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Educating for sustainable development: Cultivating creativity through mindfulness

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ABSTRACT

The emotional and cognitive benefits of creativity and mindfulness on the learning process are well documented. However, research on the role of creativity and mindfulness in higher education for sustainable development (HESD) is lacking. This article narrows this research gap by examining the (mis) alignment of managerial and mechanistic educational approaches with HESD, while advocating for teaching students how to learn rather than what to learn, emphasizing the need to cultivate contemplation and creativity, and exploring the opportunities associated with divergent thinking. This article utilizes theoretical inquiry and is grounded in the field of curriculum studies. The author describes how education for sustainable development can be transformed through mindful pedagogy and curriculum. HESD requires that we promote transdisciplinary inquiry and empower students to think and act differently than required within conventional educational approaches. The author argues that infusing mindfulness into higher education curriculum and pedagogy can help students reconceive the role of humans on the planet and cultivate reflection, innovation, and integration to tackle the grand challenges associated with sustainability. Situated at the intersection of sustainability education, creativity, and mindfulness, this work distinguishes itself from other similar scholarship by drawing from autobiographical inquiry, theoretical inquiry, and the broad field of curriculum studies.

1. Introduction

Mindfulness needs more attention in higher education for sustainable development (HESD) to promote responsiveness to complex sustainability challenges. Mindfulness, defined as "the awareness that arises by paying attention on purpose in the present moment nonjudgmentally" (Barbezat and Bush, 2014, p. 95), promotes creativity, reflection, and integrated thought. Mindfulness is non-reactive awareness that enables one to be fully present in the moment (Kwee, 2015). When mindful, rather than mind*less*, a student can reflect, innovate, and integrate and can tackle the grand challenges associated with sustainability. Wamsler et al. (2018) add that mindfulness "promotes the integration and blending of thought" (p. 146). Mindfulness can support the development of creative perspectives, which, in turn, can lead to sustainability-oriented innovation (Siqueira and Pitassi, 2016).

Working as a faculty member in higher education for over eight years, I continue to recognize and appreciate the importance of reflection both in and beyond the classroom. However, as I consider the higher education learning environment, I see a need to incorporate mindfulness, while increasing opportunities for student reflection. Writer Dan Siegel agrees and calls "reflection the fourth 'R' of education" (As cited in Bush, 2011, n.p.). The onslaught of information constantly transmitted to students is taking precedent over the importance of creating educational space for individual reflection. Students are overwhelmed by the amount of information with which they are bombarded, yet not given the time to process and figure out how to apply it. It is the overwhelming tendency for teachers to tell students what to learn as opposed to teaching them how to learn (Evans and Snowy, 2016; Rammel et al., 2016; Hensley, 2011, 2018a, 2018b). This paper will examine the (mis)alignment of managerial and mechanistic educational approaches with HESD while advocating for teaching students *how to learn* rather than *what to learn*, emphasizing the need to cultivate contemplation and creativity, and exploring the opportunities associated with divergent thinking.

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1.1. Overview of paper

The initial section of this paper addresses the value of mindfulness in higher education. This section both defines mindfulness and describes its benefits. The specific benefits of mindfulness for both students and faculty are investigated. A discussion surrounding slow and fast knowledge serves as an integrating thread in this section. In addition, how mindfulness helps to minimize anxiety and reduce boredom while emboldening students and faculty to comprehend and tackle the grand challenges associated with sustainability will be discussed.

The next section focuses on mindfulness and wicked problems. This section defines wicked problems and articulates how mindfulness and contemplation can assist students in identifying, tackling, and tolerating wicked problems. Investigating the notion of converting discomfort and uncertainty into inquiry, I articulate transformative dimensions of mindfulness with regard to seemingly intractable sustainability problems. Promoting creativity through mindfulness allows one to leverage cognitive dissonance as a means to becoming grounded for new discoveries and making new connections.

The next section explores creativity and sustainable development. The argument follows Einstein's belief that we cannot solve problems with the same kind of thinking that we used in creating them (Roggema, 2012). Creativity's definitions and characteristics are examined, which include viewing problems from different perspectives, formulating new solutions, and making novel connections. HESD requires that we equip and empower students to think and act differently, promote pluralistic thinking and work well between disciplines.

The final section deals with integrating mindfulness in HESD and explains that mindfulness can transform cognitive functioning by rewiring our brains. This section includes a brief discussion of various strategies to implement mindfulness in higher education and leverages the supports the argument that mindfulness enhances creativity and that creativity enables students to face challenging sustainability problems.

2. Methodology

In this paper, I utilize theoretical inquiry to explore the benefits of incorporating mindfulness and creativity into higher education for sustainable development. According to scholars Short and Grove (1991) theoretical inquiry, "create[s] and critique[s] conceptual schemes" which helps "curriculum practitioners and researchers to continue to clarify the essential nature of curriculum" (p. 211). In this article, I analyze and create conceptual schemes pertaining to mindfulness and creativity. Accordingly, I investigate how mindfulness might help address issues pertaining to higher education for sustainable development while offering suggestions for incorporating mindfulness into higher education settings. While reviewing the literature, I drew from my life experience embracing autobiographical inquiry and I utilized the Google Scholar web interface with keywords such as sustainability education and mindfulness, mindfulness and sustainability, mindfulness and creativity, and contemplation and creativity in education.

2.1. Theoretical foundations – why mindfulness in higher education?

Contemplation is the highest expression of man's intellectual and spiritual life. (Merton, 1961).

University students are overwhelmed with the rapid increase of sustainability challenges such as climate change, biodiversity loss, and poverty. The emotional and mental toll that sustainability challenges yield necessitates a mindful approach to education. A mindful approach is one that can keep students grounded and cognitively flexible with the attunement and wherewithal to tackle unpredictable and complex sustainability problems. It can be difficult to navigate sustainability problems with the distraction of screen-based media and the pressure to accumulate material wealth. One easily loses the ability to focus and problem solve within this commerce-centric world. Focusing on the task, while being fully present is a hallmark of mindfulness. Jon Kabat Zinn tells us that mindfulness means paying attention, in the present moment, without making judgments (In Wamsler et al., 2018). When mindful, a person is present in the moment, alert, and not defensive, so she can learn new information effectively. Barbezat and Bush (2014) observe that mindfulness "opens the mind and gives space for new understanding" (p. 98). Furthermore, mindfulness enables us to focus "on the reality of the present moment" while accepting and acknowledging it (Dreyfus as cited in Barbezat and Bush, 2014 p. 98). Educators who incorporate mindfulness techniques into their teaching create a classroom space that promotes student reflection (Hensley, 2018b).

Mindfulness enables students to slow down their thoughts, listen, communicate and focus (Kumar, 2013; Volk, 2015; Hensley, 2018; Hornich-Lisciandro, 2013; Meiklejohn et al., 2012). During times of trial and challenge, mindfulness helps us to uncouple from the mechanistic worldview. For example, mindfulness facilitates a shift from a survival mindset—perceiving a situation as a threat—to a challenge-oriented perspective. A challenge-oriented perspective allows one to see difficulties as challenges rather than as threats, thereby enabling hope and a perspective of opportunity. Barbezat and Bush tell us that mindfulness "can turn discomfort into inquiry and it makes us more human, [while opening] up a new part of us not available before" (2014, p. 99). This new part of us, not available before, emerges from the new understanding and perspectives associated with transformative learning.

Mindfulness techniques can range from (but are not limited to) a short classroom silence or quiet written reflection to leading students in a few moments of deep breathing. There are multiple ways that mindfulness can be implemented and it is important to promote mindful listening, mindful note taking, and mindful discussions in the classroom (Barbezat and Bush, 2014; Parks, 2017; Mueller and Oppenheimer, 2014). When students are mindful of one another and the professor, they are more likely to pay attention and contribute to the class. Mindfulness "develops the capacity to retain and make sense of information learned while mindfully paying attention" (Barbezat and Bush, 2014, p. 96). Making sense of information involves processing and synthesizing it. Figuring out how to apply newly learned information and thinking differently is also important to the learning process. Hornich-Lisciandro (2013) states that mindfulness is the "act of giving space to being able to think differently, or simply being able to focus on the present moment" (p. 67). To counter the tendency to overemphasize one way of looking at an issue, mindfulness generates the room necessary for considering multiple viewpoints.

Hornich-Lisciandro (2013) maintains that "mindfulness is a tool that students can use in class, sports, job and activities. It can help better organize their lives because they can begin to organize thoughts and control their emotions … we all [teachers and students] benefit when everyone in the learning community is more aware and better focused" (p. 68). Furthermore, Dreyfus states that mindful students are "able to hold onto what they are learning over time and integrate it into meaningful patterns" (As cited in Barbezat and Bush, 2014, p. 96). Thusly, when the emphasis is on covering material rapidly in traditional higher education contexts, we are not providing adequate opportunity for students to slow down in their learning (Kumar, 2013; Davidson et al., 2012;

Lemenager and Foote, 2012; Orr, 1996). Environmental thinker David Orr states that rapidly covering material is a symptom of fast knowledge. Orr (1996) explains that "[f]ast knowledge is now widely believed to represent the very essence of human progress" (p. 699). Fast knowledge is characterized by "rapid technological change and the rise of the global economy" which has "undermined communities, cultures, and religions" (Orr, 1996, p. 699). When fast knowledge becomes the norm, it is less likely that students will be able to tap into a mindful form of learning. Students inured to fast knowledge have shorter attention spans and are easily bored.

Environmental writer Derick Jensen (2006) observes that boredom is pandemic in our society. He posits that "our schools are filled with bored children preparing for bored lives" (p. 95). Not only are students bored, they are becoming distracted, anxious, or even fearful. Bombarded with messages of conformity and inundated with distraction, students are unable to learn. Curriculum theorist William Reynolds suggests that distraction is intentionally used to divert attention and to prevent individuals from challenging the status quo (PC, October 12, 2006). When a person is experiencing fear, they are not in an optimal place for learning. Educational psychologist Daniel Goleman (1995) calls this fear response "emotional hijacking." During emotional hijacking, the circuitry of the brain is sabotaged by a fear response that prevents one from being able to fully engage in a learning opportunity.

Mindfulness is proven to reduce anxiety and fear. Mindfulness-based stress reduction (MBSR) is a program that "incorporates mindfulness to assist people with … a range of conditions and life issues" (Mindfulness-based stress reduction, 2018). Mindfulness has been associated with stress reduction, relaxation, and improvement to quality of life (Mindfulness-based stress reduction, 2018; Hornich-Lisciandro, 2013). In the context of higher education, mindfulness has these same effects and can prevent emotional hijacking. Accordingly, mindfulness has transformative potential in the context of higher education and in other settings. Mindfulness emboldens student creativity and enhances their ability to comprehend and tackle the grand challenges associated with sustainability (Hensley, 2017).

2.2. Mindfulness and wicked problems

Sustainability challenges do not seem tractable to business-as-usual solutions; novel approaches are needed (Wiek et al., 2016, p. 241, p. 241).

Within the scope of higher education for sustainable development (HESD), educators and students must learn to identify ways that they can tackle wicked problems and think across multiple domains to confront the many problems in those fields. Wicked problems are "problems the solutions to which are not obvious, wherein complexity is high, uncertainty is rampant, values are in dispute and trade-offs are the norm" (Miller, 2015, p. 6). Wicked issues are different from tame or benign problems "in which the goal is clear and it is easy to determine whether the problem has been solved" (Miller, 2015, p. 6). For example, climate change is a wicked problem of unprecedented range and duration (Mulligan, 2015) because no easy solution exists; in fact, there are hundreds of partial solutions, all of which pose their own sets of problems. To illustrate, efforts to mitigate greenhouse gas emissions often conflict with short-term economic interests. Thusly, because of the numerous stakeholder interests, climate solutions are not easy fixes.

Tackling wicked problems requires a form of thinking that embraces the ecology of a particular situation while demanding the flexibility required to work with dynamic systems. When one's mindset is fixed and inflexible, this required flexibility is not possible to achieve. By opening the mind to creativity, new (and flexible) solutions begin to emerge. Mindfulness offers this path to creativity, allowing students a new way of thinking to equip them to face wicked problems.

Considering the wickedness of the sustainability challenges that we face, Wiek et al. (2016) implore that,

> A large-scale educational transformation is needed to equip a new generation of professionals (not only sustainability professionals!) to address sustainability challenges through problem-solving approaches that integrate systems thinking, structured anticipation, value-laden deliberation, evidence-supported strategies, and strong collaboration across government, business and civil society. (p. 241).

Addressing the complications of sustainability challenges is thorny, especially when skills pertaining to systems thinking, evidence-supported strategies, strong collaboration etc. are necessary. Mindfulness is one way to provoke the forms of attentiveness necessary to equip a new generation of professionals with these skillsets (Hensley, 2018b).

Mindfulness "begins with the simple act of paying attention with care and respect" (Barbezat and Bush, 2014, p. 95). Paying attention enables us to recognize and respond to the anthropogenic changes occurring in the environment such as algal blooms, erosion, storm water management, and waste management. Sustainable development is a wicked problem in that it is not easily defined, it impacts multiple stakeholders in different ways, and solution attempts can create more unintended problems. Mindfulness is one way to mobilize the level of attention necessary for responding to existing challenges. George Dreyfus points out that mindfulness "is a way of being in which one is highly aware (of what is inside and outside in the environment) and focused on the reality of the present moment" (In Barbezat and Bush, 2014, pp. 95–96). In this way, mindfulness expands our inner and outer perception, enabling us to attend to elements that we may not otherwise see pertaining to wicked problems. In fact, mindfulness allows our discrimination to be more refined because we "are not bringing a prejudgment to the situation" (Barbezat and Bush, 2014, p. 98).

Mindfulness enhances one's ability to analyze, solve, and tolerate the wicked problems related to sustainable development. Wendell Berry refers to this analysis and solution generation as "solving for pattern" in which a good solution is "in harmony with … larger patterns … [and] improves the balances, symmetries, or harmonies within a pattern … rather than enlarging or complicating some part of a pattern at the expense or in neglect of the rest" (Berry, 2003, p. 272). One who is mindful views the world more expansively and systemically and with more patience. Mindfulness not only expands one's viewpoint and ability to piece together solutions, it builds tolerance with the unknown. Instead of seeking out quick and efficient solutions, sustainability challenges often require patience and the ability to tolerate uncertainty. Mindfulness can increase comfort with the unknown and promote clear-eyed-solution-thinking in the midst of chaos. Acceptance of the unknown and seeking expanded viewpoints promote optimal navigation through various forms of discomfort. Mindfulness has transformative capacities that "can turn discomfort into inquiry" (Barbezat and Bush, 2014 p. 99).

In the context of sustainable development, we are more likely to successfully navigate complexities when our inquiry is fueled by discomfort. Pursuing sustainability in a culture driven by unsustainable economic self-interests inherently generates discomfort through value conflicts that emerge. Two examples of these values conflicts are ecological integrity versus personal wealth and serving short-term self-interests versus serving long-term communal

interests.

To promote sustainable development, it is imperative that higher education enables students to move beyond the pre-programmed, quick, shortcut decisions that characterize the almost instinctual ways in which we process information. Rob Nixon (2011) declares that "one of the most pressing challenges of our age is how to adjust our rapidly eroding attention spans to the slow erosions of environmental justice" (p. 7). In other words, the slow destruction of the natural world is becoming less apparent to us as our attention spans dissolve. We must find ways to revitalize our ability to pay attention. Instructors should slow down and see how students understand complicated and interconnected topics such as climate change, hunger, poor water quality, and air pollution. Amel et al., (2009) point out that

> Luckily we are not locked in to making quick, shortcut decisions, and we are capable of adjusting automatized behaviors. With a bit of mindfulness, we can overcome shortcut thinking (which is actually a lack of thinking) and pay more attention to the choices before us. (p. 16)

Adjusting automatized behavior is an important component of transformative education and promoting creativity. By helping to shift paradigms and alter worldviews, mindfulness enables us to cultivate a heuristic for the unknown and to better deal with the multiplicity of sustainability challenges that characterize the Anthropocene, the "era of geological time during which human activity is considered to be the dominant influence on the environment, climate and ecology of the earth" (Anthropocene, 2019).

3. Creativity and sustainable development

> *By enabling students to make deeper connections, embrace and work through complexity, develop empathy and imagine new ways of thinking, being and acting in the world, we can prepare the next generation to envision and realize a more sustainable future.* (Eaton et al., 2017, p. 12, p. 12)

When tackling wicked problems, there are "few victories in a battle against immense odds" (Bush, 2011, p. 192). In the context of sustainable development, it is essential to use creativity as a weapon in the "battle." Creativity enables stakeholders to view problems from different perspectives, formulate new solutions, and make new connections. Creativity releases us to be more flexible in our thinking processes (Mani et al., 2014) and enhances one's comfort level with the unknown (Bush in Mani et al., 2014). This mental flexibility helps one to be resilient while developing novel ways to address the uncertainty. Lebuda et al. (2016) conclude that a "wide body of research has indeed shown that meditation training enhances creative thinking and creative performance as well as improves the ability to solve insight problems and facilitates creative elaboration" (p. 22). They add that mindfulness is a "complex phenomenon, composed of a set of different skills: the ability to pay attention to various stimuli (observation), the ability to focus with full awareness (acting with awareness), the ability to give immediate evaluation" (Lebuda et al., 2016, p. 23).

Creativity scholar Kleiman (2008, p. 209) suggests that originality, novelty, productivity and utility are characteristics typically identified in the realm of creativity. Positive psychologist Csikszentmihalyi, 2013 defines creativity as "any act, idea, or product that changes an existing domain, or that transforms an existing domain into a new one" (2013, p. 28). In HESD, creativity is fundamental to transcending old ways of thinking (Hensley, 2018a). Einstein states that, "we can't solve problems by using the same kind of thinking we used when we created them" (in Roggema, 2012, p. v). HESD requires that we equip and empower students to think and act differently while promoting pluralistic thinking. Looking at fields such as science provides insights into creativity.

Scientists are well-known as being logical. This logic pays off in many ways, but poses a problem when it comes to trying to solve wicked problems. The logical, or scientific, approach to problem solving is known as "convergent" thinking; the ability to view problems as logical and methodical. "Divergent" problems (i.e. wicked problems), on the other hand, require a different approach, as divergent problems may need to be viewed *illogically*. When it comes to solving wicked problems, though, the logical mind can be stumped. A person who has been taught to approach problems in a creative way will be able to tackle the difficulties presented by divergent or wicked problems. E.F. Schumacher points out that, "The logical mind does not much like divergent problems because it operates more easily with 'either/or, or yes/no … like a computer'" (as cited in Orr, 2002). Students, even those who are science-minded, need to be able to approach things both logically and, at times, in divergent ways. The way to teach students to do this is to provide education from an interdisciplinary platform.

Although the fields of science and art do not typically seem to overlap, it is, in fact, the ability to embrace disciplinary overlap that needs to be facilitated among students and professionals. Scholars Barbara Clark and Charles Button argue that the "role of the arts are essential in promoting critical inquiry of environmental awareness and sustainability" (Clark and Button, 2011, p. 42). Furthermore, the arts "promote cultural change, trigger the imaginative conscience and community action and act as a bridge towards scientific understanding and application of sustainable efforts" (Minor in Clark and Button, 2011, p. 43). Using mindfulness to trigger imagination (and hence, creativity) while building a bridge into scientific and humanistic understanding is at the crux of connecting creativity and sustainable development. When the humanities are interlinked with the natural and social sciences, we can view sustainability issues more accurately and allow sustainable development to move to the forefront of interdisciplinary dialogue across the academy. By "integrating seemingly incommensurate disciplines, a new type of [scholar] will be equipped with the necessary skills to solve 'real world' problems, which are not confined to a single discipline" (Conley et al., 2017, p. 166). This new form of scholar will be able to comfortably work between disciplines and tolerate uncertainty when pushing the boundaries of their own disciplinary knowledge.

With the onslaught of complex sustainability problems that now face our world, it is crucial for young professionals to think pluralistically and be able to "perform cross-disciplinary collaboration" (Conley et al., 2017, p. 165). The benefit of being able to work across disciplines when tackling complex problems cannot be overstated. Conley et al. (2017) suggest that "scientific and engineering solutions that attend to narrowly defined problems are unable to deliver strategic solutions that address the underlying causes of complex problems" (p. 166). One way to promote interdisciplinary capability is through "interactional expertise" which "refers to learning the 'language' of another expertise without having to master all the disciplinary methods and practices" (Conley et al., 2017, p. 166). Building the competency of the next generation to be able to "learn the language" of other disciplines is at the foundation of educating future sustainability practitioners.

In terms of cultivating the necessary competencies for students to deal with sustainable development challenges, the demand for young professionals who "possess both a wealth of knowledge in one system and the ability to perform cross-disciplinary collaboration" is increasing (Conley et al., 2017, p. 1). We need to empower our students with the creativity necessary to work across

disciplines while deepening their understanding in specific knowledge domains. In addition, we need to equip our students with the creativity necessary to tackle complex sustainability challenges. Mindfulness, according to Lebuda et al. (2016) may be both "directly and indirectly related to creative thinking and creative achievement" (p. 22). Creative achievement is mobilized by the implementation of solutions, which is tied to being innovative. Innovation springs forward through acting on our creativity (Lebuda et al., 2016). When it comes to curriculum and instruction, sustainability researchers Wiek et al. (2011) note that, "Sustainability education should enable students to analyze and solve sustainability problems, to anticipate and prepare for future sustainability challenges, as well as to create and seize opportunities for sustainability" (p. 204). Cultivating the sustainability competencies helps students to move beyond the confines of a singular discipline and transcend the fragmentation, which obfuscates sustainable solutions. The fragmentation of higher education is a product of the emphasis on disciplinary specialization. Karri Holley (2017) observes that "[s]ince university curriculum is commonly structured by academic disciplines, and faculty are socialized to their respective disciplinary norms, interdisciplinarity is a complex endeavor for colleges and universities" (n.p.). Even though it is a complex endeavor, interdisciplinary inquiry is essential to advance the field of sustainability studies.

3.1. Integrating mindfulness into higher education for sustainable development

Education works best when it combines hearts and minds (Alsop, 2005, p. 4, p. 4).

Although there is a gap in the literature that explores the intersection(s) of sustainability education and mindfulness, attention is turning that direction and the gap is narrowing. A research team from The Lund University Centre for Sustainability Studies (LUCSUS) in Sweden headed by Christine Wamsler et al. (2018) sites evidence of how mindfulness can transform cognitive functioning. Wamsler et al. (2018) state that, "Progress in neuroscience and neuroplasticity, described in both the scientific and popular literature, suggest that mindfulness can literally rewire our brains … and may be a necessary component of the conversion to a more sustainable society" (p. 144). When confronted by multiple sustainability challenges, rewiring our brains may be essential, especially when it comes to understanding the interconnectivities and interdependencies that exist in social, ecological and economic systems. Mani et al. (2014) add that major developments in "neuroscience have shown that the brain will respond to life experiences that are enriching and stimulating by expanding its neural networks as well as its levels of functionality; this ability, experience-based neuroplasticity, has significant implications for education" (p. 596). Perhaps this is why research on mindfulness "is increasing, which (implicitly) provides evidence of its positive effects and potential contributions to sustainability" (Wamsler et al., 2018, p. 145). As mindfulness research gains momentum, the overlap with sustainability education becomes more apparent.

Wiek et al. (2011, p. 204) posit that "sustainability education should enable students to solve sustainability problems, to anticipate and prepare for future sustainability challenges, as well as to create and seize opportunities for sustainability." Enabling students to solve sustainability problems is a unifying theme in HESD and it requires the cultivation of cognitive flexibility and sustained attention, both of which are enhanced through mindfulness.

To infuse HESD across the curriculum, there needs to be a focus on empowerment. According to UNESCO, education for sustainable development "empowers people to change the way they think and work towards a sustainable future" (Blessinger et al., 2018, n.p.). Education for sustainable development involves "reorienting the education systems … to help people think and behave in ways that foster a more sustainable planet (Blessinger et al., 2018, n.p.). Helping people think and behave in ways that foster a more sustainable planet takes work and utilizing mindfulness is one important way to mobilize this effort.

There are multiple ways to incorporate mindfulness into higher education (Barbezat and Bush, 2014; Mani et al., 2014; Bush, 2011; Hensley, 2018b). These possibilities range from building silent reflection into a class period to walking a labyrinth before and after a learning experience (Compton, 2002; Bush, 2011). Regardless of the material, mindfulness can help students to become more ready to learn than they would be otherwise. Mindfulness can help a learner to better focus, assimilate information, and identify ways to apply newly learned content (Hensley, 2018b). In this way, mindfulness helps to teach students how to learn. Thomas (2016) insists that "teaching approaches must focus on elements relating to the process of learning, rather than the accumulation of knowledge … which provides students with the opportunities to learn to think, specifically 'how to think' rather than 'what to think'" (Thomas in Rammel et al., 2016, p. 341). Shifting focus to the process of learning, instead of focusing on the content to be learned, is an important transformation that needs to happen within all levels of education (Lebuda et al., 2016). Mani et al. (2014) proclaim that for "educators, the message is clear: the era of rote learning and of brain-deadening, penalizing pedagogies is over. Education is not, and cannot be, about filling the mind with facts, and fulfilling the demands of the market place" (p. 596). The importance of teaching how to think instead of what to think becomes even more evident in the realm of sustainability education. Educational philosopher Neus Evans and Snowy (2016) adds that, Sustainability pedagogies originate from the broader concept of student-centered teaching, based on the premise that active forms of pedagogy improve student cognitive and affective outcomes. The reason for this, it is argued, is a shift in educational paradigm from one that focuses on teaching and the content to be taught, to one that focuses on learning and what the learner is doing. (p. 446).

Incorporating mindfulness into education helps shift the emphasis from the content matter to the learner and what the learner is doing. The lived experience of the student in the educational milieu becomes the focus of a mindfulness-based epistemology (Hensley, 2018b). Due to the rapidly evolving body of knowledge associated with sustainability, students need to learn how-to-learn instead of focusing on memorizing facts. Students need to learn to make sense of their world and become deeply engaged in the learning process. When paired with mindfulness, HESD will minimize bored or anxious students. Instead of being bored or anxious, students will exhibit the qualities of inquiry and wonder associated with optimal learning.

Within the realm of improving educational experience through mindfulness, HESD does not solely rely on summative (outcome-based) assessments; successful implementation also includes assessing a student's ability to utilize multiple forms of inquiry (formative assessment). Within this paradigm, an active learning process will be valued. I argue that within a mindfulness-based sustainability education paradigm, classrooms will be exciting places of knowledge exploration and production founded on principles of sustainability. Educators and philosophers who embrace sustainable education will recognize the capacity for positive change that exists within schooling that provides students with the tools to think critically, transform their lives, respect other people and organisms, while honoring their ancestors and their successors.

In *Contemplative Approaches to Sustainability in Higher Education*, authors Eaton et al. (2017) explore a set of capacities pertaining to

mindfulness:

> [T]he ability to pause, to pay close attention, to listen, and to remain silent as well as the capacity for self-observation—to notice and be present with one's states of mind, body, and emotion—and to deepen curiosity and openness to intuitive knowing [are all capacities of mindfulness]. These capacities point to a constellation of ways of learning that we are calling contemplative inquiry. (p. 10)

Contemplative inquiry occurs when the learner is both relaxed and alert while ready to closely attend to the information at hand. Being able to closely attend to the information at hand is the hallmark of mindful education for sustainability. Being fully present and attentive to new ways of thinking and doing are characteristics of mindfulness that assist one in converting discomfort and uncertainty into inquiry. The new ways of seeing tied to contemplation incorporate awareness and creativity in a way that moves beyond what educational philosopher Maxine Greene referred to as "the crust of conventionalized thought." In other words, contemplation enables us to uncouple from previous ways of seeing, so we can think outside of traditional modes of inquiry, leading to transdisciplinary thinking and action.

4. Conclusion

In the realm of HESD, mindfulness allows our students to think across multiple disciplines and use multiple forms of inquiry as a means to confront the many wicked problems in our communities. Mindfulness promotes the ability to tackle wicked problems through opening creative channels.

When students are able to "achieve the awareness that arises by paying attention on purpose in the present moment non-judgmentally," (Kabbat Zinn in Saarinen and Lehti, 2014, p. 1106) their capacity for understanding is transformed. Mindfulness promotes this shift in understanding and ultimately leads to creativity. Creativity engages the imagination and promotes the development of original ideas. Therefore, mindfulness and creativity symbiotically coalesce to enable future generations to tackle difficult sustainability challenges. Additionally, mindfulness increases the quality of learning for students while integrating mind, body, and spirit within a holistic framework.

The material discussed above provides a theoretical framework for incorporating mindfulness practices into the higher education setting, thereby promoting creative thinking among students. Mindfulness and creativity promote a state of active, open attention on the present that expands one's understanding of the way the world works and our role as humans within it. It is time to cultivate an ethos of mindfulness and creativity within and beyond the higher education classroom environment. Equipping students with the tools of reflection and viewing problems through multiple perspectives is a fundamental reason for thinking about how mindfulness can be broadly implemented in the higher education arena.

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