

Online Post-Secondary Learners' Stories of Emotional Regulation Through Mindful Self-Compassion

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Abstract

In rapidly changing contexts, adult learners are increasingly pursuing online learning. While technology enhances accessibility, it also presents challenges such as digital disarray, constant connectivity, disconnected instructional design, safety concerns, isolation, and the management of one's digital persona. Self-regulation of learning in this environment requires emotion regulation. The purpose of this qualitative narrative inquiry is to reflect on adult online learners' stories of mindful self-compassion as they experience it through a simple, personalized practice called a mindful self-compassion break. The inquiry poses the question: "What stories do adult learners tell about practicing mindful self-compassion breaks and their emotion regulation during their pursuit of online post-secondary studies?" Participant stories will illuminate self-regulation in online learning. Educational developers and instructional designers can use this to create interventions supporting online learners' self-regulation of learning, fostering autonomy, well-being, and academic success. Online learners can enhance their emotion regulation skills, boosting their learning efforts and overall well-being. Researchers can explore these narratives to expand knowledge of mindful self-compassion and emotion regulation among online learners and to disseminate promising practices. This inquiry received REB approval in October 2025; participant engagement began in November 2025.

Keywords: self-regulated learning (SRL), emotion regulation, emotional presence, online learning, mindfulness, post-secondary, higher education, digital learning, digital environments, mindful self-compassion, self-kindness, common humanity, isolation, self-criticism, affect, metacognitive strategies, emotional strategies, digital wellness

Poster

ONLINE POST-SECONDARY LEARNERS' EMOTION REGULATION THROUGH SELF-COMPASSION BREAKS

The diagram consists of two overlapping circles. The left circle is labeled 'Self-Regulated Learning (SRL)' and the right circle is labeled 'Mindful Self-Compassion (MSC)'. The overlapping area in the center contains two yellow circles labeled 'Emotion Regulation' and 'Self-compassion Break'. Arrows point from these central circles to a text box below.

Definitions: Self-Regulated Learning

"An active constructive process, in which students' thoughts, feelings and actions are self-generated and deliberately oriented to achieving personal learning goals, and which is influenced by environmental factors" (Tinsjero et al., 2024, p. 1)

Definitions

Mindfulness
Holding one's thoughts and feelings in balanced awareness (Neff, 2003).

Literature Snapshot: Self-regulated Learning and Online Learning

"While online or blended learning offers learners great flexibility and autonomy to learn at a time, a space and at a pace of their own choice, it also requires learners at all ages to develop and utilize some level of self-regulated learning to benefit from their virtual or remote learning environments" (Xu et al., 2022, p. 2).

Challenges include:

- Digital Distraction
- Being "always on"
- Disconnected Instruction Design
- Safety
- Isolation
- Digital Persona

SRL includes:

- Personal
- Behavioral
- Environmental
- Managing motivation and affect

This inquiry: "What stories do learners tell about practicing mindful self-compassion breaks and their emotion regulation during their pursuit of online post-secondary studies?"

1. See Hsiao, A., & Lo, M. (2023). Digital Wellness Framework for On-Line Learning. Canadian Journal of Learning and Technology / Revue canadienne de l'apprentissage et de la technologie, 49(3), 1-26. <https://doi.org/10.21462/cjlt.v49i3.1>
2. Trujano, C., Naya, E., Villar, E., & Martínez-López, J. (2020). Classic and modern models of self-regulated learning: Integrative and componential analysis. Frontiers in Psychology, 11-19. <https://doi.org/10.3389/fpsyg.2020.1307474>

Significance

Adult online learners' experiences of self-compassion breaks will help inform various online education stakeholders regarding self-compassion and emotion regulation for learning.

- Designers - integrate mindful self-compassion into online design to support learner autonomy, well-being, and academic success.
- Learners - practice mindful self-compassion for increased emotion regulation, leading to greater learning and well-being.
- Researchers - develop quantitative, mixed methods, or additional studies to help inform online learning communities concerning emotion regulation and mindful self-compassion.

Participants

Students aged 18 or older who are enrolled in an online post-secondary program of study in Canada will be invited to participate.

Research Design

Narrative Inquiry:
This qualitative inquiry will take the form of a narrative inquiry focusing on several participants' stories of practicing mindful self-compassion breaks, with relation to their emotion regulation, while pursuing post-secondary studies online.

Features of the study:

- Specificity Instead of Generalizability
- Depth and Transformative Power

Participant Engagement

- 45-minute learning activity - Mindful self-compassion breaks
- Online self-assessment for self-compassion
- 1 Journal activity, 2 Interviews

Please scan the QR code and complete the short form if you want information on participation, or to connect with the researcher.

Introduction

Online post-secondary learning is more sought after and available than ever; however, evidence-based support for learners to become sufficiently self-regulated for their success in these environments has not kept pace. Emotion regulation, which is an aspect of self-regulated learning, is essential whenever learners need to learn something new or complex. Mindfulness practices have begun to be researched in relation to students' self-regulation and holistic well-being while learning online, but mindful self-compassion, which encompasses mindfulness while also incorporating self-kindness and common humanity in response to negative experiences, including difficult emotions, has not yet been researched in an online learning context.

There is strong evidence that mindful self-compassion benefits learners in face-to-face learning, and there are aspects of online learning that might mean that mindful self-compassion could particularly support learners' emotion regulation in these contexts. The mindfulness component of mindful self-compassion differs from broader concepts of mindfulness in that it focuses on awareness of negative thoughts and feelings, while mindfulness in general refers to the ability to pay attention to *any* experience (positive, neutral, or negative) with equanimity (Germer & Neff, 2022). The focus of mindful self-compassion is to meet oneself particularly during moments of pain or difficulty with kindness, and with understanding that one's painful or difficult experiences are part of common human experience. This creation of a compassionate mindset – one that is kind to oneself, not with the intent to change one's negative feelings, but instead to comfort oneself and to reduce one's sense of isolation by remembering that pain and difficulty are part of the human condition – can directly support emotion regulation. What remains to be explored is how learners describe mindful self-compassion in online contexts, and

whether and how mindful self-compassion practices might support emotion regulation in online learners.

Statement of the Problem

Contextual Challenges of Online Learning that Require Self-regulated Learning

Online learning, while making learning more accessible to people in all sorts of contexts, also presents challenges for individual learners, categorized by Palalas and Doran (2023) in their digital wellness framework for online learning as: digital disarray, time pressure, disconnected instructional design, digital safety and isolation, and challenges related to maintaining a digital persona. Any of the challenges inherent in online learning may be in addition to challenges due to personal and/or social factors shared by many adult distance learners, such as commitments to work and family that prompted them to seek distance learning, or socioeconomic factors that prompted them to seek a credential and/or skill set in order to better their financial situations, or personal factors such as a disability that prevented them from participating in in-person learning. Any of these challenges may impact self-regulation of learning (SRL) and/or prompt emotions that may be challenging to regulate. Palalas (2019) noted that “the current digital learning context is characterized by multiple challenges on our attention with people feeling digitally overwhelmed, experiencing information overload, as well as experiencing persistent distraction and chronic distractibility”, and that competing priorities and desires “lead to mental immobility, stress and frustration as the human brain rapidly switches from one task to another, resulting in inability to give enough attention to any of them” (p. 111). Zimmerman (2013) called for investigating self-regulation in computer-mediated contexts, noting that the trend of using computer-mediated learning “poses problems for reactive self-regulators but offers opportunities

for proactive self-regulators” (p. 145). In their meta-analysis of self-regulated learning interventions in online and blended contexts, Xu et al. (2022) called for more research into self-regulated learning strategies in online learning.

Emotion Regulation and Mindful Self-compassion for Learning Online

Emotion regulation is one aspect of self-regulation of learning (Anthonysamy et al., 2020; Zimmerman & Schunk, 2001). This inquiry focuses on emotion regulation as a potential benefit of mindful self-compassion for learners in online learning contexts, since mindful self-compassion focuses on responding to oneself during painful or difficult moments. For the purposes of this inquiry, “difficult moments” will refer to any kind of difficulty, internal or external, that involves negative thoughts or feelings. The difficulties that might prompt online learners to mindfully offer themselves self-compassion may be a combination of internal factors and external factors that interfere with self-regulation of learning. Mindful self-compassion specifically involves responding to moments of pain caused by isolation, self-criticism, and overidentification with present thoughts and feelings (see Neff, 2003; Germer & Neff, 2022). The cultivation of mindful awareness of negative thoughts and feelings, along with offering oneself kindness and reassurance that one’s difficulties are part of one’s common humanity, could support emotion regulation in learners who suffer from feelings of isolation, self-criticism, or permanence of negative feelings, in turn freeing them to renew focus on their learning tasks and goals.

Mindfulness and Mindful Self-compassion in Learning Environments

While research into mindfulness for attention and memory has been going on for many decades (e.g., Goleman & Davidson, 2017) and research into mindfulness in education has been

evolving in recent years, including mindfulness in digital learning contexts (e.g., Gruber & Henriksen, 2024; Jeffrey et al. 2024; Palalas et al., 2020; Palalas et al., 2024; Shanks, 2020) mindful self-compassion and education has focused on in-person learning (e.g., Akin, 2014; Arslan, 2016; Babenko & Oswald, 2019; Kotera et al., 2021). The exploration of mindful self-compassion and its impact has yet to be conducted in digital learning environments. More specifically, inquiry into the relationship between mindful self-compassion and emotion regulation among learners in an online environment has not yet been reported in the research literature.

Mindful Self-compassion and Difficult Emotions

Mindfulness is noted for supporting learners with emotion regulation (Meiklejohn et al., 2012). Mindful self-compassion comprises mindfulness, defined as holding one's thoughts and feelings in balanced awareness, while also incorporating elements of self-kindness and common humanity (Neff, 2003). In their seminal 2003 paper, "Self-Compassion: An Alternative Conceptualization of a Healthy Attitude Toward Oneself", Kristin Neff introduced self-compassion as:

being touched by and open to one's own suffering, not avoiding or disconnecting from it, generating the desire to alleviate one's suffering and to heal oneself with kindness. Self-compassion also involves offering nonjudgemental understanding to one's pain, inadequacies and failures, so that one's experience is seen as part of the larger human experience. (p. 87)

In order to be open to one's discomfort, one must practice awareness of one's thoughts and feelings. Neff (2003) defines the three aspects of self-compassion as (a) self-kindness –

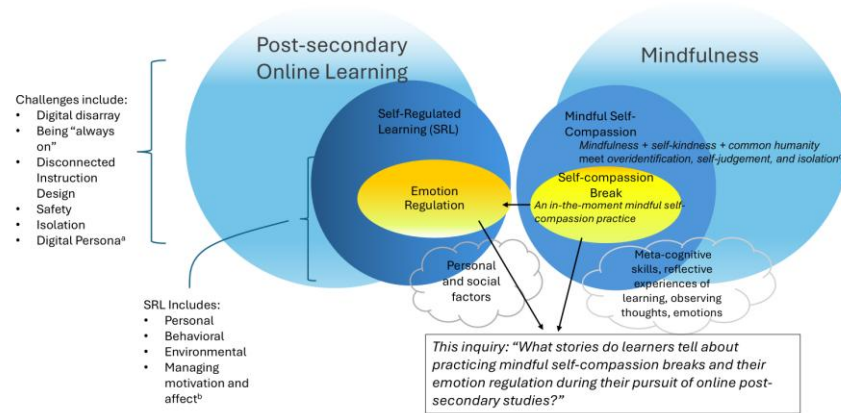
extending kindness to oneself rather than harsh judgment and criticism, (b) common humanity – seeing one’s experiences as part of the larger human experience, and (c) mindfulness – holding one’s painful thoughts and feelings in balanced awareness rather than over-identifying with them. Self-compassion is not to be confused with self-esteem or self-centeredness; in fact, self-compassion tends to support feelings and acts of compassion for others (Neff, 2003). Online learners face some struggles inherent to learning away from peers and instructors, which can exacerbate feelings or beliefs about the separateness of their experience. The skills of holding one’s thoughts and emotions in balanced awareness, while offering oneself kindness and understanding one’s own experience as part of humanity’s experience, might be of particular help to them, if consciously applied to challenges of isolation and negative emotions they may experience while attempting online learning. Mindful self-compassion has been demonstrated to have beneficial effects for learners in many in-person learning environments, but research is lacking into whether and how mindful self-compassion might help learners with emotion regulation while learning online.

Figure 1 shows the conceptual framework developed for an upcoming inquiry. Within online post-secondary learning, self-regulated learning is an area of much research and development of theory; emotion regulation is viewed here as an aspect of self-regulated learning. Within mindfulness, mindful-self-compassion is a specific kind of mindfulness, and mindful self-compassion breaks are a specific practice that anyone can do in times of self-criticism, isolation, or over-attachment to emotions. Challenges of online learning are drawn from the work of Palalas and Doran (2023) in their Digital Wellness Framework for Online Learning. Aspects of Self-regulated learning (SRL) are drawn from Tinajero, Mayo, Villar, and Martínez-

López's (2024) integrative and componential analysis of Classic and modern models of self-regulated learning. Definitions of mindful self-compassion and mindful self-compassion breaks are from Germer and Neff's (2022) guide, Teaching the mindful self-compassion program.

Figure 1

Conceptual Framework for this Inquiry



Purpose of the Inquiry

The purpose of this qualitative narrative inquiry will be to reflect adult online learners' stories of self-compassion, particularly as they experience and practice it through a simple practice they can tailor to themselves, called a *mindful self-compassion break*, and to reflect how they relate these mindful self-compassion breaks to emotion regulation during their pursuit of post-secondary studies online.

Research Question

This inquiry will seek to answer the question: “*What stories do adult learners tell about practicing mindful self-compassion breaks and their emotion regulation during their pursuit of online post-secondary studies?*”

Significance of Research

Stories of online post-secondary learners expressing how they relate mindful self-compassion to emotion regulation while learning will help to shine light on learners' self-regulation of learning online. This will provide insights and guidance for online education stakeholders. For example, educational developers and instructional designers may design informed interventions involving mindful self-compassion practices to support online learners' self-regulation of learning, especially their emotion regulation, which in turn may support learners' autonomy, well-being, and academic success. Online learners may add to their skill sets for emotion regulation, which in turn can support their learning efforts and their overall well-being. Learners struggling with distraction, self-judgment and a sense of isolation may find relief from negative emotions and a boost in positive emotions or non-attachment to emotions, which can in turn increase capacity to self-regulate as online learners in ways that were not previously available to them. Researchers may explore aspects from these stories in order to expand and refine knowledge concerning mindful self-compassion and emotion regulation in online learners; further research may in turn disseminate promising practices for online educators, learners, and their communities.

Findings from this research inquiry will highlight ways in which learners experienced emotion regulation through mindful self-compassion in order to support their self-regulation of learning while studying online. These findings can inform further research into any common

experiences specific to online learning, mindful self-compassion, and emotion regulation as an aspect of self-regulated learning. Finally, this research inquiry will add to the emerging body of research on mindfulness in online learning, with dimensions of self-kindness, common humanity, and emotion regulation brought into focus.

Limitations and Delimitations

Limitations are constraints to an inquiry based on the research methodology and design; they are inherent characteristics of the inquiry that limit, for example, the transferability or generalizability of findings. Delimitations are parameters set by the researcher that determine what is in and out of scope for the inquiry.

Limitations

This inquiry is limited by the possibility that many of the large number of potential participants may not be interested or have time to participate. The data gathered from adult online post-secondary learners who have interest or time may not be generalizable to adult online post-secondary learners who are not interested in the topic or who do not have enough time to participate. Participants may misunderstand or misinterpret the construct of mindful self-compassion, or other constructs that are integral to the inquiry. Participants may be novices at mindfulness and/or reflection on thoughts, emotions, and learning, and so may not be able to provide nuanced or highly granular descriptions of their own emotions and learning.

Additionally, this inquiry is a qualitative narrative inquiry, so by nature shares subjective stories that represent specific contexts and moments in time as experienced and expressed by individuals there and then. The researcher's own subjectivity, rapport-building, and interpretation will be entwined with the telling. As such, the inquiry is meant to reflect these

specific stories and prompt curiosity about mindful-self compassion and self-regulation of learning, particularly emotion regulation. Due to its specificity and depth, it will not be generalizable beyond this inquiry except as readers see themselves and their experiences reflected in the stories.

Delimitations

Adult online learners who are enrolled in an online undergraduate or graduate program of study at an online university in Canada will be invited to participate. The data collection and validation will be conducted during the months when participants are actively enrolled in courses, so that their observations and reflections are as current and as unfiltered as possible. Participants who are willing and able to reflect on how they respond to their own self-critical thoughts, feelings of isolation, and difficult emotions related to online learning will be sought. Participants who are high in self-compassion as indicated by the self-compassion scale, and who have also observed increases in their self-compassion over time, will be preferred for their ability to contrast and compare ways of responding to their thoughts and feelings, i.e. conscious expertise will be preferred over unconscious expertise, to facilitate communication and understanding. Participants very high in emotional dysregulation, or who are in an acute crisis, or who have experienced recent loss or trauma may be excluded, since participants will need to engage in self-reflection and explore their inner experiences without becoming very easily overwhelmed (Germer & Neff, 2022).

Definitions

Common Humanity

Seeing one's painful experiences as part of the larger human experience (Neff, 2003).

Emotion Regulation

Attempts to influence which emotions one has, when one has them, and how one experiences or expresses these emotions (Gross, 2015, p. 5)

Meta-Cognition

Thinking about one's own thinking.

Mindfulness (a)

Holding one's thoughts and feelings in balanced awareness (Neff, 2003).

Mindfulness (b)

"The awareness that arises by paying attention on purpose, in the present moment, and non-judgmentally" (Kabat-Zinn, p. xxxv, 2013).

Mindful Self-Compassion

Allowing oneself to be open to one's own suffering and to be kind to oneself; offering non-judgmental understanding to one's pain, inadequacies and failures; and seeing one's painful experiences as part of common human experience (Neff, 2003).

Mindful Self-Compassion Breaks

An informal mindful self-compassion practice that individuals can apply when they find themselves experiencing stress (Germer & Neff, 2022). Doing the practice entails calling to mind a moderately difficult situation in one's life and going through steps to mindfully notice how one feels, to offer oneself kindness, and to see this experience as part of the larger human experience. Individuals tailor the language and gestures (it typically involves soothing touch such as putting one's hand to one's heart or cheek) to what is authentic for them; individuals choose what helps them feel safe and cared for.

Online Learning

Learning that is enabled by the use of the internet.

Self-Kindness

Extending kindness to oneself (Neff, 2003).

Self-Regulated Learning (a)

When learners are aware of relationships between regulatory processes/responses and learning outcomes and systematically use regulatory processes to achieve their academic goals, through metacognitive, motivational and/or behavioral strategies (Zimmerman, 1990).

Self-Regulated Learning (b)

“An active constructive process, in which students’ thoughts, feelings and actions are self-generated and deliberately oriented to achieving personal learning goals, and which is influenced by environmental factors” (Tinajero et al., 2024, p. 1)

Chapter Two: Literature Review

Self-Regulated Learning and Emotion Regulation in Learning Environments

Self-Regulated Learning

Self-regulated learning can lead to desirable outcomes for learners. Models of self-regulated learning have been proposed and developed over several decades, and emotion regulation has been threaded through these models as an aspect of self-regulation of learning. A body of research into self-regulated learning began in the 1980s and 1990s with Zimmerman and Boekarts, and was influential on educational psychology (Tinajero et al., 2024). More recent research into self-regulated learning extends to more detailed/situated focuses; more weighting on affective-motivational states and their regulation; more implicit activity; and attention on

interindividual functioning as much as individual functioning. In their comparative and integrated description of the self-regulated learning models used in current empirical research, Tinajero et al. (2024) stated that self-regulated learning has been broadly defined as “an active constructive process, in which students’ thoughts, feelings and actions are self-generated and deliberately oriented to achieving personal learning goals, and which is influenced by environmental factors” (p. 1), and categorized the various models as classic and modern. They noted that the models proposed by Zimmerman from 1989 to 2000 are among the most widely cited in SRL research (2024). Zimmerman’s Triadic Analysis of SRL outlined three sources of influence that should be considered in education: personal (including self-perception, knowledge of one’s own regulatory processes, and affective processes), behavioral, and environmental (Tinajero et al., 2024, p. 2). Another set of models they examined is those developed by Boekaerts, which also had an important influence on educational psychology (2024, p. 3). Boekaerts’ models paid more attention than some other models to monitoring and directing emotions. Boekaerts’ adaptable learning model delineated two alternate processing modes, mastery and coping, which correspond to the principal motives of the student when confronted with a learning task, and in which students experience positive emotions when their appraisal of the task matches their appraisal of the resources available to them to complete it, while they experience negative emotions and direct their energies to coping and well-being when they appraise their resources to be incongruent with the learning task (2024, p. 4). Boekaerts’ model highlighted students’ attempts to remain focused on learning tasks and goals despite obstacles that may arise, which would involve, among other strategies, strategies for managing emotional reactions associated with difficulties in completing the task (2024, p. 5). Pintrich is another of the

classic authors who influenced the modern understanding of SRL; Pintrich's *Motivated Strategies for Learning Questionnaire* is stated by Tinajero et al. to likely be the most widely used scale to be used internationally to measure SRL (2024, p. 5). In Pintrich's model, emotions related to self-regulation for learning are described in terms of *feelings of knowing* and *judgements of learning*, and the selection of strategies for managing motivation and affect are part of the control phase of the model (2024). This inquiry will add to the research into affective-motivational states while linking mindful self-compassion and emotion regulation in a way that has not yet been explored.

Self-Regulated Learning Online

Self-regulated learning is particularly important for online learning because of the level of self-direction required of learners in this format. With the growth of online learning at all levels of education, for all ages, and in a variety of contexts, there have started to be inquiries specific to online self-regulated learning (e.g., Rovers et al., 2019; Winne, 2022). In their meta-analysis of the efficacy of self-regulated learning in online and blended K-12 and higher education contexts, Xu et al. (2022) defined self-regulated learning as “self-regulation processes and self-regulatory strategies applied in learning contexts” (p. 1) and categorized these as cognitive, meta-cognitive, resource management, and emotional strategies (2022, pp. 2, 6). Their analysis of 92 studies in 51 articles published between 2011 and 2019 found that SRL led to a positive and moderate effect on academic achievement in online and blended environments in K-12 and higher education (Xu et al., 2022). They noted that “the need to autonomously engage in the online learning process makes self-regulation increasingly necessary in online learning” (Xu et al., 2022, p. 2). They stated that “while online or blended learning offers learners great

flexibility and autonomy to learn at a time, a space and at a pace of their own choice, it also requires learners at all ages to develop and utilize some level of self-regulated learning to benefit from their virtual or remote learning environments” (Xu et al., 2022, p. 17). Finally, they found that combining self-regulated learning strategies was the most effective when it came to improving learners’ performance outcomes, and that some strategies were more or less effective than others if used separately (2022). The efficacy of different strategies varied by learner level, background, age, by subject, and by strategies used. For these reasons, continuing to investigate characteristics and combinations of different self-regulated learning strategies in online learning contexts is needed.

Metacognitive strategies are a type of self-regulatory learning process that overlap with concepts of mindful awareness of thoughts, which is integral to all forms of mindfulness, including mindful self-compassion. The benefits of metacognition extend beyond learning outcomes and academic performance into non-academic outcomes such as well-being and positive feelings. In their review of studies of learner self-regulation strategies and non-academic outcomes in blended learning environments, Anthonyamy et al. (2020) note that academic measures alone may not give a full measure of students’ performance, as these measures can capture short-term fluctuations that don’t reflect students’ overall learning. Non-academic outcomes included in the review were learner satisfaction, learner confidence and/or self-efficacy, student engagement and student interaction. The review found that metacognitive strategies were positively related to learning, learner satisfaction, and student engagement (2020). However, it also found that online university students use cognitive and metacognitive strategies that are ineffective in online learning environments, and that there remains little

research into cognitive and meta-cognitive strategies towards non-academic outcomes. As a result, the authors recommended that online educators cultivate self-regulation strategies in their learners since these strategies are essential in highly autonomous learning situations. This inquiry will draw on learners' metacognition in order to support self-kindness and awareness of common humanity, combining these aspects of self-regulation in a unique way which the participants may find to support them as learners.

Jansen et al. (2020) found that implementing a self-regulated intervention in massive open online courses was effective if it included instructing students about the importance of self-regulated learning and how to effectively engage in it. This kind of intervention not only enhanced learners' ability to finish a course successfully but also supported their engagement in course activities throughout their time in the MOOC.

Emotional Presence in Online Learning

Academic emotions in online learning have recently been topics of increasing interest in psycho-social educational research, particularly in the wake of widespread emergency online learning during the COVID-19 pandemic, such as in Lee and Kwon (2023), Rasalingam et al. (2024), Luo and Wang (2023), Setiyowati et al. (2024), and Liu et al. (2024). This heightened interest in emotions in online learning underscores the relevance of emotion regulation as an aspect of self-regulated learning in these contexts. This inquiry will build on the previous studies into online self-regulated learning while focusing on emotion regulation, including academic emotions, and linking these to the promising practice of mindful self-compassion.

In 2012, Cleveland-Innes and Campbell posited that emotional presence is a distinct presence in online learning; they note that “to engage in education innovation with no reference

to emotion and continue to assume that learners are little more than dispassionate thinkers, would be to miss a fundamental influence on education” (p. 270). While research into the influence of particular emotions in learning environments is ongoing, it is understood that emotions may help or hinder memory, attention, recall, recognition, and learning. Cleveland-Innes and Campbell (2012) noted that both Lipman in the definition of a community of inquiry, and Garrison, Anderson and Archer identify emotion as integral to the learning experience. Cleveland-Innes and Campbell emphasized negative emotions and the period when learners are transitioning to online learning, stating that “thoughtful consideration of emotions and possible facilitation strategies in response to negative emotions during the online adjustment process are both timely and important” (p. 273). They found that emotion for students was present when they discussed online learning experiences and while engaging in online learning and submitted that emotion is experienced by online learners in areas beyond the expression of social presence. Cleveland-Innes and Campbell (2012) concluded that:

Emotion may constrain learning as a distracter but, if managed, may serve as an enabler in support of thinking, decision making, stimulation, and directing. Online learning is replete, not fraught, with emotion. (p. 285)

Emotions remain difficult to define and detect and research on emotion in education continues to develop. In online contexts, emotional cues may not be easy to perceive in real-time due to their embodied, gestural, non-verbal, internal and physiological aspects. In their 2020 review of journal publications on sentiment analysis, Zhou and Ye (2020) noted that text-based sentiment analysis has advantages over other means of gathering sentiment or emotional data, since it can be conducive to application in teaching environments. Zhou and Ye’s (2020) review found that

teachers and educators were the main target of most sentiment analysis research, followed by administrators and decision-makers, with only 17% of research focused on learners, and only 17% of research focused on examining the relationship among sentiment, behavior, performance, and achievement. With regards to academic performance, emotional awareness and feedback were found to have a positive effect on students' performance (Arguedas et al., 2018, cited in Zhou & Ye, 2020). Zhou and Ye (2020) conclude that while little is still known about specific patterns among sentiments, behaviors and performances, "behavior and performance are highly correlated with learners' sentiments" and "it is recommended to incorporate sentiments into the learner model to improve awareness and adjustment ability of the learning system, thereby further enhancing the learner's experience" (p. 9). Further, they note that none of the 41 studies that they reviewed explored the relationship between sentiment, motivation, and cognition, and that the impact of demographic characteristics such as gender, age, and academic background on learners' emotions, behaviors and performance remains unclear and warrants research.

Mindfulness and Post-secondary Learning

Research into mindfulness and post-secondary learning started garnering attention in the 1990s with a handful of studies into topics such as teacher mindset (Brown, 1999), college student self-actualization and stress (Janowiak & Hackman, 1994), college student achievement (Hall, 1999), and college student experience (Trunnell et al., 1996). Research continued in the 2000s with studies into social work education, nursing/health education, counselor/psychotherapist education, and critical pedagogies (Grepmaier, 2008; Orr, 2002; Poulin et al., 2008). There were only occasional examinations of meditation in a broader context of post-secondary education (Rockefeller, 2006). However, notably for this inquiry, during this

period interest in meditation and learning was starting to occur, with, for example, Tang et al. (2007) finding that even short-term meditation training resulted in increased self-regulation and attention span. Research expanded in the 2010s with some more studies into various levels of education and contexts, still with a focus on students in health sciences, on stress reduction, and on student wellness (Broggi et al., 2016; Rizer et al., 2016), but also starting to include topics of pedagogy and learning (Schwind et al., 2017), and learner cognition (Ching et al., 2015). In the 2020s, research in mindfulness in post-secondary has continued to emphasize managing student stress and anxiety (Collins, 2024; Leslie et al., 2020; Strout et al., 2024), along with studies into academic outcomes (Cavanagh et al.'s 2021 study into the impact of cognitive reappraisal on short and long-term learning), engagement (Azila-Gbettor et al., 2022), mindfulness training pedagogy (Crowther et al., 2020), compassion training for medical professionals (Sinclair et al., 2023), cognitive load, mindfulness and self-efficacy in students with and without learning disabilities (Bishara et al., 2022), and emotional and social factors in education (Kassie, 2023; Sewell, 2020). Some researchers have also been introducing newer topics such as entrepreneurial mindsets and behaviours associated with mindfulness training in post-secondary (Hosseininia et al., 2024; Karali et al., 2023; Yeap et al., 2021).

Mindfulness and Self-Regulation in Online and Digital Learning

Metacognition and mindfulness are related constructs that involve observing one's own thoughts. Metacognitive strategies can be considered self-regulation strategies that help learners monitor their own thinking and gain awareness of their own learning processes (Tinajero et al., 2024). Mindfulness is a broad, complex construct that typically involves observing one's thoughts, sensations, emotions, and context in a way that is oriented to the present moment (Lutz

et al., 2015). Lutz et al. (2015) present mindfulness as “a variety of cognitive processes embedded in a complex postural, aspirational, and motivational context that contribute to states that resemble one another along well-defined phenomenological dimensions” (p. 3), arguing that by rejecting a single definition and conceiving of mindfulness as a phenomenology of mindfulness practices, it can be compatible with multiple schemas across different disciplines, such as neuroscientific and contemplative models. Lutz et al. (2015) describe “attention-based, regulatory and self-inquiry training regimes cultivated for various ends, including well-being and psychological health”. In online learning, where the learner is predominantly self-directed, the purposes of increasing attention and working memory, increasing concentration, the ability to select salient tasks and/or screen out irrelevant or distracting information while keeping a task in mind, dereification (the ability to see one’s perceptions as perceptions and not as reality, resulting in less uncontrolled or reactive emotion) are especially relevant, as is the emotion regulation that can come from these. Neff’s focus within the broad construct of mindfulness meditation is on self-compassion as an internal ally and alternative to isolation, self-criticism, and rumination (Neff & Germer, 2018). The specific practice of mindful self-compassion breaks is meant for beginners in mindful self-compassion to practice self-kindness, common humanity, and mindful awareness of the present moment (Neff & Germer, 2018).

Lutz et al. (2015) note that the connections between mindfulness practices and Buddhist contemplative practices are complex and often problematic, both because the topic is relatively new to empirical research and because of issues that arise from practices and theoretical accounts being taken up and appropriated within Western contexts and theories. Further, Lutz et al. (2015) note that the nature of mindfulness has already been debated within Buddhist sources for

centuries, which adds complexity to the discourse and research, depending on the sources, definitions, and practices being explored.

More recently studies of mindfulness and learner self-regulation in online higher education have begun to emerge. In their systematic review into the relationship between mobile learning and self-regulated learning, Palalas and Wark (2020) note concerning self-regulated learning that proactive processes are needed to leverage learners' advantageous motivational feelings and beliefs, as well as metacognitive strategies, and concerning mobile learning that:

How people use technologies (and are often expected to use them) may increase efficiency and effectiveness of accessing and interaction with information, but may also affect the autonomy of the learners, motivating or demotivating them, and thus impact their learning process and outcomes. (p. 152)

Palalas and Wark (2020) acknowledge both that advancements in digital technologies have enhanced the scope of mobile learning and its accessibility, while the same technologies have in many cases become intrusive and shaped the experience of learning. Beneficial combinations of self-regulation strategies and mobile learning were a common theme in three-quarters of the studies that the authors reviewed: either mobile learning and self-regulated learning enhanced other learning factors, or mobile learning improved self-regulated learning. It was the affordances of mobile learning - e.g. personalization and flexibility - that were found to be related to improved self-regulated learning, while the use of mobile devices themselves had a neutral or inhibitory effect on self-regulated learning. The implications for educational stakeholders were that mobile learning and self-regulated learning most significantly enhanced learning outcomes when they were used intentionally and integrated sequentially in ways that

supported learners towards self-determination; that privacy and digital safety needed to be more actively considered by educators; and that relevant, validated theory on ever-advancing mobile technologies and pedagogies that include learner-centered participatory activities should be the foundation for research and practice in mobile learning. Palalas and Wark also noted that only one qualitative study was directly relevant to the parameters of their review, meaning that more research into complex relationships between mobile learning and self-regulated learning would bring crucial insight to the academic and education communities.

Mindfulness in online learning has begun to be understood as human-centered digital learning that supports learner self-regulation and helps learners to cope with digital disarray. Issues of low mental health and burnout in learners and teachers, increases in pace of living and time pressures, online privacy and safety concerns, “hyperpersonal” dimensions of language and communication, as well as other changes in online communication are also noted as having harmful impacts on learning experiences and well-being of involved parties (Palalas, 2019). Of the relevance of mindfulness, Palalas writes:

In short, attention directs change. We are the architects of our own brain and can use intentional practice to shape the direction and plasticity of our brain, and along the way, new brain and mental habits can be formed. This ability is essential to our well-being as well as to our ability to learn, both at conscious and unconscious levels. Integrating mindfulness practices that strengthen our self-regulation of attention, awareness, and emotion, while connecting us to our innate knowing and to our surroundings, can have a profound impact on learners’ experiences both in class and beyond. (p. 115).

Mindfulness increases psychological safety and emotion regulation. Palalas notes that “although some level of stress may improve motivation, feeling safe and secure is critical to thinking abilities” (p. 117), and consequently, that digital learning environments, with their social distancing and lack of opportunities for co-regulation of the autonomic nervous system, present threats to the learning environment. In online learning theory and learning theory in general, understanding is advancing concerning the cruciality of social aspects of the mind and learning.

Mindful Self-Compassion in Learning Environments

A range of desirable effects are related to mindful self-compassion in face-to-face post-secondary contexts. Relationships between self-compassion and student well-being or academic performance have been researched in at least two dozen studies, some focusing on students in specific disciplines such as sport science or medical students (Babenko & Oswald, 2019). Other studies have found positive relationships between self-compassion and emotional self-regulation (Martin & Kennett, 2017), and between self-compassion and motivation (Kotera et al., 2021; Williams et al., 2008). Long and Neff (2018) found that self-compassion was associated with reduced self-presentation concerns and increased student communication behavior. Several studies have shown a negative relationship between self-compassion and procrastination (Barutçu Yıldırım & Demir, 2019; Williams et al., 2008; Yang et al., 2021). In their study on mindfulness, self-compassion, resiliency and wellbeing in higher education, Egan et al. (2022) found that participants who had higher levels of mindfulness, self-compassion, consideration of future consequences, and resiliency had both better academic performance and decreased procrastination.

Some researchers have focused on relationships between self-compassion, self-perception and emotional self-management in college and university students; for example, Dundas et al. (2017) found that short-term training in self-compassion increased healthy self-regulation in students. Arslan (2016) found positive relationships between healthy interpersonal problem-solving, agreeableness, and self-compassion in university students, and that low self-compassion was correlated with negative interpersonal problem-solving approaches and negative personality traits. Akın (2014) related self-compassion with increased skills such as problem-solving and proactivity. In their meta-analysis of the relation between self-compassion and self-efficacy, Liao et al. (2021) checked the positive association between self-compassion and self-efficacy, and found that, across 60 studies, clinical interventions that cultivate self-compassion may be conducive to one's sense of self-efficacy. The association was larger in non-students than in students, but research is lacking into why this might be.

Poots and Cassidy (2020) note that academic stress is a problem of global proportions since education is a global priority, and that academic expectations are a major cause of student stress, which in turn negatively affects students' well-being. In their study on academic expectation, self-compassion, psychological capital, social support and student well-being, they found similarities across Eastern and Western cultures and found that self-compassion was a significant mediator of well-being that decreased the negative effects of academic stress on students' well-being.

Taylor et al.'s (2022) classroom-based mindfulness intervention saw significant improvements in self-compassion, common humanity, and coping self-efficacy even when students perceived their stress as increasing during the semester. They concluded that a

mindfulness-based cognitive intervention in a college classroom setting could effectively build students' self-compassion and self-efficacy around coping with stress. This was, in the researchers' view, likely attributable to introspection, a sense of community that was fostered through the intervention, and emotion-focused coping strategies that were encouraged. Further, Taylor et al. (2022) note that common humanity is "important among college students because high levels of common humanity and low levels of isolation [defined here as perceiving one's experience as separate from others] are correlated with positive health habits such as engaging in physical activity, healthy eating, and stress management" (p. 147). If students in face-to-face environments perceive their experience as separate and they benefited from explicit intervention that built their perception of themselves as having common experiences, it can easily be imagined that students in online environments could benefit that much and more from heightening this consciousness of shared experience. That is why it is the hope of this current inquiry to reflect stories of whether and in what ways a heightened consciousness of shared experience and self-kindness through mindful self-compassion breaks contributes to emotion regulation for online adult learners.

Conclusion

Xu et al. (2022) contend that online learning environments have the potential to foster self-regulated learning. If necessity is a driver for learning, then this may very well be true: there is a need for self-regulation in the absence of other human bodies in the room focusing on similar tasks, and with the distractions inherent in online and mobile environments. Mindful self-compassion has been shown to support adult learners who are pursuing higher education in face-to-face environments. Self-compassion's combination of mindfulness, self-kindness, and

perception of common humanity may be especially well-suited to help learners address the challenges of online learning. Yet how learners in online settings might draw on self-compassion and implement it with relation to their studies has not yet been explored. This inquiry will be a first step in gaining insight into how learners perceive and experience the influence of self-compassion in their online learning journeys, with a focus on their emotion regulation. The findings will open the doors to further research to benefit and empower self-directed learners of the future.

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