. I felt angry at Mr. Tan for not warning me of such a possibility. There was also self-blame for the lack of better contingency plan for the unexpected; a much longer buffer time was clearly needed. I recalled how a previous time shortage for another class activity had been a complete disaster, and negative thoughts about similar consequences filled my mind. I started thinking how my students will be disappointed in me, and how irresponsible I was as a teacher. It was a downward spiral.*

*Someone tapped me from behind. It was Mr. Ong, the form teacher of 2A2. He looked at my flustered and dejected expression, and asked me what had happened. His words jolted me back to the present moment. I replied perfunctorily conveying a sense of normalcy, casting any signs of internal turmoil away. I told him I was waiting for Mr. Tan's class to end in a while. Mr. Ong looked assured and walked across the hallway.*

*With this orientation back to the present moment, I realized I had to find a solution for the shortage of time for my class activity. I flipped open my activity agenda and pondered how I could modify various segments to make it shorter. No matter how I tried to revise each segment, curricula requirements remained the bottleneck, and there was little way out by compacting the activity. I had to think out of the box. Mr. Ong's presence moments ago triggered my recall that*

*his class was scheduled after mine. In a few moments, I quickly dashed towards him, who was just ahead in the hallway, seeking a mutual arrangement that allowed me to borrow 15 minutes of his class time which I will repay him the next week. Mr. Ong was more than willing to spare me the time since he had no urgent agenda that class. I heaved a sigh of relief.*

*I walked back to 2A2, just in time Mr. Tan dismissed the class. He apologized for the unexpected delay and thanked me profusely for my generous accommodation. We exchanged smiles. Students of 2A2 greeted me in their usual boisterous manner as I strode into the class. Beneath expressions of relief after their test emerged fatigue and listless faces. I had to spend the next five minutes galvanizing them to get prepared for the activity. The mention of soccer helped energized the climate of the classroom. I got them to gather into groups while I wrote instructions on the board. Just as I was about to finish my last sentence, I was interrupted by Hidayat shouting, "do you want to fight?" Hidayat's face was brimming red with anger when I turned to look at him. He was facing one of the frequent trouble-makers in class, Amran.*

*This isn't the first time something like this happened in class. I had sternly warned both of them before, yet they were still up to mischief. Sensing that my class would be disrupted once again, I could sense myself getting into a rage. My heart pumped faster, I was feeling angry, and I was aware of my brisk movements to Amran and Hidayat. I could sense the look of terror on my face, and was aware of how I would soon react by screaming at them and sending them out of class. However, this time it was different. Having such awareness allowed me to get a grip on myself. I thought to myself that reacting in this habitual manner would not be helpful. This clarity of attention reduced the intensity of anger in me, and instead brought me closer to the present moment with the boys.*

*"Take three deep breaths, Hidayat and Amran", I spoke calmly to them and instructed for them to follow me. Following that, I asked each of them individually to express what they were feeling. Hidayat said, "I am angry because Amran is rude to me". I acknowledged him and encouraged him to rephrase it, repeating it after me "I see myself becoming angry because Amran was rude to me". After both of them verbalized their feelings, we explored the consequences of their potential actions (e.g. a fight). As Hidayat and Amran were talking about their impulsivity, they looked considerably at peace with each other and themselves. It was clearly a teachable moment. Another 15 minutes had passed, and the activity had to be postponed, but it was all worth it. 2A2 was on its way to become more mindful.*

## **2.2 Differentiating Mindfulness: A Tale of Two Traditions**

There are two main traditions of mindfulness research in the literature, one based on mindfulness meditation which has its origins from Buddhism, and the other a cognitive theory of mindfulness developed by Ellen Langer (1989a).

### ***Meditative Mindfulness***

While the concept of mindfulness based on mindfulness meditation is most firmly rooted in Buddhist psychology, there are varying lineages within Buddhism, with not one universal view of mindfulness (Dreyfus, 2011). Mindfulness as adopted in the present Western mindfulness meditation context has its roots in the Theravada Buddhist tradition and was first introduced by Nyanaponika Thera (1972) who defined it as "clear and single-minded awareness of what actually happens to us and in us at the successive moments of perception" (p.5). Buddhist scholar Thich Nhat Hanh (1976) describes it as "keeping one's consciousness alive to the present reality" (p. 11). On its own, mindfulness is derived from the Pali language word

*'sati'* meaning *'to remember'* but as a mode of consciousness it commonly signifies presence of mind (Bodhi, 2000; Nyaniponika, 1973).

Within psychology, it was first investigated in the context of clinical research, e.g. in Mindfulness-Based Stress Reduction (MBSR) by Jon Kabat-Zinn (1982). Kabat-Zinn (2003) defines mindfulness as “the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of the experience moment by moment” (p.145). Seven key attitudinal factors characterize such mindfulness: non-judgmental, patience, beginner's mind, trust, non-striving, acceptance and letting go (Kabat-Zinn, 1990, p.33-38). Despite the popular use of mindfulness in treatments, clinicians and researchers had their own perceptions of what mindfulness means and how it should be measured; there was a lack of uniformity.

It has only been brought into non-clinical psychology research recently, e.g. Brown and Ryan (2003) defined mindfulness as a receptive attention to and awareness of present events and experience. These authors highlight mindfulness as a self-regulatory capacity. Bishop et al. (2004) attempted to establish a consensus on its conceptual and operational definition, proposing a two-component model of mindfulness consisting of self-regulation of attention and orientation to experience. Self-regulation of attention requires an ability to maintain a state of awareness over a prolonged period of time (sustained attention), a flexibility in switching focus from one object to another (attention switching), and the direct experience of objects in awareness without processing or relating it to its origins, causes, or other associations (inhibition of elaborative processing). An orientation to experience refers to an attitude of curiosity, experiential openness and acceptance which allows one to experience the subjective and transient nature of the mind. Bishop and colleagues view mindfulness as a metacognitive

skill. Brown, Ryan, and Creswell (2007) revealed six features of mindfulness after examining the core concepts appearing in the literature of several Buddhist traditions that were comprehensively described, and parsed them according to their utility to the empirical study of mindfulness. They are: 1) clarity of awareness, 2) non-conceptual, non-discriminatory awareness, 3) flexibility of attention and awareness, 4) empirical stance towards reality, 5) present-oriented consciousness, and 6) stability and continuity of attention and awareness.

### *Cognitive Mindfulness*

Ellen Langer's (1989a) theory of mindfulness has its origins in her investigation of mindlessness. She defined mindlessness as passive information-processing in which the individual rather automatically relies on distinctions previously drawn instead of engaging in active categorizing and new distinction making. Mindlessness happens when we are entrapped by categorization of our world, behave in automatic ways due to repetitive engagement or premature commitment, or act from a single perspective. As a matter of fact, every act first mindfully committed can be subsequently performed mindlessly. As Langer and Piper (1987) illustrate, "the first establishment of the category pen as distinguished from pencil, for example, is mindful. Subsequently relying on this object as a pen in the same old way without drawing any new distinctions is mindless" (p.280). Mindlessness exacts its costs when we overlook important self-serving information due to over-reliance on previously drawn distinctions. Freud (1937) reinforces this point that by the very mental operations we simplify the world phenomena without considerations to contexts and changes, we cannot avoid falsifying it in doing so.

It is important to understand the independent relationship between mindlessness and automaticity (Langer, 1992). One can be engaged in an automatic behavior and yet be mindful,



and the converse is true; an intentional act can be mindless. Automatic behaviors are often implicated in the mastery of a skill, for example when one learns how to play baseball. It is almost impossible to be simultaneously aware of how one holds the bat, hits the ball, and why he or she is playing the game at once. Automatic behaviors consume minimal processing so that the player can engage attention resources strategically. Focusing only on where the ball is hit while leaving body posture automatic is not mindless; instead it is a mindful state of being. Mindfulness, in this global sense, commits to a "mindful environmental interaction in specific channels as the situation demands" (Langer, 1989b, p.280). On the other hand, deliberately applying the same braking strategy (depressing the brake fully) on a slippery instead of usual coarse road can lead to negative consequences of skidding. Such an act, though intentional, is mindless.

Certainly then, cognitive mindfulness is a global state of alertness and lively awareness, expressed in active information processing and characterized by cognitive differentiations (Langer, 1989b). The essence of which is drawing novel distinctions, allowing one to perceive greater sensitivity in one's environment, be more open to new information, create new categories for structuring perception, and enhance awareness of multiple perspectives for problem solving (Langer & Moldoveanu, 2000). The metaphor that Langer (1989a) provides illustrates cognitive mindfulness elegantly - living in a mindful state may be likened to living in a transparent house. All objects would be available in our sight. While it is true that we cannot think of everything at once, we are aware of their existence and know where to retrieve it.

### ***Differentiating Meditative and Cognitive Mindfulness***

Not surprisingly, since these two forms of mindfulness have different origins, they bear divergence on two dimensions: *capacities of consciousness* and *nature of conscious content*.

First, cognitive mindfulness highlights engagement of the self in elaborative cognitive processing instead of a non-elaborative bare attention described by meditative mindfulness. Second, cognitive mindfulness operates on perceptual inputs from the external environment as opposed to that of internal perceptual stimuli focused upon by meditative mindfulness. An analysis of Paul's responses in the school vignette can highlight disparities between the two mindfulness forms.

*Connections of Vignette to Capacities of Consciousness.* Since mindfulness is a quality of the consciousness (Brown, Ryan, & Creswell, 2007), it is useful for us to understand how Paul's thoughts, emotions and actions correspond to different capacities of consciousness. Consciousness is thought to serve at least two independent basic capacities - *monitoring* and *control* (e.g. Cramer, 2000; Westen, 1999). Monitoring is akin to playing an 'observer' function, while control is related to a goal-directed agentic process. Monitoring involves passive tracking to assess the bare reality of awareness, and is therefore *non-elaborative* in that it precludes active associations or judgments. In contrast, the capacity of control is *elaborative*, one involving cognitive processing, evaluation, inference, and various other generative thinking.

The control capacity can involve elaborative cognition that is self-focused, for instance introspection (James, 1890) and rumination (Treynor, Gonzalez, & Nolen-Hoeksema, 2003). In the vignette, Paul's downward spiral witnessed outside 2A2 classroom is a form of rumination. Such an elaborative consciousness is tied to a concern for the self, where the self determines what stimuli to monitor or attend to based upon self-interests and goals (Rosch, 1997). It is termed *reflexive* (Baumeister, 1999). On the other hand, Paul's thought processing at resolving the limited activity time is elaborative but directed at the problem (not self-focused).

The monitoring capacity involves self-observatory operations that preclude any cognitive processing. It allows us to see objects of awareness as they are without imposing any ideas (e.g. judgments, categorizations, implications) about them. In this sense it is non-discriminatory and non-conceptual. Such bare attention also likens what Kabat-Zinn (1990) describes as the beginner's mind, of seeing things for the first time. An example of monitoring processes is decentering (Safran & Segal, 1990). Decentering is the "ability to step outside of one's immediate experience" (Safran & Segal, 1990, p.117), which as if a mental gap or space between conscious attention and its mental contents has been introduced. Paul's internal observations of his anger and physiological arousal in the classroom is an example of decentering, where non-elaborative bare attention allows him to view them from a distance, thereby facilitating a re-perception of the nature of these sensations as witnessed in his shift of behavior from a reactive default (an outburst) to a calm one.

*Connection of Vignette to Nature of Conscious Content.* Conscious content can arise within our internal or external environment. Paul's internal environment is responsible for both his rumination during the downward spiral, and also his self-observation of arousal in the classroom. Conscious content from the external environment is involved during his active problem-solving of limited activity time. In addition, conscious content can also differ in whether it is an automatic (habitual) or controlled (deliberate) response. Paul's internal rumination is an example of automatic negative thought processes constituting his downward spiral, while his active problem-solving is a controlled process as it is intentional. Lastly, his internal physiological observation can be either an automatic or controlled process depending on how it arose.

To summarize the attributes of three different responses of Paul, we have:

1. Paul's downward spiral outside Mr. Tan's class as an automatic, elaborative processing of an internal stimuli – rumination about the delay
2. Paul's problem-solving of the limited activity time as a deliberate, elaborative processing of an external stimuli – fitting in the extensive curricula with the activity
3. Paul's bodily and emotional awareness in class as automatic or controlled, non-elaborative processing of an internal stimuli – faster heart rate, higher body temperature, anger, and anticipated outburst.

What do these various responses, each bearing varying consciousness properties, have to do with mindfulness? I will illustrate this using a classification. In Table 1 and Table 2, I tabulate different responses to internal or external stimuli respectively, along a two-dimension matrix: capacity of consciousness (elaborative/non-elaborative) and nature of conscious content (automatic/controlled). In Table 1 (internal stimuli), automatic elaborative processes correspond to the reflexive consciousness (Baumrind, 1999) described earlier. Deliberate response describes intentional and active processing, involving executing functions such as planning, evaluating, and comparing. Meditative mindfulness spans both automatic and controlled nature. It is differentiated by the more temporal form (state), or the more enduring trait. In Table 2 (external stimuli), cognitive mindfulness spans elaborative capacities of consciousness, independent of automaticity nature of conscious content. Mindlessness assumes an automatic, non-elaborative response, coherent with Langer's (1989b) supposition that the inflexibility conferred by mindlessness is "by default rather than by design" (p.139).

Table 1

***Processing/Response to Internal Stimuli***

	<u>Elaborative</u>	<u>Non-Elaborative</u>
<u>Automatic</u>	Reflexive	Meditative Mindfulness Trait
<u>Controlled</u>	Deliberate	Meditative Mindfulness State

Table 2

***Processing/Response to External Stimuli***

	<u>Elaborative</u>	<u>Non-Elaborative</u>
<u>Automatic</u>	Cognitive	Mindlessness
<u>Controlled</u>	Mindfulness	-

**2.3 Integrating Mindfulness: Harmony of Two Melodies**

Operationalizing mindfulness can be challenging due to its definitional ambiguity. There are different conceptualizations within meditative mindfulness itself. Further, as shown above, some features of both mindfulness are diametrically opposed to each other. Integration allows a view of how both forms of mindfulness can reinforce and complement each other. To find common ground within various conceptions of meditative mindfulness, a list of conceptions by various authors is first generated in Table A1, followed by a frequency tabulation and parsimonious reduction of factors and features listed in these various conceptions in Table A2. Both can be found in the Appendix. Through this process, I have identified five frequently cited features of meditative mindfulness as: 1) Non-elaborative/non-conceptual awareness, 2) Bare attention/clarity of attention, 3) Present orientation, 4) Non-judgment, and 5) Acceptance.

Next, to integrate both types of mindfulness, an examination of connections among features across both mindfulness forms will be useful. Cognitive mindfulness bear the follow features: 1) openness to novelty, 2) alertness to distinction, 3) sensitivity to context, 4)

awareness of multiple perspectives, and 5) present-orientation (Langer, 1989a). We can see how these features serve meditative mindfulness well. Openness to novelty furnishes an attitude that can be a precursor for facilitating non-judgment and acceptance. An alertness to distinction can promote bare attention by detecting internal stimuli as they come by and letting them go, therefore enabling the creation of a mental gap between stimuli and response. Sensitivity to context enables one to see the interdependent nature of reality (Siegel, 2007), how emotions and thoughts are intimately intertwined in judgments, and facilitate an observatory stance instead of a reactive one. An awareness of multiple perspectives correlates directly with the metacognitive perspective of meditative mindfulness in that instead of experiencing internal stimuli as a participant, one's role is shifted to a participant-observer.

Features of meditative mindfulness also promote cognitive mindfulness. Non-elaborative, non-conceptual, as well as non-judgment share a common property of nonattachment, and in the language of cognitive mindfulness, prevent us from falling into our automatic, mindless processing. Promoting a state of nonattachment eradicates top-down processing of the mind (Siegel, 2007), therefore freeing up our limited attention to focus on the current experience, increasing access to information which might otherwise remain outside our awareness (Bishop et al., 2004) and allowing us to see things as they are (Gunaratana, 2002). Such increased alertness and bare attention facilitates looking at objects in a fresh way, picking up distinctions and context-sensitive information, and re-structuring our perception to accommodate multiple perspectives and novel information.

Both types of mindfulness share similarities too. The most evident one is the present-moment orientation. Second, both recognize the dynamic and uncertain nature of reality. In meditative mindfulness the mind becomes a guest house in which all thoughts are welcomed,

with the guest list being uncertain. In cognitive mindfulness, it is uncertainty which necessitates and enables active cognitive processing that would otherwise be redundant in a certain and predictable environment. Both forms of mindfulness thrive in such uncertain environments by empowering its bearers with an intention to agency, which is their third similarity. It is crucial to note that their shared agency is an intention, not an actual control over reality; the fact that uncertainty is acknowledged precludes any attempt to claim governance. This sense of autonomy is what empowers both forms of mindfulness. In meditative mindfulness it is not the ability to control what comes to mind, but the ability to see things in their true nature which allows us to make congruent and informed choices. In cognitive mindfulness, an understanding of the nature of reality as conditional and not absolute liberates us to make meaning of our choices through 'panoramic attention', a wide focus of evenly invested attention (Speeth, 1982). In it is a sense of "impartiality, of spaciousness, of breadth of vision" (Speeth, 1982, p.151). Autonomy resides in the power to imbue meaning in our experiences and create more options for ourselves. In this sense, there is no one objective best choice but a subjective best of a choice one makes out of many others.

One of the two differences between both forms is that meditative mindfulness adopts a non-elaborative processing mode as compared to an elaborative one in cognitive mindfulness. However, both are united in their common goal of eliminating automatic directive processes and affording greater autonomy to the individual. Differences in processing modes can be seen as idiosyncratic mechanisms that align with their respective nature of mindfulness. Attitudes and outcomes of meditative mindfulness often entail acceptance, non-striving and letting go, and therefore exploration of internal stimuli is counter-productive (Bishop et al., 2004; Kabat-Zinn, 1990). On the other hand, active distinction making is a core process for meaning-making

and in preventing mindless responses, hence requiring effortful cognitive participation in the form of elaborative processing.

The second difference mentioned allows both forms of mindfulness to play complementary roles to each other. Our experience is inevitably composed of internal or external stimuli. Some external stimuli may quickly elicit internal stimuli. For example, the sight of someone taking our possessions without asking permission instantly provokes anger. Dealing with this incident effectively could mean actively interpreting this illegitimate act from another perspective (cognitive mindfulness), and also maintain bare, non-discriminatory awareness to the rising internal anger (meditative mindfulness), therefore reducing its intensity and allowing us to approach and engage the other person in a rational, clear-headed enquiry.

Both types of mindfulness can work synergistically towards desirable outcomes. From another perspective, meditative and cognitive mindfulness can be seen as affective and cognitive engines respectively whose functions are inter-dependent, similar to the right-left brain integration proposed by Siegel (2007).

Despite their inherent differences, I have articulated how both forms of mindfulness bear several similarities, and in fact each form of mindfulness can reinforce and complement the other. Most importantly, they often work together synergistically to attain desired outcomes. Siegel (2007) summarizes it clearly: "the differing dimensions of each of these forms of mindfulness may be seen as complementary, so that combining efforts into a broad understanding of 'mindfulness' may help us have a deeper insight into our lives than the sum of the parts" (p.236).



#### **2.4 Defining Mindfulness: A Mindful Re-Emergence**

The motivation for synthesizing an operational definition is two-fold: first to integrate both forms of mindfulness together and second to capture the practicality and precision of mindfulness with a view towards application. The backbone for this definition relies on Shapiro, Carlson, Astin and Freedman's (2006) three axioms of mindfulness - intention, attention, and attitude. They suggest these are the "fundamental building blocks" (Carlson, Astin, & Freedman, 2006, p.375) of a mindfulness practice, and are interwoven aspects of a single cyclic process that occur simultaneously during mindfulness. Also, consulting mindfulness descriptions from both types (Bishop et al., 2004; Brown, Ryan & Creswell, 2007; Gunaratana, 2002; Kabat-Zinn, 2003; Langer, 1989a, 1989b), an appropriate definition is offered as follows:

*Mindfulness is an intentional participation in the present moment of life, characterized by 1) active alertness, 2) vivid awareness, 3) panoramic attention and 4) an attitude of curiosity, openness and acceptance.*

In this definition, all of the most common features of meditative and cognitive mindfulness are incorporated. Active alertness includes alertness to distinction, sensitivity to context, and awareness of multiple perspectives. Vivid awareness incorporates bare attention. Panoramic attention encompasses non-elaboration and non-judgment. Openness to novelty, acceptance and present orientation are self-evident in the definition. From a practical and precise point of view, cultivating mindfulness means building up the four characteristics mentioned.

This emergent definition of mindfulness enables the sort of qualitative transformation required of the Singapore education system in the 21st century. Active alertness cultivates the capacity to pre-empt, tackle, and anticipate challenges. Vivid awareness confers clarity and

autonomy in mobilizing whole-child, whole-school engagement. Traits like curiosity, openness and acceptance empower students and educators by imbuing them a sense of agency to navigate the future co-constructively.

### **2.5 Benefits of Mindfulness**

Mindfulness is no longer a nascent field in applied psychology; it has a strong evidence base in limited areas and a developing evidence base in a broader range of applications (Christopher & Maris, 2010; Grossman, Niemann, Schmidt, & Walach, 2004). Despite its diverse traditions of origin, research suggests that mindfulness can be applied to both clinical and non-clinical populations, and be used to reduce psychological deficits as well as enhancing a broad range of strengths (Davis, 2012; Shapiro & Carlson, 2009).

Broadly speaking, both state and trait mindfulness as measured by the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) have been correlated with higher well-being (Brown & Ryan, 2003). Among 74 adults who were experientially sampled for 21 days, three times a day, trait mindfulness was associated with more self-reported autonomy, and lower frequency and intensity of unpleasant affect. In another study from the same research group, 92 university students who were experientially sampled for 14 days, state mindfulness was associated with perceptions of greater autonomy in day-to-day life, higher positive affect and lower negative affect. More daily autonomy is closely related to optimal human functioning (e.g. Deci & Ryan, 2000).

Neurological evidence in the cortical and limbic areas has shown that mindfulness can be associated with reduced emotional reactivity at rest and during emotional threat. For example, in a study by Cresway, Way, Eisenberger, and Lieberman (2007), subjects had their MAAS-trait mindfulness assessed before working on an affect labeling task. Functional magnetic

resonance imaging results revealed that greater trait mindfulness was associated with greater widespread prefrontal cortical activation, and reduced bilateral amygdala activity during affect labeling. This strong inverse relationship of both areas may be a representation of stronger affect regulatory tendencies in more mindful individuals. In laboratory-induced experimental paradigms, induced mindfulness states have also been associated with less negative affective reactivity and emotional volatility, and with facilitating emotional recovery after provocative events (Arch & Craske, 2006). This suggests that mindfulness can be used as a means to mitigate difficult emotions as they arise (Broderick, 2005).

Mindfulness also plays a part in enhancing self-regulation in two ways: increasing self-control, and fostering of more autonomic self-regulation (Brown, Ryan, & Creswell, 2007). Relating to the former, Barnes, Brown, Krusemark, Campbell, and Rogge (2007) found that trait MAAS-assessed mindfulness was correlated with and predicted subsequent self-control among college students. In their correlational research done with dating college students, they employ a short-term longitudinal design with concurrent and prospective measurements ten weeks apart. Self-reported trait mindfulness measured on first time period predicted self-reported trait self-control on both time periods. Leary and Tate (2007) argue that mindfulness as a present-focused awareness helps us disengage thoughts from other tasks or distractions, lower or eliminate anxiety and other emotions that can disrupt performance, thereby preventing the depletion of our self-regulatory energy resources. With regards to autonomic self-regulation, a clarity of attention to internal and external stimuli as well as a non-judgmental stance gives us choices to select actions that are informed by abiding needs, values and feelings, and fit with our situational options and demands. Furthermore, Brown and Vansteenkiste (2006) described how mindfulness can support effective goal attainment after controlling for self-regulation. In

their study, higher levels of mindfulness in college students were prospectively related to better academic and personal goal outcomes.

Last but not least, mindfulness has been associated with better relational outcomes. Kabat-Zinn (1993) and Welwood (1996) argued that mindfulness promotes attunement, connection and closeness. In theory, being more attentive and receptive promotes the ability or willingness to take interest in others' thoughts, emotions and concerns. It also furnishes one the enhanced ability to attend to both the content of the communication as well as the subtle non-verbal body language (Goleman, 2006). In terms of relational interaction, higher MAAS-measured trait mindfulness prospectively predicted greater capacities to respond constructively and higher relationship satisfaction among couples during times of relational stress (Barnes et al., 2007). State-mindfulness was also related to better communication quality, supporting the need to bring mindful states into challenging exchanges. In addition, mindfulness is correlated with components of social intelligence, which in turn are associated with better social skills, perspective taking, and cooperative response patterns (Schutte, Malouff, & Bobik, 2001).

Certainly, since a major use of mindfulness has been in clinical settings (e.g. MBSR, Mindfulness-Based Cognitive Therapy (MBCT), Dialectical Behavioral Therapy, Acceptance and Commitment Therapy), there has been a long list of clinical benefits to these recipients as shown in many meta-analyses (e.g. Grossman, Niemann, Schmidt, & Walach, 2004). For example, in a study that combined self-report measures of depression, anxiety, and psychopathology, participants were randomly assigned to an 8-week mindfulness-based stress reduction training group or placed in a waitlist control group and were exposed to sad films (Farb et al., 2010). When compared to the control group, participants in the mindfulness-based stress reduction training group showed significantly less anxiety, depression, and somatic

distress (Farb et al., 2010). A recent meta-analysis of 39 studies supports the efficacy of mindfulness-based therapy for reducing anxiety and depression symptoms (Hoffman, Sawyer, Witt, & Oh, 2010). MBSR and MBCT represented most of the mindfulness-based therapy modalities used in these 39 studies.

## **2.6 Mindfulness in Education**

With raising academic competitiveness and standards in a global economy, education has placed an overwhelming and imbalanced focus favoring academic outcomes above many else (Ministry of Education, 2013). This primary outcome-focused approach has led many educators and students to be 'exam-smart', with students 'studying to the test' and teachers 'teaching to the test', rather than stimulating curiosity and a love of learning. Both students and teachers employ efficient albeit narrow approaches to teaching and learning, e.g. rote memorizing, didactic teaching etc (e.g. in Singapore, Hogan, 2009). Education for well-being has to move away from such myopic approaches. Many of these are low-expense, automatic acts, which can be rather mindless. John Dewey (1933) criticized "schools where the chief aim is to establish mechanical habit and instill uniformity of conduct, [and] the conditions that stimulate wonder and keep it energetic and vital are necessary ruled out" (p.53). An education that promotes mindlessness produces at best stunted growth in individuals, and could result in single-minded attitudes, narrow self-images, diminished choice and a reduced sense of control (Langer, 1989a). To the contrary, promoting mindfulness in education can nurture flourishing students by reducing risk factors (e.g. stress, depression, anxiety), and cultivating protective ones (e.g. socio-emotional competencies, attention regulation, self-control) through the training of executive functions.

### ***Reducing Risk Factors***

Elevating levels of stress is a risk factor for both teachers and students, arising from not only the school environment, but also from peers, families, and communities. K-12 teachers report experiencing a moderate to high level of stress, with ample evidence showing the causes and consequences of stress in teaching (Montgomery & Rupp, 2005). Students are also immensely stressed by a single-minded focus on examinations. The Singapore Ministry of Education (2013) reports:

Some mothers take leave for an entire year or more to help their children prepare. Many see entry into top schools as critical to their children's future, and prepare their children very early - some as early as kindergartens, and even sending them to two kindergartens. Many compete to get a place in popular primary schools, or spend significantly on tuition. (para. 86)

Excessive stress can negatively impact child development. It damages the architecture of the developing brain leading to vulnerability to lifelong problems in learning, behavior, and overall health (National Scientific Council on the Developing Child, 2007). Neurological studies have found that stress reduces students' thinking and brain functioning, particularly the prefrontal cortex (Diamond, 2010). Teachers' stress not only affects their own productivity and well-being, but also affects the classroom climate, their own role modeling, and ultimately the well-being of students (McCallum & Price, 2010).

Mindfulness can play a significant role towards mitigating stress levels. Practices based upon meditative mindfulness in school contexts have been beneficial in reducing stress and promoting mental well-being in both children and adults (e.g. Baer, 2003; Greeson, 2009). For example, in a randomized controlled trial using MBCT-Child with 25 children 9 to 12 years of

age, Semple, Lee, Rosa, and Miller (2009) found that compared to the wait-list control group, participants who reported clinically elevated baseline anxiety had significant reductions in anxiety levels after the mindfulness treatment. Many other mindfulness studies reported reduction in anxiety among students (e.g. Lee, Semple, Rosa, & Miller, 2008; Napoli, Krech, & Holley, 2005; Wall, 2005). Through a variety of mindful awareness practices, including short regular formal mindfulness training exercises, students' innate awareness to internal and external experiences are strengthened in ways that are present-oriented, objective, and responsive rather than reactive (Meiklejohn et al., 2012).

### ***Building Protective Factors - Executive Functions***

Education for the 21st century aims for whole-child engagement. This means cultivating socio-emotional skills alongside cognitive skills, which are both necessary in academic outcomes and school success (Diamond, 2010). Developing the whole child can be achieved through strengthening of the executive functions.

Executive functions (EF) are "a set of cognitive functions involved in the top-down control of behavior in the service of a goal" (Diamond, 2010, p.782). They are situated in the prefrontal cortex and have a multi-stage developmental lifespan beginning in the first year of life, and continue through early childhood, not fully maturing until early twenties (Diamond, 2002). It is generally agreed that there are three cores of EFs: 1) working memory, 2) inhibition control, and 3) cognitive flexibility (Diamond, 2013). Together, they are responsible for higher level functions such as planning, problem-solving, processing, attention regulation, and cognitive flexibility.

Studies have shown that EF is more important than IQ for school readiness (Blair & Razza, 2007), school success (Gathercole, Pickering, Knight, & Stegmann, 2004), and job

success (Bailey, 2007). In the light of such importance, several research studies have shown how mindful practices can improve EF (Diamond & Lee, 2011).

Mindful attention in the form of meditative tradition can be trained and can serve to enhance EFs (e.g. Heeren, Van Broeck, & Philippot, 2009; Moore & Malinowski, 2009). Most research studies are conducted with adult and clinical samples. While the research on adolescence is nascent, promising results illustrating the potential positive benefits of such mindful attention on EF skills have been gathered. For example, Oberle, Schonert-Reichl, Lawlor, and Thomson (2011) found that self-reported mindfulness among fourth- and fifth-graders was significantly and positively associated with inhibitory control after controlling for age, gender and cortisol levels. Further, in a randomized controlled trial, Flook et al. (2010) reported that 64 second- and third- grade children with poor EF showed gains in behavioral regulation, metacognition, and global executive control as assessed by teacher and parent assessment after undergoing mindful awareness practices over a eight-week period. EF skills that were significantly improved compared to control include attention shifting, monitoring, and initiating.

Napoli et al. (2005) conducted a randomized controlled trial with 194 first- to third-grade students using the attention academy program . The program's mission is to raise the students' quality of life through practicing meditative mindfulness, helping them to 1) increase attention to their present experience, 2) approach each situation without judgment, and 3) view each experience as new and novel. The program lasted for 12 sessions over 24 weeks for 45 minutes per session. Compared with control, the attention academy program participants had shown increased selective attention on a computer task, increased attention and social skills as reported by teachers, and self-reported decreases in anxiety.



Cognitive mindfulness also offers important implications for building up executive functions. To eradicate oneself from the mindless routine, Langer (1989a) emphasized the drawing of novel distinctions. Such mindfulness can also be more closely understood as a cognitive style than either cognitive abilities or personality traits (Sternberg, 2000). Styles are habitual ways of viewing the world. This is reflected in Langer's (1993) description of an "open, creative, probabilistic state of mind in which the individual might be led to finding differences among things thought similar and similarities among things thought different" (p.44). Research on cognitive mindfulness in schools has shown that mindful engagements pave the way for creativity and problem solving (Grant, Langer, Falk, & Capodilupo, 2004; Langer, Hatem, Joss, & Howell, 1989), as well as cognitive flexibility and the reduction of prejudice (Langer, Bashner, & Chanowitz, 1985). Furthermore, viewing external stimuli from multiple perspectives instead of holding it constant was shown to increase concentration (Carson, Shih, & Langer, 2001). These implications are critical for teaching and learning, and are elaborated upon in the next section.

There are other mindfulness programs involving adolescents across different ages from elementary to high schools. A review of these programs can be found in Meiklejohn et al. (2012). The authors summarize a host of benefits of mindfulness in education include reducing stress, anxiety, aggression and ADHD behavior, while increasing focused attention, emotional regulation, self-regulation, and overall students' well-being. Mindfulness has yet to make significant inroads into educational research and practice. Yet with a reasonable base of support for its feasibility and acceptability with children and adolescents (Burke, 2010), and its purported benefits to child holistic development, the time can never be better for us to adopt mindful-based practices in schools.

### **3. Mindful Schools**

This segment will present an integration of mindfulness into schools, delineating its infusion into various aspects of the school ecosystem, including teaching, learning, structure, and relationships. Recommendations and potential applications are suggested.

#### **3.1 Illuminating Mindful Schools**

##### ***Dispositional Mindfulness as the Goal.***

With a host of benefits that mindfulness can provide, it is important that schools are able to cultivate it in students. However, before an effective discussion of how mindfulness can be integrated into the school settings, a question needs to be asked: what kind of mindfulness should be cultivated – state or trait (dispositional)? Many randomized controlled trials (e.g. Semple et al., 2009) have shown that it is possible to induce temporary mindfulness states. However, for mindfulness to be embedded into the school culture and ecosystem, it has to be "more than a set of instructional techniques" (Ritchhart & Perkins, 2000, p.29). It has to move beyond state to a disposition that permeates the lives of educators and students, as well as being embedded in the school structure. Mindfulness has to be pro-actively present instead of having reactively invoked. As Dewey (1933) aptly puts, "knowledge of methods alone will not suffice: there must be the desire, the will, to employ them".

A broader conception of disposition will be adopted here, following the theory of dispositions outlined by Perkins, Jay and Tishman (1993) which has three components - sensitivity, inclination, and ability. Sensitivity consists of the awareness and alertness to occasions for engaging in certain behaviors. Inclination refers to the motivation or habit of carrying out a particular behavior. Ability is the capacity of executing the behavior. Dispositional mindfulness thus entails all three components, and cultivating it means paying

attention to its context (sensitivity), engaging the will (inclination), and developing the skills required (ability). What types of sensitivity, inclination and abilities are required for mindfulness?

***Three Components of the Features in Dispositional Mindfulness***

In an aim to breakdown the cultivation of mindfulness into more specific learning objectives and concrete understandings, I tabulated in Table 3 the sensitivities, inclinations, and abilities for each of the mindfulness features encapsulated in my definition. Note that this is not an exhaustive list; its intent is to provide a scaffold for teaching mindfulness through its individual features.

Table 3

*Three Components of Features in Dispositional Mindfulness*

Mindfulness Features	Dispositional Mindfulness		
	Sensitivity to	Inclination towards	Ability in
Non-Judgment	Understanding impact of stereotypes, labels, categorizations of people, objects and events around us	Recognizing individual vulnerability, fallibility and imperfection	Self-awareness, self-monitoring, self-regulation of attention
	Understanding the different preferences, interests and values of people	Recognizing individual uniqueness	
		Being fair to self and others by giving the benefit of doubt for the imperfect knowledge we have of nature and things.	
Bare Attention	Understanding self-talk, cognitive beliefs, emotions, sensations, movements and behaviours.	Seeing the value of things as they originally are	Self-awareness, self-monitoring, self-regulation of attention
	Understanding that things, objects, people and other entities have underlying meaning, nuances, motives, purposes, origins, and messages	Appreciating the fundamental nature, beauty, and properties of entities.	
		Understanding the fundamental motivation of ourselves and others	

Table 3

*Three Components of Features in Dispositional Mindfulness*

Mindfulness Features	Dispositional Mindfulness		
	Sensitivity to	Inclination towards	Ability in
Present-Orientation	<p>Understanding how the past affects what is currently happening, and how the future will be dependent on what is unfolding now</p> <p>Understanding the instantaneous cause and effect of things and events around us e.g. what we said a while ago and what we felt now</p>	<p>Understanding that the present-moment is passing by every instant, and we are uniquely endowed and positioned with different awareness and resources to handle encounters with things and people around us. Every moment is different and irreversible.</p>	<p>Self-awareness, present-focus, self-regulation of attention</p>
Non-Elaboration	<p>Exploring the process of why we think, feel and behave the way we are, understanding why things and people behave the way they did.</p> <p>Explore how and why these processes differ from an object or individual to another.</p>	<p>Realize that we construct our understanding of things by layering conceptual filters and enact cognitive processes. To understand and to accurately and objectively assess the true nature of objects, individuals and phenomena, we need to resist this elaborative outgrowth.</p>	<p>Self-awareness, self-monitoring, self-regulation of attention</p>

Table 3

*Three Components of Features in Dispositional Mindfulness*

Mindfulness Features	Dispositional Mindfulness		
	Sensitivity to	Inclination towards	Ability in
Acceptance	Understanding that things happen for a reason, and there is a cause for everything, even if it is unknown to us presently.	Understand that improvement and self-growth is possible when we acknowledge the objective reality of who we are and our circumstance.	Self-awareness, self-compassion, compassion towards others
	Look around others to recognize the different attitudes people have towards their situations and towards others	Knowing that every individual faces unique challenges, and that we share a common humanity.	

Table 3

*Three Components of Features in Dispositional Mindfulness*

Mindfulness Features	Dispositional Mindfulness		
	Sensitivity to	Inclination towards	Ability in
Openness to Novelty	Understand that doing things the same way would lead us to the same outcome.	Novel information allows us to revise our current position and consider possibilities.	An attitude of curiosity and receptivity towards the external world.
	Understand that all situations start off as novel, and novelty is the impetus for change.	Novelty enhances our awareness and broadens our perspective on issues.	Seize opportunities to explore new areas, and get out of one's comfort zone to embrace challenges.
		The brain naturally seeks novelty, and this helps in better concentration, memory and learning outcomes	Asking what could be different from the current state, challenging the status quo
Alertness to Distinction	Looking closely into the details to understand no two things are identical.	Making distinctions allows us to better organize information to suit our learning and memory. It helps us make more informed decisions by identifying suitable means of comparison.	An attitude of curiosity and receptivity towards the external world
	Looking critically at structure, roles and function of objects and people		Critical thinking, comparing and contrasting, analyzing, evaluating

Table 3

*Three Components of Features in Dispositional Mindfulness*

Mindfulness Features	Dispositional Mindfulness		
	Sensitivity to	Inclination towards	Ability in
Sensitivity to Context	Understanding the importance of situational and systems influence in the existence of any phenomena, and that things rarely occur in isolation	Contextual sensitivity enables us to accurately assess the factors that support the existing phenomena, and get to a fluid understanding of how things can change when environments change. It allows us to deconstruct what seems absolute to a conditional existence.	Critical thinking, comparing and contrasting, analyzing, evaluating, causal reasoning, inference, deduction
Awareness of Multiple Perspective	Understanding that our perceptions are often locked into one way of looking at things, and that there exist many possible precepts of a static representation. Our perceptions are activated by cues/triggers that allow us to construe the phenomena in a specific way.  Understand the role of interpretation and meaning making of daily phenomena	Bearing multiple perspectives allows us to understand the unique behaviours of others towards the same phenomena and builds a broader frame of mind towards humanity. It helps us be empathetic of others, compassionate to ourselves, be tolerant of diversity, and make holistic decisions.	Critical thinking, creative thinking, empathy, inference, deduction, comparing and contrasting



### ***State Mindfulness***

While dispositional mindfulness is the goal, state mindfulness is not deemed irrelevant. Individuals with greater mindful dispositions report having more mindful states (Brown & Ryan, 2003), and it is potentially possible that cultivating mindful states in systems or people over the long-run would render the development of mindful traits eventually. Cultivation of mindfulness in school may begin by building micro-moments of state mindfulness through various ways and sustaining these habits over time. Also, by adopting a growth mindset for mindfulness, mindfulness can be learned no matter how mindful one is.

### ***Whole-School Approach.***

To imbue mindful dispositions into teachers and students, the entire school ecosystem has to play a part. Whole-school approaches facilitate the effectiveness of instituting desired changes to its members in a sustained manner. School operations are multi-faceted and inter-dependent. In order to conceptualize a whole-school model, I adopted the three aspects derived from the positive education implementation in Geelong Grammar School, which is: teaching, embedding, and living (Seligman et al., 2009). Together, these three aspects form the '*Living, Embedding, and Teaching (LET) Dispositional Mindfulness Model for Schools*'. Refer to Figure 1. TSR, SSR, and TTR refer to teacher-student relationship, student-student relationship, and teacher-teacher relationship respectively.

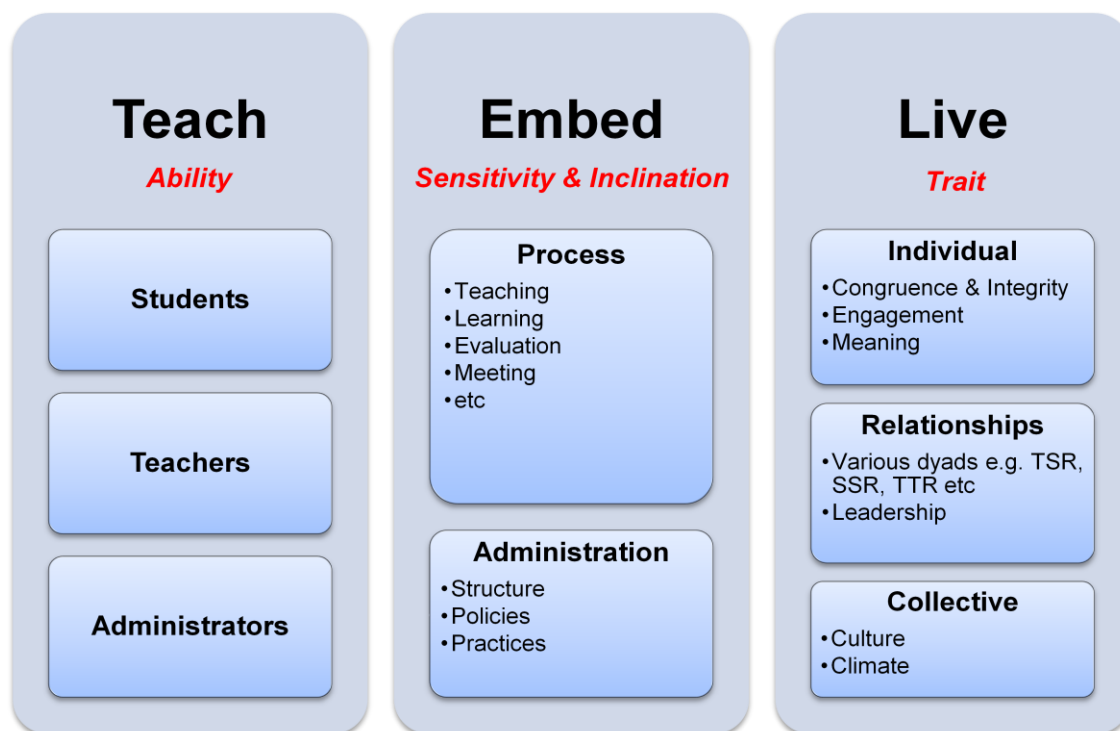


Figure 1. LET Dispositional Mindfulness Models for Schools.

The *'Teach'* aspect emphasizes explicit mindfulness training and practice for all school members - students, teachers, and administrators alike. While certainly considering developmental needs of the different age groups and the practical demands of school operations, it is important that there is scheduled time for the teaching and practice of mindfulness-based exercises. For example, there could be a school-wide mindfulness period where everyone in the school practices a mindful exercise together, or teachers could schedule at their discretion classroom time for these exercises.

The *'Embed'* aspect represents an implicit integration of mindfulness into daily operations. It is divided into two categories - processes and administration. Processes refer to formal school activities of teachers, students and administrators. These include teaching, learning, meeting, evaluation, lesson planning, project coordination etc. Administration refers to aspects of the school operational infrastructure, for example school structure, policies, and practices.

In the *'Live'* aspect, the emphasis is on the 'living out' or enacting of dispositional mindfulness in school. From a macro perspective, a mindful school is composed of mindful individuals connected by mindful relationships to culminate in its mindful collective whole. Such a unit-level analysis characterizes the three categories of *'Live'* aspect: individuals, relationships, and collective. On the individual level, dispositional mindfulness should relate to domains such as congruence and integrity, engagement, and meaning in school. This will be elaborated later on. Relationally, various types of dyadic interactions among students, teachers, and administrators should be mindful, e.g., teacher-student relationship (TSR). Collectively, a mindful school should evidently display in its domains of culture and climate hallmarks of dispositional mindfulness.

Furthermore, the LET model corresponds with the three components model of dispositions. The *'Teach'* aspect aims to cultivate the ability of dispositional mindfulness, the *'Embed'* aspect fulfils its role to imbue sensitivity and build inclination towards dispositional mindfulness, and finally the *'Live'* aspect is a manifestation of trait or dispositional mindfulness as a mode of being in school.

As described above, the LET model furnishes a backbone of three aspects and its respective categories in cultivating dispositional mindfulness in schools. Within each category, domains listed are non-exhaustive. In the remaining section, four domains will be elaborated, with a focus on what mindfulness in each of these domains entails. These four domains are: mindful teaching, mindful learning, mindful school structure, and mindful relationships.

### **3.2 Mindful Teaching**

#### ***Defining Mindful Teaching***

The term 'mindful teaching' has not been commonly defined, and usually derives its meaning through the way mindfulness is previously defined by various researchers. For

example, Langer's conception of mindful teaching would encompass teaching instruction that facilitates open-mindedness to novel information, sensitivity to context, creation of new categories for structuring perception, and increased awareness of multiple perspectives for problem-solving (Langer & Moldoveanu, 2000). The Meditative mindfulness perspective would illuminate mindful teaching as one that cultivates clarity and non-discriminatory awareness, attention flexibility, a non-judgmental stance towards reality, and a present-oriented consciousness. However, teaching as an endeavor is influenced by a myriad of factors, including the dynamic classroom environment, students' attitude, teaching resources, curriculum workload, and the educator's personality characteristics. Considering the job dimensions of an educator more holistically, I adopt aspects of mindful teaching that MacDonald and Shirley (2009) lay out - congruence, integrity, and efficacy. Weaving these aspects together with the essence of varying mindfulness traditions, a proposed definition is as follow:

***Mindful Teaching is an attention to and awareness of congruence, integrity and efficacy in the teaching practice so as to enable optimal action and reflection.***

### ***Benefits of Mindful Teaching***

***Mitigating Job Stress.*** The teaching job is plagued by various sources of stress such as student behavior, school structure, workload, relationships with colleagues and administrators, and these can lead to burnout. A meta-analytic review done by Montgomery and Rupp (2005) has shown that the degree to which teachers emotionally respond to stress, regardless of mediation by coping mechanisms, has a strong influence on the degree of burnout experienced. In this research, active coping, among other variables, has the highest correlation with burnout. This suggests the use of active coping strategies, e.g. meditative mindfulness. As discussed earlier, such mindfulness can reduce emotional reactivity,

strengthen emotional intelligence and regulation, and hence enhance the ability to cope with stress in a calm, responsible and flexible manner.

***Enhancing Job Congruence.*** Congruence entails an attunement of one's personal identity to the needs, aspirations, expectations, and demands of the teaching profession, as well as to the initiatives, systems, and processes of the teaching environment. Mindfulness contributes to greater job congruity by cultivating presence. With regards to teaching, *presence* is "the experience of bringing one's whole self to full attention so as to perceive what is happening in the moment" (Rodgers & Raider-Roth, 2006, p.267). Meditative mindfulness can help bring about such full attention. Earlier evidence of the benefits of such mindfulness attest to how such mindfulness can help deal with discrepancies in expectations and situational reality more accurately and reflectively instead of reactively and emotionally. In so doing, it can enable greater alignment between self and schooling interests.

***Raising Contextual Awareness of Job Process.*** Mindfulness can also help teachers to recognize the context of their work and to see their work as a process. This can be helpful in avoiding unhealthy social comparisons and self-evaluations that is detrimental to self-esteem and self-acceptance. Carson and Langer (2006) show that tying in self-worth to comparisons, no matter upwards or downwards, may lead people to be more susceptible to the effects of negative comparisons when they arise. Mindful comparisons are those that consider different perspectives and look for qualities or possessions of others that do not diminish individual self-worth. For instance, comparison with others on specific aspects of one's performance can be valuable instructional feedback. Yet another study shows that comparisons with accomplishments of others which are attainable may be inspirational (Lockwood & Kunda, 1997).

***Increased Flexibility in Decision Making.*** Teachers face a range of decision making issues, ranging from disciplining students, dealing with parents, to setting of examination

papers. While some have moral and legal implications, many are matters of personal discretion and preference. Often with such matters, teachers may follow routine school protocol blindly. Yet, existing practices may not serve the best interests of a dynamic context whose needs are evolving. Constant evaluation and new decisions need to be made, which is where *mindful decision making* is crucial. Langer (1994) posits that mindful decision making is an active one of creating or modifying options (beyond recognizing existing options) and selecting among those options. Studies have shown that active deciding allows more information gathering and choice consideration, and can result in less post-decision regret and more satisfaction (Langer & Williams, 1993). Such increased flexibility in decision making can be illustrated using an example - during assembly reading period aimed at improving language standard, teachers can either choose from prescribed options instructing students to read from a regularly subscribed school-wide magazine or bring in their own novel. They could also create options of student public speaking or a vocabulary competition serving similar aims.

***Broadened Appraisal Abilities.*** A mistake is often rigidly cast upon the perpetrator without considering potentially positive perspectives on it. Allowing students to use their mobile phones in class may be going against a school policy and be considered a teacher's "mistake", but may also be seen as an effective classroom contractual tool with students. From another perspective, allowing selective usage of mobile phones (e.g. senior class students) may serve as a teaching tool to help students understand the distracting effects of routine usage and thereby introduce ways of cultivating self-regulation. Even if the positive intent of using it as a teaching tool backfires, employing a mindful approach to mistakes is "to look at them from multiple perspectives and find the perspective that provides either new knowledge, motivation for change, and/or an opportunity to teach others a valuable lesson" (Carson & Langer, 2006, p.35). Mindfulness confers panoramic vision and allows

us to be more inclusive, appraising individuals and situations according to their unique worth.

***Enhancing Socio-Emotional Competencies of Teachers.*** A substantial amount of time in pre-service and in-teacher training has been catered towards developing professional competencies of teachers in terms of pedagogical knowledge, subject mastery, educational psychological theories, informational-technology skills and the like, but there has been little explicit focus on teachers' personal development such as socio-emotional competencies. Research has shown that teachers' socio-emotional competencies help shape positive social, emotional and academic outcomes for students as well as teachers' well-being. Teachers' competencies influence the quality of teacher-student relationship, shape effective classroom organization and management, and enable the teaching of these competencies to students through effective role modeling (Jennings & Greenberg, 2009). Mindfulness can aid the cultivation of socio-emotional competencies. Paying attention to the present moment with non-judgment frees up teachers' attention resources, therefore allowing greater attunement with the socio-emotional needs of students and enabling more sensitive interactions with them. Furthermore, as teachers often need to switch their attention between various macro and micro aspects in the classroom (e.g., attending to students needs, classroom climate, and curricula progress) and solve problems 'on the spot', attention-regulation and cognitive flexibility are two important competencies that mindfulness can help cultivate. Mindfulness can also help teachers to handle interpersonal interactions and conflicts within the classroom by helping the teacher to generate different perspectives of what is transpiring. An identical situation can be managed in diverse ways, e.g. an incident of bullying in class can be viewed in a punitive mode or as a teachable moment for empathy.

***Mindful Curricula Delivery Towards Mindful Learning.*** The fundamental premise of mindful curricula delivery is that the way educators present the material to students

affects the way information is learned and ultimately how, why, and when it is used (Langer, 1998). It is noted above that many educators have been teaching to the test due to high state standards, time constraints, disparity in student aptitudes and other reasons, and have essentially made teaching a mindless routine. In addition, mindless teaching can also happen when educators repeatedly engage in the same teaching agenda over time.

The thrust of mindful curricula delivery is to attend to students' diverse needs by cultivating the students' ability to draw novel distinctions from information taught, so that they would be able to make the material relevant to their idiosyncratic concerns (Langer & Moldoveanu, 2000), hence enacting mindful learning. Several ways of such delivery include the conditional teaching of information, raising awareness of context-dependence, highlighting contrast, and providing different perspectives to the concepts taught. Each of them is highlighted below.

*Conditional teaching* is an idea introduced by Langer and Piper (1987) which embodies the use of conditional as opposed to absolute instructions, e.g. "this could be" versus "this is a". Conditional teaching would be to say, "a substance with a high melting and boiling point could be a metal", instead of absolute categorizing such as "... is a metal". This is important because there are other substances (e.g. ionic salts) that have high melting and boiling point as well. Such open format of instructions demands more processing and sense-making instead of rote memorizing. As the learner explores the material, a series of connections and abstractions is made which promotes content assimilation and facilitates later transfer to new situations (Salomon & Perkins, 1989). Participants in conditional instruction studies demonstrated more flexible and creative ways of using information to problem-solve (Langer, Hatem, Joss, & Howell, 1989; Langer & Piper, 1987). Furthermore, since students adopt an active role, their autonomy as learners is strengthened (Ritchhart & Perkins, 2000). Also, teaching conditionally bears an important implication relating to the



uncertain and changing nature of the world. While teaching conditionally may be criticized as breeding insecurity, this may be a faulty argument (Langer, 1989a). Teaching conditionally in a world of stability where facts are absolute may not be beneficial, but in the world we live where facts are conditional, we would perhaps do better. Last but not least, teaching conditionally also allows students to explore different contexts and perspectives, and adjust it to their strengths and experiences instead of freezing their understanding of the material on first exposure.

Educators would help instil dispositional mindfulness in learners by imparting *sensitivity to context-dependence* of the concepts taught. For instance, during teaching, educators could encourage an exploration of origins, assumptions, limitations, exceptions, and conditions of the particular concept. Taking geometry as a case, it is a fact that the sum of all interior angles of a triangle equals to 180 degrees. Without understanding its underlying euclidean assumptions (i.e. study of flat surfaces instead of curved surfaces), a learner may not be able to appreciate how a triangle constructed from a spherical plane could exceed 180 degrees.

In addition, *establishing contrasts* can help in enhancing sensitivity and inclination towards mindful learning. Educators can seek to draw similarities and differences to previously learnt materials, other subjects, or the physical world. In an experiment, Langer and Brown (1992) asked subjects to engage in tasks which they professed their dislike, in this case women who disliked soccer were made to watch a soccer video. These women were randomized in one out of four conditions where they were asked to make increasingly subtle distinctions about each match. Results show that women who were required to make more distinctions liked the task more. This may be extrapolated to learning tasks. As aptly described by Langer and Pietrasz (1995) as a shift from reference to preference, drawing

distinctions facilitates mindful learning and can increase engagement and positive experiences.

*Providing different perspectives* of the material taught can bolster inclination for mindfulness. For instance, a historical event such as the Japanese occupation of Singapore during second world war can be asked understood from various groups of people living at the time, e.g. different ages and races, British soldiers, Japanese soldiers, war heroes, traders etc. Asking the question 'how might it look different if...?' helps elucidate varying standpoints. Having different perspectives helps learners better appreciate and enjoy the curricula by shaping or interpreting ideas in relation to their lives, interests, and curiosities of the world (Langer, 1998). Mindfulness acknowledges that our thoughts and ideas are social construction of realities (Bodner, 2000).

### **3.3 Mindful Learning**

#### ***Defining Mindful Learning***

Learning can be defined in multiple ways. Some are process-focused where active engagement in the world is emphasized, while others are outcome-focused portraying how human behavior changes (Hyland, 2011). To identify a suitable focus of learning in formulation of 'mindful learning', the definition of mindfulness can help. In *The Power of Mindful Learning*, Langer (1998) defined mindful learning as a process-focused approach where active engagement in drawing distinctions lead to better learning outcomes. Therefore, appropriate to the process-focused approach is Beard and Wilson's (2006) definition of learning as the "sense-making process of active engagement between the inner world of the person and the outer world of the environment" (p.2). Building on this process-focused foundation, I propose a definition as follow:

***Mindful Learning is being fully, actively, and meaningfully present and engaged in all aspects of the learning encounter, in or out of the classroom.***

### ***Making Learning Mindful***

In what is defined as the 'academic problem' by Witz (2000), a considerable number of students are unable to get "meaningfully connected to academic or subject-matter knowledge to the point where the latter begins to inspire the person and play a significant role in his or her world-view and life" (p.9). Two possible cases emerge here. On one hand, we have academically weak students who find a lack of meaning in these subjects, therefore disengage from learning and subsequently affecting the learning environment of others through behavioral distractions and/or attention-seeking in class. On the other hand, we have students albeit not able to derive significant meaning from the subject matter, are able to perform academically up to expectations. This group of students, though having graduated from school with knowledge proficiency, may tread on in life with a void in their life's purpose and directions. Both cases reflect mindless learning.

***Learners' Engagement.*** Mindful learning involves learners seeking to make the material personally meaningful, even if curricula delivery may not be initially appealing. In a study conducted by Lieberman and Langer (as cited in Langer, 1998), students were asked to learn the material, and were told that they would be subsequently tested. Some of them were encouraged not to memorize but to make the material relevant to them. Results showed that those who made material meaningful instead of memorizing had better recall of information, were more creative in their answers and had better scores. In addition, a second experiment on 10th-graders in which one group read a passage from different perspectives (e.g. through different character roles) revealed similar outperformance on retention, creativity and intelligence as compared to the memory group (Lieberman & Langer, as cited in Langer, 1998) These two studies reveal the importance of learners' agency in sense-making. Furthermore, Gick and Holyoak (1987) found that when participants were aided in forming their own abstractions in one learning situation, their transfer of learning to a new

situation was greater than that of participants who were provided with ready-made abstractions. Indeed, students given the opportunity to invent their own learning products were better equipped for learning (Schwartz & Martin, 2004). Taken together, these studies show that greater autonomy conferred by mindful learning allows learners to construct individualized ways of assimilating the material, leading to positive learning outcomes and negating the academic problem described by Witz (2000).

*Learners' Preconceptions.* Another contributing factor to the academic problem could be the learner's preconceived notions of learning being uninteresting, laborious, and various other negative connotations. Such ideas may often be initially adopted without any self-relevance or immediate need for verification, and later be taken absolutely without challenging or considering alternative perspectives. This is described as premature cognitive commitment (Langer, 1993). Research found that such commitments are likely to arise when information is given in absolute rather than conditional language, and usually by an authority (Chanowitz & Langer, 1981). An example is the common statement 'no pain, no gain' as often told by parents and teachers to learners. While the intent is to convey the value of hard work, this statement can have detrimental effects to learners' conception of studying. It transmits the immutable idea that learning is necessarily unpleasant in order to yield any academic gain, which Langer (1993) argues is inaccurate. She further argues that "learning or gain that is not fun is mindless" (Langer, 1993, p.43). Langer (1993) suggests that we would do better asking ourselves what is fun for our students, and trust that learning will inevitably follow.

Towards addressing this misperceived dichotomy between learning and fun, mindful learning plays a vital role. Besides how learning to draw distinctions between objects of learning can help to increase interest, engagement and liking, what makes an activity enjoyable is the process of going from not knowing to knowing (Langer, 1998). When we

draw these distinctions ourselves, especially those that are self-relevant, i.e. information that is about ourselves or that we care about, we derive not only pleasure, but also retain information better.

*Learners' Attributes.* Sustained attention to something fixed can be distasteful and difficult. Mindfulness can help students to sustain their focus on learning. It can help students' react more effectively when potential distractions (e.g., internal impulses, or external events) arise by promoting a clarify to awareness and informed choice about whether to engage in the distraction. In addition, a mindful focus on drawing distinctions and appreciating nuance can help sustain attention. Langer (1998) suggests viewing distraction as "being otherwise attracted" (p.36), and therefore in order to concentrate better, learners should increase variability in their attention stimuli via drawing distinctions. Mindful attention emphasizes distinction, change, and novelty.

*Learning Style.* One learning myth described by Langer (1998) is that mastery results from repetitive drilling of the basics to make it perfect. While repeated drilling causes multiple smaller components of the activity to coalesce into lesser and bigger chunks, therefore demanding less of our attention resources, it can also bring learners into a mindless processing of material which, apart from possibly boosting test scores, detracts from creativity, flexibility and transfer of learning as shown above. It is therefore important to learn, but not over-learn. Learners should not freeze their understanding of the material or skill before trying it out in different contexts. Over-learning leads to boredom in learners, and contributes to disengagement.

That being said, there is still some role for memory. Langer (1998) provided the analogy of actors learning scripts - that they first read to get the overall idea and meaning, and next understand the meaning of their lines in relation to its context, plot, other characters and perspectives, before proceeding to memorize their lines. Having an

integrated and thorough understanding reduces the tedium involved in the memorizing process, making learning less of a chore. In other words, understanding does not make memory redundant, instead enhances its retention. Mindful learning requires learners to fully comprehend the boundaries of the information before they may choose to memorize.

*Learner's Mindset.* Even if the academic problem mentioned above is eliminated, there are still barriers to learning such as learners' beliefs about their abilities and intelligence. Carol Dweck's (2006) work on mindsets is essential in this discussion. With respect to abilities and traits, there are two kinds of mindset learners can adopt - a fixed mindset in which abilities and traits are believed to be pre-set and unalterable, while growth mindset recognizes the capacity for change through effort. Both mindsets are at opposite ends of a continuum with respect to each other. Learners who possess a fixed mindset often seek validation at every opportunity, believing that nothing can be done to change their level of ability. They are either smart or not. For that reason, they have to be the best at every instant, and failure is seen as a proof of the lack of abilities. On the other hand, learners with growth mindsets take abilities as a starting point and relish challenges to stretch their abilities. They view failures as opportunities for learning and focus on 'becoming' instead of 'being'.

Being mindfully aware of these different beliefs learners hold can in itself enable them to start thinking and reacting in new ways (Dweck, 2006). Meditative mindfulness can help detect such internal stimuli through its monitoring processes. After such observant awareness, elaborative mental processes such as disputation of fixed mindset beliefs can proceed, similar to that of challenging automatic thoughts in rational emotive behavioral therapy (Ellis, 1957). Disputation can involve marshaling counter-evidence or alternative perspectives, in which qualities of cognitive mindfulness proposed by Langer (1989a) would be useful. Through alertness to distinction and sensitivity to context, one can for

example highlight scenarios when the learner's effort was beneficial towards improving outcomes, or offer alternate viewpoints of how outcomes do not fully and directly measure the ability of interest. Furthermore, through an orientation to the present, cognitive mindfulness emphasizes the pro-active engagement of the self in creating meaning from the experience. Failures can be perceived through a growth mindset of having greater opportunities to learn, rather than a fixed mindset of disability. This empowers students by helping them to focus behaviors they can engage in to increase their learning.

### **3.4 Mindful School Structure**

All organizations, including schools, need a structure. Structural features can determine organizational effectiveness (Hoy & Sweetland, 2000). There is no doubt schools are bureaucracies (Hoy & Miskel, 2001), with different degrees of bureaucratization with respect to Weberian components such as hierarchy of authority, division of labor, impersonality, objective standards, technical competence, and rules and regulations (Weber, 1947). Yet while such bureaucratic structures are capable of attaining the highest degree of administrative efficiency, they have been criticized for producing over-conformity and rigidities (Gouldner, 1954), blocking and distorting communication (Blau & Scott, 1962), alienating and exploiting workers (Aiken & Hage, 1968; Scott, 1998), and stifling and eliminating innovation (Hage & Aiken, 1970). Therefore, it is important that regardless of the type of bureaucracy or structure a school has, it is an enabling instead of a hindering one. Research has shown that school bureaucracies vary along a continuum with enabling and hindering at opposite ends of each other (Hoy & Sweetland, 2001).

#### ***Features of School Structures***

Of all the different bureaucratic components, two dominant ones are *formalization* and *centralization*. *Formalization* refers to the extent that the organization has written rules, regulations, procedures, and policies. The work of Adler and Borys (1996) provided a

comprehensive and contemporary analysis of two types of formalization - coercive and enabling, which describes how work practices are affected by the features, design and implementation of such structures. Enabling formalization invites two-way dialogue, views problems as opportunities, fosters trust, value differences, capitalizes on and learns from mistakes, delights in the unexpected and facilitates problem solving. It requires participation, collaboration and flexibility, and promotes organizational learning and improvement. On the other hand, coercive formalization involves one-way (top-down) communication, seeing problems as obstacles, fostering mistrust, demanding consensus, suspecting differences, punishing mistakes, and fearing the unexpected. Coercive procedures are autocratic, rigid and unilateral. They force compliance and generate alienation. Importantly, being coercive or enabling may be independent of the degree of formalization. As Adler (1999) mentions, adverse consequences may not necessarily be inherent in rules themselves, but in the kinds of decisions made in establishing these rules - the implementation.

*Centralization* is the locus of control for organizational making; it is the degree to which employees participate in decision making (Aiken & Hage, 1968). Similarly, there are two kinds of centralization - coercive and enabling. Coercive centralization is an authority structure of a top-down hierarchy with concentration of decision-making at the top and demanding compliance from subordinates. Such a structure is rigid, autocratic, controlling, and impedes problem-solving and innovation. While hierarchy is often important for direction and coordination of efforts, rigid hierarchy can lead to dissatisfaction, alienation, and hostility (Aiken & Hage, 1968; Hoy, Blazovsky, & Newland, 1983). Such hierarchies typically react to external pressures in undesirable ways that reinforce autocratic supervision and over-standardization. In school contexts, teachers may be forced to "play the game of satisfying artificial standards rather than making independent judgments about the needs of their students" (Hoy, 2002, p.90). On the other hand, enabling centralization is an authority



structure that fosters cooperation and collaboration among superiors and subordinates regardless of their rank, while retaining their distinctive roles (Hirschhorn, 1997). Such a structure promotes flexibility, helps solve problems, and encourages innovation. Similarly, adverse consequences do not reside in any authority structure itself, but through decisions administrators make when they implement their authority. Decentralization of authority is not necessarily enabling, and neither is hierarchy always hindering.

### ***Enabling School Structure***

Upon analysis of these two features of bureaucracy, Hoy and Sweetland (2001) conceptualized enabling school bureaucracy or structure as one unified construct consisting of rule and hierarchy aspects. It is a structure formed by enabling formalization and enabling centralization; in other words, consisting of "a hierarchy that helps rather than hinders and a system of rules and regulations that guides problem solving rather than punishing failures" (Hoy & Sweetland, 2001, p.318).

Schools should strive towards building enabling structures as it indirectly relates to school effectiveness through collective trust, collective efficacy, and in particular, mindfulness (Hoy & Sweetland, 2001; Hoy, Tarter, & Witkoskie, 1992; Tracy, 2007). The latter can be understood given that enabling structures require delicate designation and implementation of rules and hierarchy. Such structures are dynamic and unique in different school systems and environments. Therefore, they require 1) active alertness of systemic needs, goals and feedback; 2) vivid awareness for accurate evaluation and self-knowledge; 3) panoramic attention that empowers clarity and autonomy in decision making; as well as 4) an attitude of curiosity, openness, and acceptance for continuous organizational learning and growth as a school. These are four features in our definition of mindfulness stated earlier on. Further research supports that school mindfulness is strongly and directly related to school effectiveness (Tracy, 2007).

While above sections on mindful teaching and mindful learning have focused on individual mindfulness, mindful structures illuminate the importance of collective mindfulness (which some researchers refer to as “organizational mindfulness”). The next section will describe some features of the latter to show that in fact, it bears similarities with individual mindfulness. Nevertheless, our stated definition of mindfulness encompasses both individual and collective considerations.

### ***Organizational Mindfulness***

As a school, organizational mindfulness is a collective property of the organization that "anticipates the unexpected by developing a state of organizational readiness in which scanning, anticipating, containing, removing, and rebounding from the unexpected are ever present" (Hoy, Gage, & Tarter, 2004, p.9). This definition is based upon Weick and Sutcliffe's (2001) work on the five components of high reliability organizations, which are considered mindful - focusing on failure, reluctance to simplify operations, sensitivity to contexts, commitment to resilience, and deference to expertise.

***Focusing on failure.*** This refers to a continuous scanning for problems to detect potential problems that might arise due to changing circumstances. Constant vigilance is the key, both to avert and 'advert' the danger that has not yet arisen. Focusing on failure is being open to novel information and subtle changes, consistent with Langer's (1989a) definition of mindfulness. The difference here is the attention on mistakes, instead of on successes, which the authors believe breeds contentment, arrogance and vulnerability. Focusing on failure is important because it helps us correct our attention from the natural confirmation bias through which we view things to the more balanced view of disconfirmation.

***Reluctance to simplify operations.*** Organizational issues are usually complex and require understanding the subtleties of the situation. When solving or understanding a problem, it is crucial to see as much as possible and try to reconcile different interpretations

without destroying the nuances of diversity and complexity. Indeed, when we habitually categorize situations and interpret them in big chunks and through schemas, we often lose sight of the individual pieces (Langer, 1998). In essence, simplifying less is seeing more.

***Sensitivity to operations.*** Similar to a sensitivity to context (Langer, 1989a), mindful organizations constantly look out for the unexpected. This requires detecting problems, making continuous adjustments, and preventing problems from arising (Hoy, 2002). Leaders should develop keen situational awareness and stay close to operations to understand what is going on and why. They should also be sensitive to relationships. Workers in organizations who refuse to speak freely enact a system that knows less than what it needs to remain effective. Lack of sensitivity to teaching and learning causes an information gap, which delays timely response (Hoy, Gage, & Tarter, 2006).

***Commitment to resilience.*** No organization is perfect, and no amount of preparation is sufficient to prevent mistakes and surprises from occurring. When efforts to detect, contain and prevent mistakes fail, an organization has to learn to be flexible, adaptive and rebound back from setbacks (Hoy, 2002).

***Deference to expertise.*** Similar to role rigidity that is often enacted in mindless individuals (Langer, 1989a), mindful organizations avoid the mistake of embracing rigid administrative structures (Hoy, 2002). A fluid decision-making system should be present where problem-solving is deferred to expertise instead of rank or experience. This also bears similarities to an enabling centralization where cooperation is encouraged and authority is anchored in effective problem-solving.

On the opposite end of the spectrum, a mindless organization would bear hallmarks of complacency, propensity to oversimplify, insensitivity to change, commitment to rigidity, and deference to the hierarchy (Hoy, 2002). While these hallmarks bear a sense of operational certainty and [false] stability, Langer (1989a) posits that such certainty, while

having a propensity to expand with continued success, embodies a detrimental development of an inert mindset to apply past solutions to present problems. On the contrary, it is mindfulness that allows us to thrive in this unpredictable, unknowable, complex and unstable world by being alive, alert, and active.

### *Enabling Structure and School Mindfulness*

Finally, after delineating the benefits of an enabling structure and a mindful organization, it should be highlighted that both constructs are highly inter-related and perhaps complementary (Hoy, 2002). Both require trust, openness, flexibility, cooperation and organizational learning. School mindfulness advocates flexibility in modifying rules and regulations, turning to effective modes of collaboration beyond authoritative ranks, and a culture of safety and openness that allows voice in organizational members to question and raise concerns. These are all aspects of enabling structures. Even if it seems disabling for a mindfulness perspective to advocate a focus on problems, it is enabling in the sense that it promotes sensitivity and flexibility in dealing with organizational challenges. Furthermore, such intentional vigilance ensures that organizations do not enable the wrong things. We can then argue that mindful organizations have enabling structures, but not all enabling structures are mindful organizations (Hoy, 2002). Enabling structures, though being flexible and supportive, can be mindless when they facilitate inappropriate procedures and behavior that do not fit the context or are entrenched in the past.

While enabling structures are important, they may be insufficient for school effectiveness. As echoed by Hoy (2002), "mindful organization is the more comprehensive concept because it seems to encompass enabling structure. But the road to mindful organization may first pass through hierarchies and rules that enable, that is, enabling structure may be an antecedent to collective mindfulness" (p.106).

### **3.5 Mindful Relationship**

This segment on mindful relationships draws primarily on the work of Dr. Daniel Siegel (2007, 2010), where he describes relationships as a form of interpersonal attunement. Interpersonal attunement is an internal alignment to the mental states of others. Interpersonal attunement brings about empathy which is necessary for relational well-being.

*Mindful Relationship is the recurrent patterns of interactions (e.g. intention, communication, behavior) characterized by the process of mindful relating, the latter comprising three aspects: 1) attunement to needs of self, 2) attunement to needs of others, and 3) skilful integration of both in service of relational and/or contextual goals.*

The role of mindfulness in relationships is apparent. Mindfulness enables intrapersonal attunement by eliciting reflective instead of reflexive self-awareness, and an optimal capacity for information processing and self-organization. It also facilitates interpersonal attunement through an empathic identification, understanding and concern of others' intentions, goals, desires etc. Lastly, mindfulness benefits skilful integration of both self and other needs through authentic internal conversations.

#### ***Mindful Relationships in Schools***

Based on the ecological model posited by Bronfenbrenner (1979), there are several relationship dyads critical to whole school functioning, such as teacher-teacher, student-student, teacher-parent, and parent-student. Specific to each relational dyads is a host of unique considerations affecting the mutual relationship. For the purpose of this paper, I will explore mindful relationships in the teacher-student relational dyad.

#### ***Mindful Teacher-Student Relationships***

Teacher-student relationships are important for child development because adults bring enormous relational resources to support a child's intellectual, social, and emotional development (Pianta, 1997). Research has shown that the quality of such relationships is an

important predictor of three domains of student competence: socio-emotional, behavioral, and academic competence (e.g. Pianta, Steinberg, & Rollins, 1995). I propose that such relationships need to be mindful for several important reasons.

Central to the attachment-theory perspective of teacher-student relationships is that students bring to the classroom relational schemas or models about the nature of social relationships and their social world (Bowlby, 1988). Children have an internal working model through which they view and build future relationships with others, e.g. teachers. Teachers therefore require a mindful disposition not only in attuning to students' attachment style, but also in how they bring their beliefs of students' attachment styles to their interactions with them.

Teacher-student relationships can also be driven by a motivational perspective in which the educational context of schooling such as teachers' instructive and affective support for students, classroom climate, expectations, beliefs, behaviors, and tasks can influence the quality of such relationships. Mindful relating of teachers plays a vast role in classroom teaching. Teachers need to be attuned to their own 'being' (e.g. beliefs and expectations of students' abilities and motivations, motivation to teach) and 'doing' (e.g. instructional pedagogies, student evaluation, behavior appraisal), in addition to the attunement to students needs in the classroom. For instance, one of the most striking findings in the development and impact of teacher-student relationships is supporting students' autonomy in the classroom. Teachers who balance the need for structure and autonomy increase students' locus of responsibility for their own learning, their intrinsic motivation for academic tasks and their feelings of competence (Reeve, 1998; Reeve, Bolt, & Cai, 1999).

In addition, mindful relating with adolescents requires attuning to our premature cognitive beliefs about their needs. A commonly held premature cognitive commitment

prevalent in teachers, especially beginning teachers, is the classic stereotype that adolescence is a time of rebellion and detachment (Jarvis, Schonert-Reichl, & Krivel-Zacks, 2000). Consequently, many teachers assume that adolescents need less support from teachers, and some have employed distancing as a means to detach from these students (Finders, 1997). However, research has found that students who experienced more detached relationships with significant adults during adolescence were more likely to report holding negative beliefs about themselves (Ryan & Flinch, 1989). As such, it is suggested that what these adolescents need is not reduced but different ways of adult supervision.

Last but not least, socio-cultural perspectives of the teacher-student relationship remind us that the role of mindful relating is indispensable in being attuned to both ecological variables and the socio-constructive process of learning. Ecological factors include classroom culture and climate formed by student-student interactions, physical setup of the classroom, class norms, practices and routine standards. With respect to social constructivism, teachers need to be aware that students require space and opportunities to make meaning and take control of their own learning. This process of shared inquiry (Thomas & Oldfather, 1995) often invokes negotiation between teachers and students which has to be managed mindfully. With a range of needs, experiences and interests of different students, coming to a consensus is often the most valuable educational process.

#### **4. Cultivating Mindfulness**

This section targets the 'Teach' aspect of a mindful school, where explicit meditative mindfulness instruction is the focus. Mindfulness programs are growing; a compilation between 2005 and 2012 of direct mindfulness training for youths amount to 14 programs, 6 in elementary schools and 8 in high schools (Meiklejohn et al., 2012). Note that these merely constitute the published ones, and there may be more not under the radar.

Meiklejohn and colleagues (2012) have collectively compiled the benefits of such mindfulness trainings, ranging from improvements in youths working memory, attention, academic skills, social skills, emotional regulation, and self-esteem, to a decrease in anxiety, stress and fatigue. The intent of this section is to convey general considerations, aspects and challenges in implementing such mindfulness trainings in schools. It will not articulate specific activities or recommend one training over the other as different schools embody different needs. In addition, an emerging domain of mindfulness-based strengths practice (MBSP) will be discussed, providing another tool schools can consider adopting especially in this era of affective education.

##### **4.1 Challenges and Considerations**

William James (1890/1950) aptly summed up the importance and challenges of cultivating mindfulness in schools:

The faculty of voluntarily bringing back a wandering attention over and over again, is the very root of judgment, character and will...An education which should improve this faculty would be the education *par excellence*... but it is easier to define this ideal than to give practical instructions for bringing it about (p.424).

Explicit mindfulness training has to accompany the implicit infusion of mindful practices delineated in the previous section. Indeed, neurobiological research in adults



suggests that "sustained mindfulness practice can enhance attentional and emotional self-regulation and promote flexibility, pointing toward significant potential benefits for both teachers and students" (Meiklejohn et al., 2012, p.291). Nevertheless, crafting explicit training programmes in schools can be challenging due to operational constraints such as time.

*Lack of Time.* With hectic academic demands already clamoring for more time, another initiative like mindfulness would seem to be the last on any school's agenda. I offer two practical considerations. First, the objectives of mindfulness practices dovetail very neatly with the increased emphasis on social-emotional learning. Educators could consider integrating it into pastoral or guidance lessons that serve the same purpose. Second, these exercises need not take up a long time. Hooker and Fodor (2008) and Semple et al. (2005) advise that for children, unlike adults, mindfulness meditations are initially brief, between five and 15 minutes. These could be done strategically at various times of the day such as the start of the first lesson, before or after recess breaks, prior to tests or competitions, or spontaneously when tension is present in the classroom. In such a deployment, mindfulness can be seen as functionally valuable instead of just another activity in fulfillment of required curricula. This also gives autonomy to teachers and students in terms of initiating their own mindful practices. Schools could also implement mindfulness practices together as part of assemblies or institutionalize it daily at a certain time of the day. The crux here is to get creative in terms of time use by exploring how mindful practices can be inserted judiciously.

Further, Burnett (2011) articulated additional challenges such as its religious affiliation to Buddhism, different types of meditative mindfulness practice, difficulty in articulating a clear purpose, and the expertise of instructors. I will touch upon each aspect briefly.

**Religious Affiliation to Buddhism.** Though mindfulness-based practices have been mainly adapted from Buddhist mindfulness meditation, mindfulness is secular. Kabat-Zinn (2003) echoes this clearly:

And mindfulness, it should also be noted, being about attention, is also of necessity universal. There is nothing particularly Buddhist about it. We are all mindful to one degree or another, moment by moment. It is an inherent human capacity. The contribution of the Buddhist traditions has been in part to emphasize simple and effective ways to cultivate and refine this capacity and bring it to all aspects of life (pp. 145-146).

**Types of Meditative Mindfulness Practices.** Mindfulness exercises are based upon two types of meditative practices: focused/concentration/*samatha* or insight/awareness/*vipassanā*. Focused meditation involves concentrating your attention onto a fixed internal or external object e.g. the breath, a word, candle etc. When attention strays from the object into a distraction e.g. thought, it is gently but firmly brought back to the object. Kabat-Zinn (2005) provides the metaphor "like the fins of a submarine or the keel of a sailboat, *samādhi* (concentration) stabilizes and steadies the mind even in the face of its winds and waves" (p.76). Such attention regulation allows for noticing but not cognitive processing of mental stimuli, thereby achieving sustained concentration on an object. This ability to concentrate on an object long enough is the foundation for a stable platform from which everything can be seen and experienced with depth and clarity. As Burnett (2011) puts, "If your mind is the instrument used to investigate and explore your lived experience, '*samatha*' calibrates, sharpens and stabilizes that instrument so that it can really see what is happening (p.90). Furthermore, a focused mind in this way experiences positive states of peacefulness, tranquility, and mental silence (e.g. Rahula, 1974). This state of mind produced by focused meditation sets the stage for insight meditation.

Insight meditation involves attending to whatever arises in a stream of consciousness, observing, investigating and exploring the experience to understand its true nature. All mental events arising from the moment-to-moment awareness are observed and are seen to share the three characteristics of impermanence, suffering, and non-self (Grabovac, Lau, & Willett, 2011). Illustrating it with the breath as the mental event: the meditator observes that no two breaths are the same and are changing all the time (impermanence), the meditator may form a preference for a style of breathing and is aware of conscious efforts to change the breath to the preferred style (suffering), and the meditator may realize that even if nothing is done to control the breath, breathing still occurs (non-self). Initially, such observations can be conceptual, but over time, meditation will become less conceptual and more experiential, with the mental event (in this case, the breath) being "dissected or decomposed into smaller and faster discrete sensations in which the three characteristics are experienced directly" (Grabovac, Lau, & Willett, 2011, p.159). As a contrast, focused meditation ignores any awareness of these three characteristics; when any of these characteristics comes into awareness, the attention is intentionally brought back to the fixed object again.

Both types of meditative practices are complementary to each other and are said to be partners in the job of meditation (Gunaratana, 1992). In a school setting, however, achieving insight may be more challenging due to the little time for mindfulness practices (Burnett, 2011).

***Articulating a Clear Purpose.*** Translating the various psychological benefits of mindfulness into practical and appealing motivations for students, teachers, and a whole school involves different challenges. At the student level, children need to have a more concrete understanding of the rationale of what may look like 'relaxation' exercises or naps. Teachers need to be experientially convinced on how mindfulness can enhance their

teaching job and well-being. A school-wide buy-in may involve the belief that mindfulness practices can be effectively integrated into school operations if adopted. Certainly, effective teaching of mindfulness requires what Kabat-Zinn (2005) refers to as 'scaffolding', the "instructions, guidelines, a context, a relationship, a language to venture meaningfully into the wilds of our own minds" (p.95). For example, a context for teaching mindfulness to students would be to help them manage peer pressures, or in the context of teachers could be work stress. These are what Burnett (2011) identifies as specific vulnerabilities - related to a particular condition. He also identifies universal vulnerabilities, which are universal characteristics of our innate human mind that undermine well-being, for example the elaborative tendencies we have for problem-solving being used for rumination. These are also important aspects that warrant mindfulness practices. There can be many good reasons for practicing mindfulness, but articulating a clear and meaningful purpose requires understanding the needs and contexts of students, teachers, and the school.

***Expertise of Instructors.*** It is important for mindfulness teachers to embody the qualities of mindfulness and also have a personal mindfulness practice that supports this. As Segal, William, and Teasdale (2002) commented, "instructor's own basic understanding and orientation will be one of the most powerful influences affecting this process [helping individuals make a radical shift]. Whether the instructor realizes it or not, this understanding colors the way each practice is presented, each interaction handled." (pp.65-66). Vicarious learning can occur when the instructor's own direct manifestation of 'being' in the mindfulness instruction communicates to learners the essence of shifting from modes of 'doing' to 'being'. Essential domains of competence for mindfulness teachers include coverage and pacing of session curriculum, relational skills, guiding mindfulness practices, conveying course themes through interactive teaching, embodiment of mindfulness, and management of group process (Crane, Soulsby, Kuyken, Williams, & Eames, 2011).

In the school setting, however, depending on the kind of mindfulness exercises to be taught and the curricular time, classroom teachers may not require similar proficiency levels as instructors who run a eight-week MBSR or MBCT session. Nevertheless, they should be equipped to deal with common questions that students might have. In addition, specific to teaching mindfulness in a school context are the classroom management and relationship building skills that teachers should possess. This suggests that skills required for effective mindfulness teaching depend on the context.

#### **4.2 Implementing Mindfulness Practices.**

Besides time and expertise, there are various operational considerations for mindfulness exercises. Two aspects are given below:

*Developmental Maturity.* Mindfulness exercises can have a high level of abstraction, and therefore in modifying it to for children, more activities should use clear, concrete, and descriptive language in their instructions (Hooker & Fodor, 2008). A teacher may first begin with mindfulness exercises that focus more concrete attention to the external environment, then moving to the experience of the body, and finally, introducing attention to the mind and meditation exercises. In addition, for more difficult concepts, the use of repetition and metaphors are encouraged (Heffner, Sperry, Eifert, & Detweiler, 2002; Semple et al., 2005; Wicksell, Dahl, Magnusson, & Olsson, 2005). In addition, children are also imaginative and are able to use their creativity and imagination (Fontana & Slack, 1997). They can be involved in various creative expressions and constructions of mindfulness, for example creating self-portraits (Reid, 2009).

*Variety and Repetition.* Delivering mindfulness exercises of sufficient variety and repetition is important. There should be enough repetition so that the skill can be internalized, while variety is needed so that one is not bored and also allowing for a greater likelihood of mindfulness skills to be generalized from the classroom to real-world

situations (Thompson & Gauntlett-Gilbert, 2008). It is such everyday generalizability that makes mindfulness a way of being (Kabat-Zinn, 2003).

### **4.3 Strong Mindfulness**

With the emphasis on character education, schools have been looking at effective vehicles to cultivate and sustain character development. It is apt to consider the intersection between mindfulness and character strengths. Direct applications of mindfulness have mostly adopted a remediation approach, most often reducing stress, pain, relieving eating disorders, coping with substance abuse, personality disorders, relationship problems, trauma and so forth. Thus far, there has been little integration between mindfulness and strengths (Niemic, Rashid, & Spinella, 2012).

Mindfulness practice can be strengthened through the use of character strengths. This enhancement is one part of the dual intertwining pillars of Mindfulness-Based Strengths Practice (MBSP; Niemic, 2014). As described by Niemic (2014), the integration of character strengths and mindfulness at its best is as follow: "to bring a deep awareness to our best qualities and to use these qualities to improve our awareness" (p.xiii). Niemic, Rashid, and Spinella (2012) identified such strong mindfulness allowing individuals to use character strengths to confront, manage, or overcome obstacles that emerge during mindfulness practice, widen perspectives, and deepen various mindfulness practices. In addition, mindfulness practices facilitate increased self-awareness and identification of positive traits or character strengths, giving one greater clarity and potential to employ these character strengths later on. This can create what the authors describe as a 'virtuous circle' (Niemic, Rashid, & Spinella, 2012, p.241), in that as mindfulness increases, awareness of strengths deepens and this feeds back into stronger mindfulness, with continuing mutually reinforcing interactions.

Research has shown that the use of signature strengths has well-being benefits; it allows us to make progress on our goals and meet our basic needs for independence, relatedness, and competence (Linley, Nielsen, Gillett, & Biswas-Diener, 2010). Also, among youth, the use of signature strengths in novel ways has in part led to increases in student engagement and hope (Madden, Green, & Grant, 2011). Furthermore, signature strengths use is characterized as invigorating and natural; it is a core part of who we are (Peterson & Seligman, 2004). As such, the application of student's signature strengths to mindfulness can both strengthen well-being and enhance mindfulness.

I would like to build upon Niemiec's (2014) work on strong mindfulness. I will delineate how each character strength can serve to nurture the triad aspects of dispositional mindfulness, namely sensitivity, inclination and ability. Through adopting different strength-based lens, we can be placed at various vantage points to be more cognizant of possibilities and appropriate uses of mindfulness, hence cultivating sensitivity. The use of character strengths may help enhance the outcomes of mindfulness in terms of three basic psychological needs - autonomy, relatedness and competence (Deci & Ryan, 2000), thus strengthening inclinations. Finally, character strengths can be directly or indirectly implicated in building specific skills required for the mindfulness ability. To give an example, the strength of judgment (critical thinking) can help us identify and appraise the use of mindfulness in different situations (sensitivity), make more self-concordant and carefully deliberated mindful decisions (inclination), and is directly involved in cultivating alertness to distinction, sensitivity to contexts, and the generation of multiple perspectives (ability). A list of how 24 character strengths contribute to the development of three aspects is given in Table A3 of the Appendix.

It is my aim that through a systematic component understanding of how we can cultivate the trait of mindfulness, schools are able to optimally synthesize and direct

character strengths education in line with objectives of mindfulness, building a virtuous spiral of mindfulness and character strengths towards an education of well-being.



## 5. Conclusion

Increasing global attention and growing emphasis is placed on well-being. Education can be used as a vehicle towards raising a flourishing generation. An education for well-being has ignited the field of positive education, advocating the importance of teaching well-being skills alongside academic ones. Positive education is a qualitative shift away from traditional education approaches. As the Singapore education system is moving towards C2015 fostering student-centric and values-driven education, it demands continued engagement of the whole-child through co-constructive journeys, a school ecosystem that encompasses a total curricula and whole-school approach, and a future-oriented perspective with multiple pathways of excellence. Mindfulness creates the space for such transformation by equipping us to be an architect of our inner and outer landscape. It confers clarity, autonomy, and congruence that motivates, calibrates, and informs action.

Both forms of mindfulness traditions (cognitive and meditative) are seamlessly integrated; they complement and augment each other's capacities. Such holistic mindfulness can be integrated in multiple aspects of our lives. In schools, we need to cultivate explicit capacities for mindfulness, embed mindful informational, process, and management infrastructures, and be mindfully living as individuals and interacting with others. Together, the mindful school emerges as a collective greater than the sum of its mindful parts, instilling a culture and climate that defines a mindful contagion. Many positive education programs are one-time off and lack a whole-school, total-curricula approach. This paper advocates mindfulness as a mindful positive education initiative, adopting a comprehensive approach to a mindful education for well-being. Further, it lays down the foundational bedrock for additional positive educational initiatives such as character strengths, values, resilience, optimism, hope, motivation, self-efficacy, and many others. Siegel (2007) describes mindfulness as the fourth 'R' of education - reflection. Regardless of what is learnt,

mindfulness is a 'life-enhancing facility' of the mind that promotes flexibility and space within ourselves and others, and allows us to learn how to learn by attuning to our intention. It is the driver of change.

A whole-school approach to mindfulness is not an easy task. There are many operational, structural, and technical constraints that limit the effectiveness of a mindful approach. Besides knowing how to teach mindfulness, every teacher has to be a living practitioner. Besides being written down in policies and practices, mindfulness has to be practiced and flexed like a muscle. It requires a concerted approach marked by consistency and coherence. In addition, there is also no one-size-fits-all approach to mindfulness. As Seligman (2013, personal communication) echoed, '*well-being is local*'. Any mindfulness program cannot be imported whole-sale; it has to be modified and/or perhaps organically crafted to suit the idiosyncratic needs of the school.

Nevertheless, as Schoeberlein and Sheth (2009) put it, mindfulness and education and beautifully interwoven. As Italian physicist and astronomer, Galileo Galilei explains, "you cannot teach a man anything; you can only help him find it within himself."

## Appendix

Table A1

*Most Frequently Cited Conceptions of Mindfulness*

Authors	Description	Measured Aspect	Components Of Mindfulness
Lau et al., (2006)	Toronto Mindfulness Scale (TMS)	State	2 components: 1. Self-regulation of attention so that it is maintained on immediate experience, thereby allowing for increased recognition of mental events in the present moment 2. Non-elaborative attention characterized by curiosity, acceptance and openness
Bishop et al., (2004)			
Baer, Smith, & Allen (2004)	Kentucky Inventory of Mindfulness Scale (KIMS)	Trait	4 Mindfulness skills as applied to Dialectical Behavioral Therapy (DBT) 1. Observing 2. Describing 3. Acting with Awareness 4. Accepting without Judgment
Brown & Ryan (2003)	Mindfulness and Attention Awareness Scale (MAAS)	State and Trait	2 aspects of the present moment: 1. Presence or absence of attention to 2. Awareness of what is occurring
Buchheld, Grossman, & Walach (2001)	Freiburg Mindfulness Inventory (FMI)	Trait	4 inter-related facets: 1. Mindful Presence 2. Non-judgmental Acceptance 3. Openness to Experiences 4. Insight
Walach, Buchheld, Büttenmüller, Kleinknecht, & Schmidt (2006)			

## Appendix

Table A1

*Most Frequently Cited Conceptions of Mindfulness*

Authors	Description	Measured Aspect	Components Of Mindfulness
Feldman, Hayes, Kumar, Greeson, & Laurenceau (2007)	Cognitive and Affective Mindfulness Scale-Revised (CAMS-R)	Trait	4 components: 1. Attention 2. Present-focus 3. Awareness 4. Acceptance
Chadwick, Hember, Mead, Lilley, & Dagnan (2005)	Mindfulness Questionnaire (MQ)	Trait	4 Aspects: 1. Mindful observation 2. Letting go 3. Non-aversion 4. Non-judgment
Baer, Smith, Hopkins, Krietemeyer, Toney (2006)	Five Factor Mindfulness Questionnaire (FFMQ)	Trait	5 distinct facets from MAAS, KIMS, FMI, CAMS, MQ: 1. Describe 2. Act with Awareness 3. Non-judge 4. Non-react 5. Observe
Cardaciotto, & Herbert (2005)	Philadelphia Mindfulness Scale (PHLMS)	Trait	2 dimensions: 1. Present-moment awareness 2. Non-judgmental acceptance
Dimidjian & Linehan (2003)	Mindfulness practice in DBT	Behavior	Consists of 6 elements

**Appendix**

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Table A1

*Most Frequently Cited Conceptions of Mindfulness*

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Authors	Description	Measured Aspect	Components Of Mindfulness
			What one does: 1. Observing 2. Describing 3. Participating How one does it: 4. Non-judgmentally 5. One-mindedly 6. Effectively

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## Appendix

Table A2

*Frequency Tabulation and Parsimonious Reduction of Meditative Mindfulness Features*

Authors and Features	Self-Regulation	Non-Elaborative/Conceptual Awareness	Curiosity	Receptive/Openness	Present Orientation	Bare Attention	Non-Judgment	Acceptance/Non-Reactive	Insight	Describing	Letting Go	Acting With Awareness	One-Mindedness	Patience	Trust	
Bishop et al., (2004)	✓	✓	✓	✓	✓			✓								
Baer, Smith, & Allen (2004)		✓						✓								
Brown & Ryan (2003)		✓				✓	✓	✓		✓		✓				
Buchheld, Grossman, & Walach (2001)				✓	✓		✓	✓	✓							
Feldman, Hayes, Kumar, Greeson, & Laurenceau (2007)		✓			✓	✓	✓	✓								
Chadwick, Hember, Mead, Lilley, & Dagnan (2005)		✓				✓	✓	✓			✓					
Baer, Smith, Hopkins, Krietemeyer, Toney (2006)		✓				✓	✓	✓		✓		✓				
Cardaciotto & Herbert (2005)		✓			✓		✓	✓								
Dimidjian & Linehan (2003)		✓				✓	✓	✓	✓	✓		✓	✓			
Kabat-Zinn (1990)		✓				✓	✓	✓			✓			✓		✓
Total Frequency	1	9	1	2	4	6	7	9	2	3	1	3	1	1	1	1

## Appendix

Table A3

*Cultivating the Three Aspects of Dispositional Mindfulness through the 24 Character Strengths*

Virtue	Character Strengths	Dispositional Mindfulness		
		Sensitivity	Inclination	Ability
Wisdom & Knowledge	<b>Creativity</b> [originality, ingenuity]	Identify new situations in which mindfulness can be applied	Allows one to channel creative motivation towards present moment experience e.g. engaging in sense-making which affords personal autonomy and competence	Use creativity to generate awareness of multiple perspective, re-structuring of perception
	<b>Curiosity</b> [interest, novel-seeking, openness to experience]	Identify potential for mindful occasions through a keen explorative sense, and being open to all possibilities of mindful awareness	Holding an attitude of curiosity aids in attaining insight and discovering who we and others are, therefore enhancing competence and relatedness.	Curiosity facilitates openness to novelty, aids in maintaining a non-judgmental stance, and is the starting point for promoting multiple perspectives
	<b>Judgment</b> [critical thinking]	Appraising the use of mindfulness in situations, and identify the appropriate use of mindfulness in different situations	Using the attitude of judgment or critical thinking, we can make more self-concordant and autonomic decisions, and prevent mindless behaviour	Judgment facilitates alertness to distinctions, sensitivity to contexts, and the generation of multiple perspective
	<b>Love of Learning</b>	Gaining awareness of situations that requires mindful participation, processing and internalizing this awareness	Having a love of learning allows us to see situations as potential opportunities to learn about being mindful in these situations, enhancing our competence and autonomy.	Inherent in a love for learning are attributes of openness to novelty, alertness to distinctions, sensitivity to context, and awareness of multiple perspectives

Table A3

*Cultivating the Three Aspects of Dispositional Mindfulness through the 24 Character Strengths*

Virtue	Character Strengths	Dispositional Mindfulness		
		Sensitivity	Inclination	Ability
Courage	<b>Perspective</b> [Wisdom]	Using perspective to be alert on situations that require mindfulness	Exercising the strength of perspective is a motivation for being mindful. Generating perspectives allow situations to be evaluated more holistically and accurately, increasing our competence and autonomy.	Generating awareness of alternate perspectives aids sensitivity to context, alertness to distinctions and help re-structure perception
	<b>Bravery</b> [Valor]	Approaching others in understanding the situation so as to increase our mindful awareness	Being mindfully aware of the bare reality is something that may require bravery; such clear insight builds competence.	Using bravery to face up to situations that require mindfulness instead of past mindlessness, to cultivate acceptance, non-judgment, bare attention, present-orientation, and openness to novelty
	<b>Perseverance</b> [persistence, industriousness]	Deploying perseverance in identifying and learning about situations that require mindfulness	Perseverance helps cultivate the habits of mindful practices more consistently and effectively, making its cultivation worthwhile, therefore building competence and instilling a sense of autonomy over our choices.	Perseverance helps us focus our attention to the present moment when we are distracted during mindful practice, and to maintain an active effort to draw distinctions, be sensitive to contexts, and be aware of multiple perspectives
	<b>Honesty</b> [authenticity, integrity]	Being honest to ourselves in identifying situations when mindfulness is needed	Being honest gears us towards being self-congruent, allows us to face up to who we are to ourselves and others. It enhances relatedness and self-competence.	Honesty facilitates bare attention and an orientation to the present moment. It promotes acceptance and non-judgment of who we are.



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*Cultivating the Three Aspects of Dispositional Mindfulness through the 24 Character Strengths*

Virtue	Character Strengths	Dispositional Mindfulness		
		Sensitivity	Inclination	Ability
Humanity	<b>Zest</b> [vitality, enthusiasm, vigor, energy]	Zest can be used for information gathering about situations that require mindful awareness	Zest helps us stay engaged in understanding who we are internally and to make sense of our external environment. It endows us with a sense of autonomy, relatedness and competence.	Zest activates an alert state of mind that allows us to draw distinctions, be aware of multiple perspectives, be open to novel information and be sensitive of context
	<b>Love</b>	Loving ourselves and others galvanize us to be more attentive to situations that require mindful awareness and behaviour	Love is the unifying emotion of all positive emotions and are micro-moments of positivity resonance beneficial to our well-being. It demands a sensitivity to the needs of self and others, therefore requiring us to be mindful of what is good for us and them. It enhances relatedness and competence.	Loving ourselves includes accepting who we are, therefore facilitating bare attention and non-judgment. Loving others require that we cultivate empathy, which promotes sensitivity to context, awareness of multiple perspectives, openness to novel information and alertness to distinctions
	<b>Kindness</b> [generosity, nurturance, care, compassion, altruistic love, "niceness"]	Being kind to ourselves and others galvanize us to be more attentive to situations that require mindful awareness and behaviour	Kindness demands a sensitivity to the needs of self and others, therefore requiring us to be mindful of what is good for us and them. It enhances relatedness and competence.	Being kind to ourselves entails self-compassion, therefore facilitating acceptance, bare attention, and non-judgment. Being compassionate to others entails sensitivity to context, awareness of multiple perspectives, openness to novel information and alertness to distinctions

Table A3

*Cultivating the Three Aspects of Dispositional Mindfulness through the 24 Character Strengths*

Virtue	Character Strengths	Dispositional Mindfulness		
		Sensitivity	Inclination	Ability
Justice	<b>Social Intelligence</b> [emotional intelligence, personal intelligence]	Being socially intelligent helps us attune to the sensitivities of the situation and inform us when mindfulness is needed	Social intelligence help us handle interpersonal relationships and situations more adeptly. It enhances relatedness and competence.	Being socially intelligent requires interpersonal and situational understanding and awareness. It therefore facilitates a present orientation, bare attention, non-judgment, openness to novelty, sensitivity to context, multiple perspectives and alertness to distinctions
	<b>Teamwork</b> [Citizenship, loyalty, social responsibility]	Teamwork requires us to consider group needs and be attuned to communal requirements, strengthening our sensitivity to mindful awareness	Teamwork builds effective collaborative outcomes through mindful awareness of individual as well as collective needs and dynamics. It enhances competence and relatedness.	Engaging in teamwork fosters awareness of multiple perspective, sensitivity to contexts, alertness to distinctions and openness to novelty, all of which are essential for group performance
	<b>Fairness</b>	Fairness to self and others requires our attention to the needs and specifics of the situation, strengthening our sensitivity to mindful awareness	Maintaining a sense of fairness at the individual, interpersonal and collective level fosters wellness (Prilleltensky, 2012). It enhances autonomy, relatedness and competence.	Exercising fairness requires that we pay bare attention to things are they are, possess awareness of multiple perspectives, sensitivity to context, alertness to distinctions and openness to novelty.

Table A3

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Virtue	Character Strengths	Dispositional Mindfulness		
		Sensitivity	Inclination	Ability
Temperance	<b>Leadership</b>	Leading a group towards an objective requires sensitivity to the processes and people working together, therefore demanding a well-calibrated mindful awareness.	Leading and managing well requires understanding the needs and motivations of people, building enabling structures that support them, and setting goals and visions that are aligned, all of which being mindful is crucial. It enhances autonomy, relatedness, and competence.	The exercise of leadership involves openness to novelty, sensitivity to context, awareness of multiple perspectives, alertness to distinction, and a present orientation.
	<b>Forgiveness</b>	Forgiveness requires us to re-look at the self, other, and the matter from a benign perspective, focusing awareness mindfully from a different angle.	Forgiveness confers greater acceptance of self and others, and allows us to move on with life. It enhances autonomy, relatedness, and competence.	Practicing forgiveness involves bare attention, non-judgment, non-elaboration, present-moment awareness, acceptance, openness to novelty, sensitive to context, alertness to distinction and multiple perspectives
	<b>Humility</b>	Humility allows events and objects to manifest themselves with no additional embellishment. It allows clearer observation of the true nature of things, and informs us when to be appropriately mindful	Humility affords us clearer vision of what our accomplishments through a watered down awareness of the ego. It enhances competence and relatedness.	Being humble entail bare attention, non-judgment, non-elaboration, present-orientation, openness to novelty, sensitivity to context, awareness of multiple perspectives

Table A3

*Cultivating the Three Aspects of Dispositional Mindfulness through the 24 Character Strengths*

Virtue	Character Strengths	Dispositional Mindfulness		
		Sensitivity	Inclination	Ability
Transcendence	<b>Prudence</b>	Prudence supports in engaging mindfulness to the appropriate extent such that it does not amount paralyze our decision making. Knowing what aspects deserve greater mindfulness is key	Prudence ensures that outcomes are in our best interests, but its engagement also warrants the process of a mindful balance in devotion of resources to various aspects. It enhances competence and autonomy.	Being prudent therefore engages present orientation, acceptance, openness to novelty, sensitivity to context, awareness of multiple perspective, and alertness to distinctions
	<b>Self-Regulation</b> [self-control]	Self-regulation is a key process of mindfulness (Bishop et al., 2004). It acts as a modulator of attention, and affects the intensity of mindful awareness. As such, it furnishes us with the muscle to pay attention to context information that determines the amount of mindful processing needed for an event	Self-regulation has many well-being benefits. Nevertheless, effective self-regulation often requires mindful attention to emotions, thoughts, behaviours, and external cues. It enhances autonomy, relatedness, and competence.	Self-regulation involves bare attention, non-judgment, non-elaboration, acceptance, present-orientation, sensitivity to context
	<b>Appreciation of Beauty and Excellence</b> [awe, wonder, elevation]	Having an appreciative eye sharpens the sensitivity of identifying situations requiring mindful attention.	Appreciation of beauty and excellence demands mindful attention to specific aspects of the phenomena. To develop appreciation would require skilful observation skills possibly cultivated through intentional awareness. It enhances competence and autonomy.	Appreciation would involve alertness to distinction, sensitivity to context, awareness of multiple perspective, openness to novelty, present-orientation, bare attention, non-judgment, and acceptance

Table A3

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Virtue	Character Strengths	Dispositional Mindfulness		
		Sensitivity	Inclination	Ability
	<b>Gratitude</b>	Giving gratitude requires us to 'hunt the good stuff'. Through this process, it heightens our sensitivity to mindful awareness of objects, events and people from a fresh perspective	The process of gratitude builds relationships, as encapsulated by 'find, remind, bind' (Algoe, Haidt, Gable, 2008). All three require mindfulness. It enhances relatedness.	The 'finding' in gratitude requires alertness to distinction, openness to novelty, and awareness of multiple perspectives. Binding invokes present moment consciousness and interpersonal attunement (Siegel, 2007).
	<b>Hope</b> [optimism, future-mindedness, future orientation]	Hope heightens our awareness to possibilities and expands our mindful attention to goals, pathways, and agency, its three components. It can also sharpen our awareness of realism.	Hope engages us in favourable thoughts, emotions and actions towards our goals. It makes mindful awareness a necessity in order for us to search for possibilities, tailor our strategies to stay resilient, evaluate our circumstances and eliciting affective feedback. It enhances autonomy, autonomy, and competence.	Hope entails present-orientation, acceptance, alertness to distinction, sensitivity to context, awareness of multiple perspectives.
	<b>Humor</b> [playfulness]	Seeing the light side of things, just like appreciation and perspective-taking, heightens awareness of different attributes of objects, things or people. This enlarges the scope of mindful awareness	Humor and playfulness helps one to cope and thrive in adversities, and also to be in a open and creative state of mind. This requires flexibility and spontaneity that mindful awareness can provide. It enhances relatedness.	Humor and playfulness requires non-judgment, present-orientation, openness to novelty, alertness to distinction, sensitivity to context, awareness of multiple perspectives

Table A3

*Cultivating the Three Aspects of Dispositional Mindfulness through the 24 Character Strengths*

<b>Virtue</b>	<b>Character Strengths</b>	<b>Dispositional Mindfulness</b>		
		<b>Sensitivity</b>	<b>Inclination</b>	<b>Ability</b>
	<b>Spirituality</b> [faith, purpose]	Spirituality affords connection to a grand scheme of things and thus heightens sensitivity of mindful awareness serving this spiritual frame	Spirituality brings about meaning, coherence, and congruence in our lives. This requires mindful attention in detecting and making sense of internal and external stimuli according to the our spiritual lens. It enhances relatedness, autonomy, and competence.	Spiritual engagement brings forth bare attention, present-orientation, non-judgment, non-elaboration, acceptance, openness to novelty, sensitivity to context, alertness to distinction and awareness of multiple perspectives

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