

Incorporating Mindfulness Practices in Biology Courses

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Extended Abstract

Interest in mindfulness practices, such as reflective writing, yoga, self-compassion, meditation and others, has grown in recent years, and many people have found these approaches helpful during the challenges of the coronavirus pandemic. While we may think of mindfulness practices as individual activities for self-care and personal growth, they are also well-suited to group endeavors. For the past several semesters I have been incorporating short mindfulness practices, such as moments of silence, guided meditations, and reflection exercises, into both lecture and lab classes. These techniques are easily adaptable to both face-to-face and online modalities. For many students (and faculty), a moment of silence at the start of a class may be their first chance to pause and take a deep breath all day. In this mini-workshop participants will directly experience several of the mindfulness practices I have used in my classes, with opportunities for feedback and discussion about each one. The hope is that the session itself will provide participants with a moment of rest within the broader conference, as well as providing information, context, and discussion about utilizing mindfulness practices in biology courses.

Mini-workshop participants engaged in a minute of silence, a guided meditation, and a reflective writing and discussion activity. Participants thought the minute of silence would be the most readily adoptable into their own classes. When introducing the habit of a minute of silence in class, it can be helpful to frame it as holding space for each person to arrive and settle in to the class. Students should be assured that participation is voluntary. The minute can be used as they desire, provided they are not disruptive. During some sessions, the instructor may introduce a quote or idea that students might reflect on during the minute, or ask them to pay particular attention to their breath or the environment. The minute can be beneficial for instructors as well. Even while timing the minute, the instructor has time for a few deep breaths and for shoulders and other areas of tension to relax. A minute of silence is easily adaptable to a variety of classes, and can be effective in-person or online.

For faculty interested in learning more about mindfulness meditation, there are abundant resources available online. My personal entry point for meditation was the Headspace app (<https://www.headspace.com>) and Ten Percent Happier podcasts (<https://www.tenpercent.com>). Both companies offer some free and some paid content, and there are many other commercial options as well. Pre-recorded guided meditations, found on YouTube, can be used in class, or instructors can guide the meditations themselves. While formal training in leading meditation can be helpful, experience participating in live and recorded meditations may offer enough guidance to lead short in-class meditations. It is recommended to have a specific intention in mind to focus the live, guided meditation. The instructor guiding the meditation has the advantage of familiarity with the students and the classroom setting. I have used commercial meditation recordings in the classroom and have led my own short meditations. Meditation in class, whether pre-recorded or live, involves a longer time commitment than a minute of silence, but can still be adapted to many types of classes.

Reflective writing is a mindfulness activity that has great potential for helping students connect biology content to the broader world. In the context of the mini-workshop, participants were asked to connect with their emotional response to the mindfulness activities and discussion by answering these

questions: “How do you feel right now? What are your feelings about today’s content? What are possible reasons you feel this way?” Reflective writing assignments incorporating students’ emotional responses may be more suited to courses where students are thinking deeply about an applied topic and/or giving a presentation.

While I do not yet have data on impacts of using these mindfulness practices in my own classes, there are many research findings that suggest a range of benefits from mindfulness activities. Studies find benefits including increased attention, memory, mood, and emotional regulation (Basso et al. 2019), reduced burnout (Charoensukmongkol 2013), reduced distress (Millegan et al. 2015), increased creativity (Muller et al. 2016), increased attention and focus during reading (Zanesco et al. 2016). It is important to note that most of these studies involve longer experiences with mindfulness, such as multi-week courses devoted to mindfulness. Importantly, mindfulness practices can be very powerful in leading people into self-reflection and even decisions to make life changes. Individuals with a history of trauma and/or mental health issues may want to consult with counselors, therapists, or other healthcare providers for support when beginning a mindfulness practice. It is important when incorporating mindfulness practices into classes that they be optional and voluntary. Shorter activities, such as a minute of silence, likely have less potential to be triggering or problematic. While shorter practices can more easily be woven into classes, it may be harder to identify and track potential benefits from these experiences. Apart from potential direct benefits during one class, these introductory experiences with mindfulness practices may lead some students to seek out additional information and supports leading to long-term benefits.

Keywords: mindfulness, meditation, silence, contemplative pedagogy, self-care

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About the Author

Pam Connerly is a Professor of Biology at Indiana University Southeast, where she teaches Cell Biology, Molecular Biology, Biology Seminar, and Introduction to Biological Sciences. She works with undergraduate researchers to find and characterize novel bacteriophages that infect the bacterial hosts *Caulobacter crescentus* and *Gordonia rubripertincta*, the latter host as part of the SEA-PHAGES program. She is actively engaged in the balancing act of life, seeking connection and support to make academia, family, and personal life sustainable and enriching.

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