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Exploring Intentions and Outcomes in a Contemplative Classroom: A Qualitative Study

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Contemplative practices are becoming increasingly present in college classrooms, yet structured studies of the processes and outcomes experienced by students are still quite limited. In this study, I explore change processes within a group of undergraduate students experiencing meditation for the first time as part of a 3-week course on Buddhist philosophy. The following is a qualitative analysis of pre- and post-course focus group interviews with students. The results indicate that intentions at the outset of the course play a key role in deciding how students subsequently approach and experience practice. This early trajectory affects their maintenance of practice as well as their personal development of positive characteristics commonly associated with practice (e.g., presence, acceptance, and meta-awareness). Contemplative educators are encouraged to draw their attention to how such processes might play out in their own classrooms as a means of maximizing the positive benefits of contemplative practice for their students.

Whenever I begin a semester with a short silent practice to open my classes, or welcome a new student to our Wednesday evening meditation sessions, I find I am always asking the questions: Will they accept this offering? Why are they here? Where, if anywhere, will it lead them? Engagement and commitment to practice is never linear. We struggle, leave, return, breathe, settle, and become unsettled, sometimes many times, through our development. The motivation behind this study was to explore that process more directly with students and find out what keeps them on, and off, the cushion.

There are a variety of ways to consider the above process. As teachers, many of us have our own experience, student anecdotes, etc. to draw from. There is a ballooning clinical literature on meditative practice and health and an emerging literature drawing on pedagogical perspectives and the use of contemplative practice in the classroom. Much of the published research focuses on the application of quantitative methodologies analogous to those used in the much larger literature on the effects of meditative practice in clinical populations, healthy adults, and young children. (For a recent review of this literature and some of the issues faced in conducting studies on meditative practice, see Davidson & Kaszniak, 2015.) These are all valuable areas from which to draw information, but, for reasons described in more detail below, some are more appropriate

and applicable for pedagogical contexts. As the literature on contemplative pedagogy is still in the emergent stage, there is a clear need to further explore the specific population of college/university students, rather than relying solely on anecdotal accounts from teachers or drawing generalizations from research conducted with other populations. Doing so will allow both teachers and researchers to better understand the unique motivations and experiences of students taking courses that include contemplative practice components and to better design courses and evaluative methods tailored to this specific group.

CONSIDERATIONS FOR STUDYING CONTEMPLATIVE PRACTICES IN VARYING POPULATIONS

As a population of interest, college students differ from the aforementioned groups in important ways that make generalizing both methodology and findings from other populations difficult, if not inappropriate, for several reasons:

- While emotional distress, depression, and anxiety are increasingly present in higher education populations (Conley, Durlak, & Kirsch, 2015), it may be difficult to detect changes in these variables with measures that are commonly used to assess these variables in clinical populations.
- Participants in clinical studies of mindfulness often either self-select or are referred by a therapist/doctor to participate in programs that are tailored to specific concerns (e.g., mindfulness-based stress reduction [Kabat-Zinn, 2009]; mindfulness-based cognitive therapy for depression [Segal, Williams, & Teasdale, 2002]). While college students self-select as well, there is evidence to suggest that they are less focused on the therapeutic potential of mindfulness in their conceptions of such practice (Hitchcock, Martin, Fischer, Marando-Blanck, & Herbert, 2016).
- The environments of hospitals or clinics, the fact that teachers/trainers are often trained clinicians, and the structure of the programs on which many clinical studies are based are all quite different from the environments of contemplative practices enacted on college campuses. Researchers and teachers should therefore use caution when drawing parallels between or borrowing methodologies from the clinical and experimental literature for carrying out research in higher education settings.

That said, when studying contemplative practice in different clinical and non-clinical populations of varying ages, we should expect to see practitioners' intentions and experience overlapping to some degree—most notably in the area of stress management, where participants are seeking a means to better cope with stress (Van Gordon, Shonin, Sumich, Sundin, & Griffiths, 2014), slow an active mind (Hitchcock et al., 2016), promote positive affect (Yamada & Victor, 2012), or gain greater conscious control over emotions (Monshat et al., 2013; Burke, 2010). Across populations, the most common

theme that both draws people towards practice and leads them to continue appears to be a desire for greater self-regulation (for a full review see Pepping, Walters, Davis, & O'Donovan, 2016). While this may be a universal theme, the intention to seek greater regulation may differ from one group of people to the next: clinical populations may seek to develop better self-regulatory skills because deficits in self-regulation underlie the painful symptoms of most psychological disorders; in children the development of self-regulation is a foundational and ongoing process; and in college students, shifting towards greater independence in a new and stressful environment, the need for greater self-regulation may suddenly become much more instrumental. Within each of the above groups there are likely differences in goals, developmental process, and outcomes across a variety of other psychosocial factors that teachers using contemplative practice should be aware of in order to best tailor pedagogical practices and meet students where they are. We therefore should continue to establish a fuller understanding of college students' experiences with contemplative practice in the context of the classroom.

A CASE FOR QUALITATIVE STUDIES OF CONTEMPLATIVE PEDAGOGY

One means of advancing our understanding of the effects of contemplative practices on college students is the use of qualitative and mixed-methods study designs. Qualitative studies provide valuable information in new areas of research because, by design, they generally avoid the imposition of assumptions about participants' experiences and proposed outcomes (Denzin & Lincoln, 2011). Therefore, they allow that which is important to emerge from a direct discussion of participants' subjective experiences. Rather than assume *what will happen* or *how it will happen* for students, qualitative methods leave us open to more direct interpretations of processes and outcomes that may not be readily apparent in highly controlled quantitative studies. Researchers may then be better equipped to follow from these early accountings of "what it is like" with further descriptive qualitative work and/or more contextually informed quantitative work with which we can further legitimate the field.

Qualitative studies on young persons' experiences of contemplative practices are relatively few in comparison with the clinical literature, and those that do exist focus mostly on young adolescents (Coholic, 2011; Rosaen & Benn, 2006; Khalsa, Hickey-Schultz, Cohen, Steiner, & Cope, 2012; Wisner, Jones, & Gwin, 2010) or graduate-level clinical and counseling students (Chrisman, Christopher, & Lichtenstein, 2008; Schure, Christopher, & Christopher, 2008; McCollum & Gehart, 2010). A review of the literature indicates few structured qualitative studies of the roles of contemplative practices in general (Asher, 2003; Holland, 2006; Sable, 2014) or meditation specifically (Monshat et al., 2013; Mahfouz et al., 2018) in the developmental experience of healthy college-age persons. This raises an important issue in attempting to understand the process and effects of contemplative practice in a population where they are increasingly being applied.

Of the above studies, those on adolescents and graduate trainees address the use of mindfulness meditation or the movement-based practices of yoga and qi-gong in the management of stress and the promotion of healthy coping strategies. These, however, represent only a small portion of contemplative practices that may be used in the classroom to generate specific outcomes related to mental health and well-being. While this information is useful for educators, it falls short in capturing the myriad practices available and the process of whole-person learning commonly discussed within the literature on contemplative pedagogy (see Barbezat & Bush, 2013; Gunnlaugson, Sarath, Scott, & Bai, 2014; Roth, 2006; Zajonc, 2008). Those taking a general approach with college-age persons draw on a variety of methods, primarily interviews or analyses of student journals, and, like this study, are directed towards uncovering the underlying process/experience of students engaged in contemplative practices. If it is our intention as contemplative educators to systematically gather and present evidence beyond our own experiences in an effort to garner support for contemplative pedagogy and studies, then expanding on the above works presents excellent places to start.

STUDY AIM AND APPROACH

The goal of this study was to expand the emerging qualitative literature on college students' experience of contemplative practices in the classroom—specifically, to gain a better understanding of the way students' motivations shape their experience and the effects of being in a contemplative classroom. With this aim, the intentions and experiences of a group of first-year college students participating in a religious-studies course on Buddhism with an integrated meditative practice component were explored.

In an effort to maintain a best-practices approach to qualitative research (as outlined by Elliott, Fischer, & Rennie, 1999), it is necessary to make clear my perspective as both author and researcher. My approach to the collection and analysis of data for this study was not value-free; however, attempts were made to bracket my own assumptions and limit the possibility that those assumptions might overly influence the participants or the direction of the course in question.

As the director of a campus contemplative studies initiative, I was particularly interested in the lived experience of students involved in courses that include contemplative practice components, as such information could inform the future directions of the initiative. While my goal was to avoid imposing *a priori* assumptions and remain as open as possible to those themes that students offered as most important, I did hope to address certain key research questions—what motivates students to take such a course? how might subsequent intentions affect their engagement in that course? and how do they understand their experience with practice?—whose answers could serve the development and application of contemplative pedagogical practices capitalizing on nuances of students' motivation and the developmental trajectory of their experience.

As a teacher of psychology with a background in clinical practice, I am familiar with the important role motivation plays in behavior and the ways in which different qualities of motivation may promote or hinder certain behavioral outcomes (Deci & Ryan, 2008). At the outset of the study, my primary interest was in coming to a better understanding of student motivation (why some of them approach contemplative practices) and experience (what happens when they engage in an intensive short-term training); I therefore possessed some explicit assumptions that intentions or motivations had some effect on outcome, but at the outset these assumptions focused more on the idea that students were likely seeking relief from stress, as this idea fit most readily with both my clinical experience in the use of mindfulness-based therapeutic techniques and my informal discussions with my students. While the following analysis does indicate that the instrumental goal of stress reduction was important to some students, other intentions also became apparent. These variations in intention proved to be important, resulting in differential experiences with and effects of the course.

METHODS

Participants

The participants were 10 first-year students (nine females and one male, ages 17-19, self-identifying as Latino [1], Asian [1], and White [8]) at a small residential liberal arts college, taking a 3-week intersession course with a contemplative practice component. Participants were purposefully sampled in accordance with recommendations by Corbin and Strauss (2008) and Patton (2015) to maximize the richness of gathered information about their experiences in the course. Of the 16 students enrolled, 11 volunteered for the study, and 10 completed both focus group interviews.

The Course

The course, taught by another instructor and titled *Zen and the Art of Going to College*, focused on the exploration of Zen Buddhism, following its evolution from India through China and Japan and into modern global culture through doctrinal, historical, cultural, and scientific analysis. Course work included readings from *What the Buddha Taught* (Rahula, 1974), *The Holy Teaching of Vimalakīrti* (Thurman, 2003), *Zen and the Art of Archery* (Herrigel, 1999), *Zen-Brain Reflections* (Austin, 2010), *Seeing Through Zen* (McRae, 2004), and the *Tao Te Ching* (Lao Tzu, 2006). Students kept a daily meditation journal and wrote two research papers. (The instructor and I decided at the outset of the course not to include the meditation journal in the research analysis, in order to allow students to maintain the privacy of their personal reflections.)

Regular meditation practice was a key component of the course. Students were taught a breath awareness meditation on the first day, and were instructed to “focus on their sensation of breathing” rather than adopting a particular approach or attitude towards their mental process. This practice was the one used almost exclusively during

the three-week term. Daily practice consisted initially of five minutes at the beginning and end of class; by the end of the first week this had been increased by several minutes each day, up to thirty minutes of practice per 3-hour class session. Students were also asked to practice outside of class to meet a total of 60 minutes of practice each day.

Procedure

Participants were recruited for the study on the first day of class. To avoid the possibility of differential treatment or feelings of coercion, the instructor was not told which students had agreed to participate. After completing informed consent forms, participants were split into two focus groups. Interviews, which occurred on the afternoon of the first day of the course and three days after the end of the course, were semi-structured. The initial interview queried students on the three key research questions described earlier (probing for clarification and elaboration when necessary) as well as their motivations for taking the course and what they hoped to gain, while the follow-up interview asked them to discuss their experiences in the course. Audio recordings of these interviews were then transcribed by a research assistant for later textual analysis; the transcripts identified participants with code numbers to allow for correlation of responses across the two interviews.

Focus groups were used in this study despite the relatively small number of participants and the potential for the negative effects of *groupthink* (MacDougall & Baum, 1997), as the format is also quite effective in helping participants clarify their thinking or more deeply explore issues they may have difficulty describing on their own (Kitzinger, 1995) and can promote cumulative stimulation and elaboration of ideas within the group (Fontana & Frey, 1994). From my own experiences working with contemplative practices in the classroom, I have noted that some students, especially those new to contemplative practices, have difficulty moving from their own interior experience to outward articulation of that experience. I was also concerned that some might incorrectly assume they were “the only one having trouble” and thus be less inclined to disclose those experiences they found unusual/difficult about the course in a one-on-one interview. The focus group therefore allowed the participants to *play off of* one another as well as collectively and more comfortably share the variety of their experiences in the class.

Analysis

Following the second focus group meeting at the close of the course, interviews were transcribed for analysis using NVivo 10 (2012) software. Statements about participants' experiences were then categorized into a set of independent/overlapping emergent themes. An inductive approach (Thomas, 2006) was used to explore the conceptual connections between these themes and codes drawn from the interview data. This was done through repeated readings of the data and involved the grouping into codes of meaningful (i.e. repeated/similar/elaborated) statements from the text. Temporal linkages between codes across the two interviews were then drawn to aid in establishing a process model. The author and an undergraduate research associate carried out

the open coding independently, followed by discussions of the coding process. These discussions were used to further refine codes, and to develop appropriate thematic titles that captured the structure of data encapsulated within the codes. This conversational process was necessary as the research associate was also in the early stages of training in qualitative research analysis.

The three themes described below follow, in part, from the semi-structured interview, which asked participants about their reasons for taking the course, what happened within, and how they were affected. The underlying codes emerged from the inductive analysis as broad descriptors of the most common and language-rich responses provided by participants; this way of modeling the data appeared most appropriate as a means of capturing the unfolding process of participant experience. Another independent qualitative researcher was recruited to review the data and assess the structure and appropriateness of coded categories.

RESULTS

The underlying narrative generated by the focus groups includes three themes that encompass students' progression through the course: *intentions*, *experiences*, and *outcomes*. Intentions emerged during the T1 interview, with subsequent responses fitting into two underlying codes: *stress relief* and *curiosity*; this theme comprises both students' motivations for taking the course and the more goal-directed concept of what they hoped to gain from it. The theme of *experiences* was represented by varying responses grouped into the emergent coded categories of *stress and self-criticism*, *acceptance*, and *present moment focus*; this theme, which overlapped somewhat between the T1 and T2 interviews, captures the *how* and *what* of student experiences. The three categories of experiences were differentially associated with two distinct categories of *outcomes* at T2, termed *engagement* and *disengagement*; these captured behavioral outcomes and were also directly related to cognitive outcomes of increased or unchanged *meta-awareness*, defined here as the tendency to describe interior experience and reflect upon the process of thinking. *Outcomes* were considered separate from experiences in that they were descriptive of students' responses/reactions to what was experienced in the course.

Briefly, students appeared to approach the course out of either a desire to learn a set of stress management skills or a general curiosity regarding Buddhism and meditative practice. While all appeared to experience some degree of self-criticism, those who approached the class out of curiosity were more likely to express acceptance of their experiences, both positive and negative. An attitude of curiosity and acceptance appeared to moderate students' outcomes, with those who expressed a greater degree of acceptance of difficulties more likely to still be engaged in meditative practice at the end of the course, have positive reflections about their experiences, and note an increase in meta-awareness. (A heuristic model of this process is provided in Figure 1.) A detailed discussion of the coded categories within the themes and their connections is provided below.

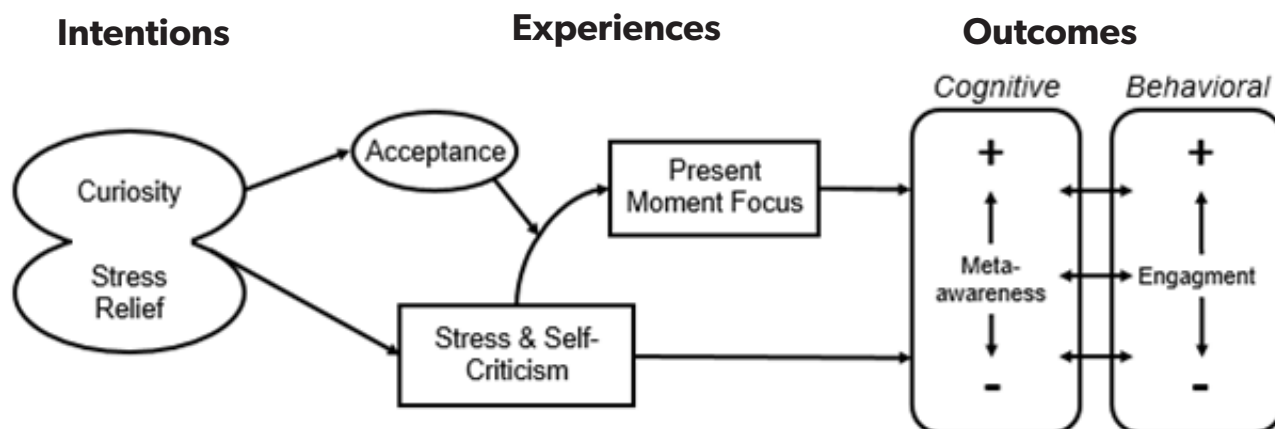


Figure 1. A heuristic model of the change process over time. Ovals = intentions/attitudes, rectangles = process experiences, rounded rectangles = outcomes of practice.

Intentions

Participants were drawn to the class for a variety of reasons. At T1, the majority spoke openly about the stressors and anxieties of student life, describing a sense of being overwhelmed with academic and social responsibilities and pressure to always be engaged in some activity. Learning meditative practice was seen by many as a means to manage stress and help them reduce what they experienced as a frenetic pace by “slowing down,” “taking time to just breathe,” and “becoming more focused.” The way in which stress and anxiety disrupts students’ sense of presence and the hope that meditation might provide some relief are illustrated by the following interview quote:

I can’t stop thinking about everything, and I feel that’s bad because we are so fast-paced all the time and sometimes you just need to stop and calm down and focus on the moment and the present, but I feel like we’re always thinking ahead or focusing on the past. Especially now in college that our lives are changing so much and we have so much stress because it’s so different than high school I feel like [meditation] is just a really beneficial thing at this point in our lives.

Some participants described meditation as a “tool” they might use to increase productivity and improve academic performance:

I’m like, I have fifty things to do, and it takes me more time to get started on the first thing because it’s all one bunch in my head. Maybe if I sat down and meditated before, maybe I could sit down and get it all done.

So if I could get good at meditation, maybe I could use that to just take a moment and kind of rejuvenate myself so I could finish the rest of my day.

While most students agreed with one another regarding their level of stress, a portion focused their talk of intentions on academic and cultural curiosity: “I wanted to do something out of my comfort zone that could expand my horizons. Sort of open my eyes to other cultures and that sort of thing.” These students were interested in the potential of the course to inform their interests in history, sociology, and anthropology or provide an opportunity to explore another faith tradition. Self-exploration, gaining greater self-knowledge, and even strengthening personal faith were expressed as intentions for participation. Whether those intentions were religiously oriented or directed towards secular goals beyond an exploratory experience was not specified.

EXPERIENCES

Discussion of *experiences* overlapped significantly between T1 and T2. At T1, participants had just completed their first class and, for the majority, their first experience with meditative practice. A portion of the T1 interview was thus devoted to exploring the initial experience, while at T2 the goal was to explore how participants described the process over the three-week course. As might be expected, discussion about experience within the course varied significantly from T1 to T2, illustrating how students moved from naivety and uncertainty to a richer understanding of meditative practice. Of particular note was the way in which discussion over the course of the T2 interview separated the focus group into two somewhat distinct groups characterized by their use of the language of *self-criticism* vs. that of *acceptance* and *present moment focus*. These two coded subcategories of *experiences* are discussed in further detail below.

The majority of participants began the course with a high degree of *self-criticism* regarding their ability to meditate; discussion focused on their assumption of a “proper way to meditate” which they felt unable to do effectively. This perceived inability varied from difficulty sitting still to the unusual experience of sitting on a floor cushion to trouble maintaining focus on their breathing. It also related directly to concrete assumptions, echoed by multiple participants, about the concept of “non-thinking,” which had been briefly discussed during the first class session; the notion of meditation as “clearing the mind of all thoughts” was common at T1, often described proximally to discussion of *stress* and *self-criticism* as a desirable alternative to students’ busy experience. These uncertainties about “non-thinking” and over-focus on the physical act of meditating are illustrated by the following quotes:

I just tried to follow what he said, but I just kept messing it up and that would get me off my focus and it was just...it didn't work out. It just didn't work out. I can't count when I'm trying to breathe.

I would just spiral out of control and then I would realize I was thinking about everything, and that I shouldn't be thinking at all. So that was hard.

I'm just, like, the whole time I wondered what everyone else is doing. “Am I doing this right?”

Despite these frustrations at T1, most participants had positive comments regarding the initial practices and were hopeful that they would improve as the course went on. These comments came mostly from participants who made fewer self-criticism statements regarding the practice or more hopeful statements about improving at the “skill” of meditation.

I looked up. It was close to about ten minutes, but I actually felt so much more relaxed after that. My shoulders weren't tensed up anymore...

The act of doing nothing is very comforting, and I really liked it. It's just...I wish I could do it more effectively, but I think that will come with time.

Being OK with where I'm at when I'm there: I'm really hoping that meditation works for that...maybe if you are just totally OK with yourself, and one with yourself, then you will have more success in the end.

At T2, *self-criticism* was still prevalent for several participants, though its language had changed somewhat from the initial focus on personal ability described at T1 and was now directed more towards the time commitment of regularly structured practice and, most noticeably for several participants, frustration that meditation was failing to relieve stress: “I think it got frustrating at times, especially when you weren't getting the results that you were told you were going to get from meditation.” These participants provided more negative comments about their practice experiences and were less likely to maintain regular practice times over the course. Frustration negatively affected their ability to engage in the journaling activity, as indicated by a noted difficulty in generating reflections of their experiences. At T2 there was a clear difference between those participants who focused on *self-criticism* and those who expressed attitudes of *acceptance* and *present moment focus*.

These attitudes appeared to be key components for those participants who expressed a positive experience in the course. Statements of willingness to engage with immediate experience or to recognize and respond to emerging frustrations with greater openness defined these categories: “Yeah...I sort of realized even if my mind's wandering, that's not wrong, and just by sitting and practicing meditation, that step in itself is beneficial, and that you've done all you can.” *Acceptance* and *present moment focus* were associated with more positively valenced discussions of experience and engagement with course assignments. These participants spoke more favorably about their experience with daily meditation practice and were less likely to describe feeling burdened by activities such as journaling and paper-writing.

As a final course activity, participants visited a Zen retreat center in the mountains of Eastern Kentucky. Many of them wished to discuss this activity, which included a morning teaching and practice with the resident priest and a silent hike in the surrounding forest, and they provided rich information about how they had internalized the course experience. While the majority provided positive feedback about the excursion, those whose general discussions about experience fit within the *acceptance* and

present moment awareness codes spent more time discussing it with richer language and were more likely to use descriptive terms regarding their emotional and interpersonal experiences of specific moments during the activity:

I took some pictures, and then I put my phone away, and I was just sitting there and just like, "Wow." And there was this moment when I was like, "Life is awesome." I just had this feeling of "I love being alive," and I was just looking and all of my classmates and everyone seemed to be really just, they just, everyone...

We were all together.

Those students who tended towards a higher degree of self-criticism and whose goals for the class were more skills-oriented tended to provide less rich descriptions of the temple visit. They spoke less, using more single-word judgments of what they had seen or done, and chose to focus on more superficial aspects of the experience, such as the weather.

OUTCOMES

At T2 it was clear that participants' responses to the course fit into two distinct codes: *engagement* vs. *disengagement*. While some overlap between coded categories existed, there was a distinction in how students talked about the effects of their course experience. *Engagement* was indicated by greater *acceptance* and *present moment focus* talk, greater maintenance of practice and course activities, and the richer self-reflection that was termed *meta-awareness*, while *disengagement* was characterized by continued *self-criticism*, less talk of *acceptance*, and less reflective and descriptive *meta-awareness* language.

Adopting greater *acceptance* and *present moment focus* attitudes during the course appeared to be key for promoting continued engagement in meditative practice and willingness to maintain it:

My mind still wanders, but I don't necessarily see that as wrong now because I talked to Dr. H who said that his mind wanders too, and I mean I guess it's why we're doing it is to help that. I mean, I've heard it takes years to perfect meditation. It might not ever get perfect.

Participants who reported less engagement experienced more frustrations associated with practice. The language they used when discussing these frustrations was often self-critical and involved negative judgments about their own abilities and some of the expectations for course assignments and activities:

By the end it became more of a burden to meditate...because I expected it to just eliminate my stress completely when it really didn't.

I was more enthusiastic at the beginning...and when it [journaling] was more repetitive, it kind of became more of a stressor, but it was easy to fluff things up, so...sorry.

Despite the persistent pattern of responses from T1 to T2 that connected *self-critical* judgments and *disengagement*, these participants did share some positive comments about their experiences. However, they discussed these experiences in more objective terms (i.e., with less *meta-awareness*), tending to focus on the activity as a whole, and provided more evaluative statements about the activities of the day rather than direct attention to interior experience, e.g., “We weren’t supposed to talk the whole way up, and then the way down...it was kind of like we were meditating, but I don’t know. When I was up there I just noticed there were a few moments where it was really cool,” versus this example of higher meta-awareness:

We hiked up this mountain...I was taking pictures because it was really pretty, but then I realized I wasn’t really seeing anything...So I just stopped, and I started looking, and I saw so much more beauty...with learning about the practice of living in the moment and meditation I think that changed the way I think about things in my classwork now.

It should be noted that nearly all participants reported difficulty in finding time to practice both during and after the course. Of those who did continue, many reported shortening their practice time, some to around 10 minutes on a regular basis and others to 1-3 minutes only when studying, feeling stressed, or considering important decisions.

DISCUSSION

This study provides some insights about novice meditators and adds to the growing body of research on the process and experience of contemplative practices among college and university students. Understanding how they engage with pedagogy that operates outside their normative experience may provide useful information for teachers implementing such practices.

While not entirely discrete, the pattern of responses indicated that *intentions* and *experiences* followed two general trajectories leading to *engagement* or *disengagement*. The majority of participants who approached the course with the intention of learning a skill to manage stress appeared more likely to experience frustration and remain self-critical about their practice. Those who started from a position of curiosity or were able to cultivate an attitude of acceptance towards their experience fared better at remaining engaged and active during and after the class. The long-term effects of these intentions and processes appeared to play a role in how students came to internalize their experience and facilitated in some a greater *meta-awareness* of experience.

Understanding and Working with Intentions

Intention, the reason why someone chooses to practice, is a key component of contemplative practice as it sets the stage for both positive and potentially negative effects on the

individual and others (Bishop et al., 2004; Shapiro, Carlson, Astin, & Freedman, 2006). Motivation and intention are often highlighted in the theoretical literature on meditative practice, but we still know little due to the lack of experimental work on their mechanistic role in the process (Dorjee, 2016). According to Wallace and Shapiro (2006), intention operates as a motivational force that precedes the affective, cognitive, and interpersonal outcomes of practice. Intention thus stands to color all subsequent outcomes and results in the promotion of either well-being or suffering. While a deontological discussion of how one best arrives at balanced intention is beyond the scope of this article, it is apparent that even non-moral intentions affect practice outcomes. Exploring the reasons why a student engages in practice (or takes a college course where such practices are taught)—their goals and desires in relation to self and other—is thus necessary if that practice is to be fruitful for the well-being of the individual and others. Teachers should therefore be deliberate in incorporating discussion or reflection on these topics into the process of the class to assist students in developing a richer understanding of their experiences. Doing so may promote positive engagement and outcomes for students and help teachers identify those who may benefit from a deeper exploration or reframing of their experiences as they unfold.

Acceptance and Meeting Students Where They Are

Acceptance and presence are common concepts in contemplative practice; they are used particularly heavily in discussion surrounding mindfulness meditation. It is often unclear whether cultivation of these states emerges out of *learning to* meditate or is a product of *learning about* meditation. A direct attempt to tease apart this possible difference with the interviewees was not made; however, there were some indications that participants recognized both concepts as core ideas in some areas of Buddhism. What is interesting is the clear counterpoint they played to the self-criticism and frustrations expressed by some participants. All four of these experiences—acceptance, presence, self-criticism, and frustration—are natural parts of any contemplative practice, and I do not wish to make a value judgment that the latter two should be avoided; doing so is contrary to the cultivation of equanimity towards experience. However, based on these responses, the failure to approach self-criticism/frustration with an attitude of presence/acceptance did appear to serve as a roadblock to remaining engaged in both the practice and the course.

The importance of acceptance as an antidote to self-criticism and negative affect is illustrated in the clinical research on mindfulness meditation. There is evidence that non-judgmental acceptance moderates the relation between awareness and the beneficial outcomes of mindfulness practice in persons suffering from borderline personality disorder (Peters, Eisenlohr-Moul, Upton, & Baer, 2013). While attention and presence are key foci of contemplative pedagogical practices, we should consider attitudinal processes and the cultivation of acceptance just as much, if not more, in bringing about positive development in our students.

Regardless of how we arrive at the use of acceptance and presence in practice, asking students to approach their experience with a willing, gentle, and open attitude may

go a long way toward promoting positive outcomes. Specifically, students should be actively encouraged to express their self-criticism/frustration/stress when such experiences arise, as those who feel pressured to focus solely on the positive or take more difficult experiences as failings may otherwise abandon the practice. Making this a shared process could be valuable: I noted that students in the focus group interviews were often quick to validate and reify one another's experience with the above.

Helping students work with the more difficult aspects of meditative practice is one area in which teachers should draw on their own developmental experiences; this is one reason why it is so important to have a contemplative practice of one's own, providing us with the means to observe and describe how we have approached our own frustration and self-criticism. Those with teachers of their own may draw upon the wisdom they provide as guidance through the process; if one does not have a teacher, there is no shortage of discussion on such difficulties in the wealth of practice manuals available (e.g., Chödrön, 2016; Hanh, 1976; Kabat-Zinn, 2009; Teasdale & Segal, 2007; Williams & Penman, 2011), including those specific to working with college-age persons (Barbezat & Bush, 2013; Rogers & Maytan, 2012; Rogers, 2016).

It is also important to keep in mind that not all roadblocks to practice arise from frustration with it. For many, past or current trauma can make contemplative practice painful, counterproductive, and potentially harmful. Teachers would thus be wise to explore the emerging literature on trauma-sensitive mindfulness training (see Treleaven, 2018; "Meditation Safety Toolbox," 2018). Doing so stands to promote a safe, healthy learning environment and potentiate personal growth.

META-AWARENESS AND ITS DEVELOPMENT

The most noticeable outcome, particularly in more engaged students, was the increased meta-awareness with which they discussed their experiences during meditative practice and other activities at T2: their descriptions, regardless of valence, were for the most part richer than those at T1. Some were more acutely aware of this change than others, identifying the positive effects of practice as means of more adaptively engaging with schoolwork or stressors. The finding that even short periods (in this instance, three weeks) of structured meditative practice can noticeably change how participants relate to their inner experience is not novel; indeed, it is in line with emerging evidence in the literature on contemplative practice indicating that meta-awareness is a key component of all theories of the change process associated with meditation (Bernstein et al., 2015; Dorjee, 2010, 2013, 2016). This improved capacity for attention and self-monitoring as a result of meditation training is also well documented (Dorjee, 2010; Lutz, Slagter, Dunne, & Davidson, 2008), often manifesting as improved performance on experimental attentional/perceptual tasks (Burg & Wolf, 2012; Jha, Krompinger, & Baime, 2007; Lutz et al., 2009; MacLean et al., 2010; Sahdra et al., 2011; Sanger & Dorjee, 2016).

This study provides one way to qualitatively understand the change process in developing greater meta-awareness via contemplative practice. The data here indicate that the richness of self-reflective language and attention to inner experience grow from a

practice supported by open acceptance and attention to the present moment. As students begin to engage in regular practice, they inevitably come in contact with the difficulties and frustrations associated with learning any new activity (greater awareness of mind-wandering, difficulty quieting the mind, a desire to perform well, etc.). Ironically, these very experiences of noticing are indicative of a newly expanding capacity for awareness, yet they may only be experienced as such when one adopts an attitude of openness and acceptance. If too much focus is placed on the instrumental goal of practice and the perceived thwarting of that goal by frustration, self-criticism, or a lack of change in stress, such experiences will likely lead to disengagement from practice. On the other hand, openness and acceptance set the stage for being present with the variety of experiences that emerge during practice, regardless of their valence. This “goalless” state helps foster continued engagement, which repeatedly situates the practitioner in a position of being present with manifold experience, which in turn increases the capacity of awareness. When asked to articulate their experience, the individuals with open, accepting attitudes to practice likely provide a richer explanation because they are aware of and have access to a greater store of interior and exterior information from which to draw.

It could be argued that a richer description of experience is simply the result of some people enjoying the activities of the course more than others and therefore having more to say. However, in this instance the difference between persons was seen less in the *amount* of what was said than in the *variety* of content and *depth* of reflection. Future researchers should consider continued exploration of this connection between levels of engagement and subsequent effects on how students develop meta-awareness and speak about their experiences; the records (journals, discussion, etc.) created in the contemplative classroom lend themselves well to qualitative analysis of the variations in content described above.

How to best cultivate greater meta-awareness through contemplative pedagogical practices is an idea worth considering, as doing so plays a fundamental role in the change processes we are attempting to enact. Following the route described here—considering how intentions shape experience and cultivating acceptance in an effort to help students explore and maintain engagement when facing the inevitable difficulties that arise—will likely promote the types of behaviors that result in greater meta-awareness. One means of better understanding how students move towards greater meta-awareness is noting changes in the complexity and depth of language they use when articulating experience; these changes may also serve as evidence for teachers to draw from when attempting to assess how students are affected by contemplative practice. Simply drawing students’ attention to how they write or speak when reflecting and how this process changes over time allows for a *dual reflection* which may promote greater conscious recognition of their own experience of change. In groups this process can occur naturally or be explicitly fostered through the activities of discussion and shared reading (see McCown & Billington, 2017, for a full discussion of this process). As many teachers—and many of the qualitative studies above—focus on contemplative writing or the use of journaling in contemplative pedagogy, there exists a rich store of information from which to draw. This information is helpful not only for establishing the value of contemplative practice and its effects on our

students; it may also, as in this study, help us to identify their developmental trajectories and needs and consider skillful ways of promoting positive outcomes.

Finally, it should be noted that this study is not without some limitations. The course focused exclusively on one contemplative practice (breath awareness meditation) and did so within the specific confines of exploring a varied literature with a common focus on Buddhism. However, even short-term meditation training has been shown to have positive effects on cognitive and physiological processes (Tang et al., 2007; Zeidan, Johnson, Diamond, David, & Goolkasian, 2010). The trajectory of experience described above is specific to a particular group of students within this particular milieu. Contemplative practices are manifold, and the depth with which they are employed as pedagogical devices varies widely from one situation to the next. However, the lived experiences described here do capture and elucidate some potential commonalities of experiential process when using contemplative practices in pedagogical settings: a group of students were presented with a practice and its underlying conceptions, with which they had limited knowledge or experience; they were asked to directly engage with that practice, and to explore their personal responses to that process; and there was a transitional experience that varied across persons but was not without a visible pattern. What emerges from an analysis of this process is a series of important themes that colored the process and formed that pattern. Future research or assessment should consider further exploration of these themes, as they may hold valuable information regarding the developmental processes associated with the use of contemplative practices in the classroom and beyond.

REFERENCES

- Asher, N. (2003). Engaging difference: towards a pedagogy of interbeing. *Teaching Education*, 14(3), 235-247. <https://doi.org/10.1080/1047621032000135159>
- Austin, J. H. (2010). *Zen-brain reflections*. Cambridge, MA: MIT Press.
- Barbezat, D. P., & Bush, M. (2013). *Contemplative practices in higher education: Powerful methods to transform teaching and learning*. San Francisco, CA: Jossey-Bass.
- Bernstein, A., Hadash, Y., Lichtash, Y., Tanay, G., Sheperd, K., & Fresco, D. M. (2015). Decentering and related constructs: A critical review and metacognitive processes model. *Perspectives on Psychological Science*, 10(5), 599-617. <https://doi.org/10.1177/1745691615594577>
- Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., ... & Devins, G. (2004). Mindfulness: A proposed operational definition. *Clinical psychology: Science and Practice*, 11(3), 230-241. <https://doi.org/10.1093/clipsy.bph077>
- Burg, J. M., & Wolf, O. T. (2012). Mindfulness as self-regulated attention. *Swiss Journal of Psychology*, 71(3), 135-139. <https://doi.org/10.1024/1421-0185/a000080>
- Burke, C. A. (2010). Mindfulness-based approaches with children and adolescents: A preliminary review of current research in an emergent field. *Journal of Child and Family Studies*, 19(2), 133-144. <https://doi.org/10.1007/s10826-009-9282-x>

- Chrisman, J., Chambers Christopher, J., & Lichtenstein, S. J. (2008). Qigong as a mindfulness practice for counseling students: A qualitative study. *Journal of Humanistic Psychology, 49*(2), 236-257. <https://doi.org/10.1177/0022167808327750>
- Chödrön, P. (2016). *How to meditate: A practical guide to making friends with your mind*. Mumbai, India: Jaico Publishing House.
- Coholic, D. A. (2011). Exploring the feasibility and benefits of arts-based mindfulness-based practices with young people in need: Aiming to improve aspects of self-awareness and resilience. *Child & Youth Care Forum, 40*(4), 303-317. <https://doi.org/10.1007/s10566-010-9139-x>
- Conley, C. S., Durlak, J. A., & Kirsch, A. C. (2015). A meta-analysis of universal mental health prevention programs for higher education students. *Prevention Science, 16*(4), 487-507. <https://doi.org/10.1007/s11211-015-0543-1>
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (Vol. 3). Thousand Oaks, CA: SAGE.
- Davidson, R. J., & Kaszniak, A. W. (2015). Conceptual and methodological issues in research on mindfulness and meditation. *American Psychologist, 70*(7), 581-592. <https://doi.org/10.1037/a0039512>
- Denzin, N. K., & Lincoln, Y. S. (2011). *The SAGE handbook of qualitative research*. Thousand Oaks, CA: SAGE.
- Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology/Psychologie Canadienne, 49*(3), 182-185. <https://doi.org/10.1037/a0012801>
- Dorjee, D. (2010). Kinds and dimensions of mindfulness: Why it is important to distinguish them. *Mindfulness, 1*, 152-160. <https://doi.org/10.1007/s12671-010-0016-3>
- Dorjee, D. (2013). *Mind, brain and the path to happiness: A guide to Buddhist mind training and the neuroscience of meditation*. Abingdon, England: Routledge.
- Dorjee, D. (2016). Defining contemplative science: The metacognitive self-regulatory capacity of the mind, context of meditation practice and modes of existential awareness. *Frontiers in Psychology, 7*, 1-15. <https://doi.org/10.3389/fpsyg.2016.01788>
- Elliott, R., Fischer, C. T., & Rennie, D. L. (1999). Evolving guidelines for publication of qualitative research studies in psychology and related fields. *British Journal of Clinical Psychology, 38*(3), 215-229.
- Fontana, A. & Frey, J. H. (1994). Interviewing: The art of science. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 361-376). Thousand Oaks, CA: SAGE.
- Gunlaugson, O., Sarath, E. W., Scott, C., & Bai, H. (Eds.). (2014). *Contemplative learning and inquiry across disciplines*. Chicago, IL: SUNY Press.
- Hanh, N. (1976). *The Miracle of Mindfulness: A Manual of Meditation*. Boston, MA: Beacon.

- Herrigel, E. (1999). *Zen in the art of archery*. New York, NY: Vintage Books.
- Hitchcock, P. F., Martin, L. M., Fischer, L., Marando-Blanck, S., & Herbert, J. D. (2016). Popular conceptions of mindfulness: Awareness and emotional control. *Mindfulness*, 7(4), 940-949. <https://doi.org/10.1007/s12671-016-0533-9>
- Holland, D. (2006). Contemplative education in unexpected places: Teaching mindfulness in Arkansas and Austria. *Teachers College Record*, 108(9), 1842-1861. <https://doi.org/10.1111/j.1467-9620.2006.00764.x>
- Jha, A. P., Krompinger, J., & Baime, M. J. (2007). Mindfulness training modifies subsystems of attention. *Cognitive, Affective, & Behavioral Neuroscience*, 7(2), 109-119. <https://doi.org/10.3758/CABN.7.2.109>
- Kabat-Zinn, J., & Hanh, T. N. (2009). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness*. New York, NY: Delta.
- Khalsa, S. B. S., Hickey-Schultz, L., Cohen, D., Steiner, N., & Cope, S. (2012). Evaluation of the mental health benefits of yoga in a secondary school: A preliminary randomized controlled trial. *The Journal of Behavioral Health Services & Research*, 39(1), 80-90. <https://doi.org/10.1007/s11414-011-9249-8>
- Kitzinger, J. (1995). Qualitative research: Introducing focus groups. *BMJ*, 311(7000), 299. <https://doi.org/10.1136/bmj.311.7000.299>
- Lao Tzu. (2006). *Tao Te Ching: A new English version*. (S. Mitchell trans.) New York, NY: Harper Perennial.
- Lutz, A., Slagter, H. A., Rawlings, N. B., Francis, A. D., Greischar, L. L., & Davidson, R. J. (2009). Mental training enhances attentional stability: Neural and behavioral evidence. *Journal of Neuroscience*, 29(42), 13418-13427. <https://doi.org/10.1523/JNEUROSCI.1614-09.2009>
- Lutz, A., Slagter, H. A., Dunne, J. D., & Davidson, R. J. (2008). Attention regulation and monitoring in meditation. *Trends in Cognitive Sciences*, 12(4), 163-169. <https://doi.org/10.1016/j.tics.2008.01.005>
- MacLean, K. A., Ferrer, E., Aichele, S. R., Bridwell, D. A., Zanesco, A. P., Jacobs, T. L., ... Saron, C. D. (2010). Intensive meditation training improves perceptual discrimination and sustained attention. *Psychological Science*, 21(6), 829-39. <https://doi.org/10.1177/0956797610371339>
- MacDougall, C., & Baum, F. (1997). The devil's advocate: A strategy to avoid groupthink and stimulate discussion in focus groups. *Qualitative Health Research*, 7(4), 532-541.
- Mahfouz, J., Levitan, J., Schussler, D., Broderick, T., Argusti, M., & Greenberg, M. (2018). Ensuring college student success through mindfulness-based classes: Just breathe. *College Student Affairs Journal*, 36(1), 1-16. Retrieved from <https://muse.jhu.edu/article/690581/pdf>

- McCollum, E. E., & Gehart, D. R. (2010). Using mindfulness meditation to teach beginning therapists therapeutic presence: A qualitative study. *Journal of Marital and Family Therapy*, 36(3), 347-360. <https://doi.org/10.1111/j.1752-0606.2010.00214.x>
- McCown, D. & Billington, J. (2017). Correspondence: Sitting and reading as two routes to community. *The Journal of Contemplative Inquiry*, 4(1), 165-185. Retrieved from <https://journal.contemplativeinquiry.org/index.php/joci/article/view/131>
- McRae, J.R. (2004). *Seeing through Zen: Encounter, transformation, and genealogy in Chinese Chan Buddhism*. Berkeley: University of California Press.
- Meditation Safety Toolbox [Downloadable archive]. (2018). Retrieved from <https://www.brown.edu/research/labs/britton/resources/meditation-safety-toolbox>
- Monshat, K., Khong, B., Hassed, C., Vella-Brodrick, D., Norrish, J., Burns, J., & Herrman, H. (2013). "A conscious control over life and my emotions:" Mindfulness practice and healthy young people; A qualitative study. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, 52(5), 572-7. <https://doi.org/10.1016/j.jadohealth.2012.09.008>
- NVivo 10 [Computer software]. (2012). Retrieved from <https://www.qsrinternational.com/>
- Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). Thousand Oaks, CA: SAGE.
- Pepping, C. A., Walters, B., Davis, P. J., & O'Donovan, A. (2016). Why do people practice mindfulness?: An investigation into reasons for practicing mindfulness meditation. *Mindfulness*, 7(2), 542-547. <https://doi.org/10.1007/s12671-016-0490-3>
- Peters, J. R., Eisenlohr-Moul, T. A., Upton, B. T., & Baer, R. A. (2013). Nonjudgment as a moderator of the relationship between present-centered awareness and borderline features: Synergistic interactions in mindfulness assessment. *Personality and Individual Differences*, 55(1), 24-28. <https://doi.org/10.1016/j.paid.2013.01.021>
- Rahula, W. (1974). *What the Buddha taught: Revised and expanded edition with texts from suttas and Dhammapada*. Oxford, UK: Grove Press.
- Rogers, H. B. (2016). *The Mindful twenty-something: Life skills to handle stress...and everything else*. Oakland, CA: New Harbinger Publications.
- Rogers, H., & Maytan, M. (2012). *Mindfulness for the next generation: Helping emerging adults manage stress and lead healthier lives*. New York, NY: Oxford University Press.
- Rosaen, C., & Benn, R. (2006). The experience of transcendental meditation in middle school students: A qualitative report. *Explore: The Journal of Science and Healing*, 2(5), 422-425. <https://doi.org/10.1016/j.explore.2006.06.001>
- Roth, H. (2006). Contemplative studies: Prospects for a new field. *The Teachers College Record*, 108(9), 1787-1815. Retrieved from <https://www.tcrecord.org/content.asp?contentid=12682>

- Sable, D. (2014). Reason in the service of the heart: The impacts of contemplative practices on critical thinking. *The Journal of Contemplative Inquiry*, 1(1), 1-22. Retrieved from <http://journal.contemplativeinquiry.org/index.php/joci/article/view/2>
- Sahdra, B. K., MacLean, K. A., Ferrer, E., Shaver, P. R., Rosenberg, E. L., Jacobs, T. L., ... Saron, C. D. (2011). Enhanced response inhibition during intensive meditation training predicts improvements in self-reported adaptive socioemotional functioning. *Emotion*, 11(2), 299-312. <https://doi.org/10.1037/a0022764>
- Sanger, K. L., & Dorjee, D. (2016). Mindfulness training with adolescents enhances meta-cognition and the inhibition of irrelevant stimuli: Evidence from event-related brain potentials. *Trends in Neuroscience and Education*, 5(1), 1-11. <https://doi.org/10.1016/j.tine.2016.01.001>
- Schure, M. B., Christopher, J., & Christopher, S. (2008). Mind-body medicine and the art of self-care: Teaching mindfulness to counseling students through yoga, meditation, and qigong. *Journal of Counseling and Development*, 86(1), 47-56. <https://doi.org/10.1002/j.1556-6678.2008.tb00625.x>
- Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. New York, NY: Guilford Press.
- Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology*, 62(3), 373-386. <https://doi.org/10.1002/jclp.20237>
- Tang, Y.-Y., Ma, Y., Wang, J., Fan, Y., Feng, S., Lu, Q., ... Posner, M. I. (2007). Short-term meditation training improves attention and self-regulation. *Proceedings of the National Academy of Sciences*, 104(43), 17152-17156. <https://doi.org/10.1073/pnas.0707678104>
- Teasdale, J. D., & Segal, Z. V. (2007). *The mindful way through depression: Freeing yourself from chronic unhappiness*. New York, NY: Guilford Press.
- Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation*, 27(2), 237-246. <https://doi.org/10.1177/1098214005283748>
- Thurman, R.A. (2003). *The Holy Teaching of Vimalakirti: A Mahayana Scripture*. State College, PA: Penn State University Press.
- Treleaven, D. A. (2018). *Trauma-sensitive mindfulness: Practices for safe and transformative healing*. New York, NY: W.W. Norton & Company.
- Van Gordon, W., Shonin, E., Sumich, A., Sundin, E. C., & Griffiths, M. D. (2014). Meditation awareness training (MAT) for psychological well-being in a sub-clinical sample of university students: A controlled pilot study. *Mindfulness*, 5(4), 381-391. <https://doi.org/10.1007/s12671-012-0191-5>

- Wallace, B. A., & Shapiro, S. L. (2006). Mental balance and well-being: Building bridges between Buddhism and Western psychology. *American Psychologist*, *61*(7), 690-701. <https://doi.org/10.1037/0003-066X.61.7.690>
- Williams, M., & Penman, D. (2011). *Mindfulness: An eight-week plan for finding peace in a frantic world*. Emmaus, PA: Rodale.
- Wisner, B. L., Jones, B., & Gwin, D. (2010). School-based meditation practices for adolescents: A resource for strengthening self-regulation, emotional coping, and self-esteem. *Children Schools*, *32*(3), 150-159. <https://doi.org/10.1093/cs/32.3.150>
- Yamada, K., & Victor, T. L. (2012). The impact of mindful awareness practices on college student health, well-being, and capacity for learning: A pilot study. *Psychology Learning & Teaching*, *11*(2), 139. Retrieved from <http://www.worlds.co.uk/rss/abstract.asp?j=plat&aid=5177&doi=1>
- Zajonc, A. (2008). *Meditation as contemplative inquiry: When knowing becomes love*. Hudson, NY: Lindisfarne.
- Zeidan, F., Johnson, S. K., Diamond, B. J., David, Z., & Goolkasian, P. (2010). Mindfulness meditation improves cognition: Evidence of brief mental training. *Consciousness and Cognition*, *19*(2), 597-605. <https://doi.org/10.1016/j.concog.2010.03.014>