

Exploring the Effects of Interpreters' Experiences of Mindfulness Interventions on Their Connection With Nature and Subsequent Environmental Interpretation

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Abstract

This qualitative study used a constructivist grounded theory framework to examine the experiences of environmental interpreters engaged in mindfulness training and their descriptions of mindfulness, nature connection, and interpretive practice. Although there is a prevalent literature base exploring mindfulness and nature connection, a gap in the literature exists pertaining to mindfulness and environmental interpretation training and practice. Nine environmental interpreters participated in a 4-week mindfulness intervention program and engaged in in-depth conversations regarding their experience with mindfulness and interpretation. Constructivist grounded theory coding and analysis indicated that participants in the study experienced the construct of mindfulness in a variety of ways and perceived its impact on their interpretive practice in the following ways specifically: (a) it enhanced personal experiences of nature, and (b) it created more authentic interpretive experiences for their program attendees. This research suggests the value of incorporating mindfulness training in interpreter development programs and the practice of interpretation.

Keywords

mindfulness, environmental education, interpretation, noticing, nature connection

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Opportunities for nature connection are increasingly limited with the prolific urbanization of green spaces, declining emphasis on outdoor experiential learning opportunities within educational systems, financial and time constraints to participation, and limited equitable access to nature (Louv, 2005). Although the physical, social, and psychological benefits of time spent in nature are well documented (Houlden et al., 2018; Mayer et al., 2008; Mygind et al., 2019), a disconnect exists between interest in participating and actual participation in a nature activity (Kellert et al., 2017). When barriers to accessing outdoor activity are overcome, promoting high quality experiences can amplify the potential benefits of nature experience and connection (Kellert et al., 2017). Effective environmental interpretation is a powerful conduit for facilitating durable and meaningful nature connection.

Nature experiences can be conceived in terms of the integrity of the natural space (van Heezik & Brymer, 2018), one's full presence and focused attention in that space (Kabat-Zinn, 2003), and the social processes that provide a foundation for exploration and meaning (Dewey, 1938). Personally meaningful connection to nature through direct experience can promote deeper attachment to natural places and a subsequent desire to care for those spaces (Deringer, 2017). Interpretation is a powerful channel for promoting nature connection in many outdoor settings and can change the trajectory of the way participants experience and internalize natural resources.

The National Association for Interpretation (NAI) defines interpretation as "a communication process that forges emotional and intellectual connections between the interests of the audience and the inherent meanings of the resource" (n.d.). The success of interpretive experiences is largely based on the quality of the interpreter (Stern & Powell, 2013). We posit that foundational interpretive training can contribute to an interpreter's effectiveness, yet the genesis for meaningful environmental interpretation is rooted in the internalization of authentic nature connection gleaned through direct experience and reflection on the part of the interpreter and thus is difficult to reproduce in an authentic way.

Mindfulness practice as an attentive lens for experiencing nature is becoming more prevalent and can enhance nature connection (Hanley et al., 2017) in interpretive settings. The practice of mindfulness, being fully present in the moment, non-judgmentally, and with heightened awareness and sensitivity (Kabat-Zinn, 1994; Langer, 2000; Moscardo, 1999), may be a powerful way to enhance nature connection for environmental interpreters. There is little research that examines how mindfulness may contribute to the depth of the interpreters' nature connection and the subsequent effectiveness of their interpretive engagements.

The purpose of this study is to understand the experience of environmental interpreters participating in mindfulness-based interventions as it relates to nature connectedness and their roles as environmental interpreters. The research questions are:

- a. How do interpreters who have received mindfulness training describe the relationship between nature connectedness and mindfulness?
- b. How do interpreters who have received mindfulness training describe the relationship between mindfulness and their role as interpreters?

Literature Review

Environmental Interpretation

Environmental interpretation is commonly used to connect visitors to natural resources, sparking personal interest and facilitating deeper meaning and connection to the experience (Beck & Cable, 2011; Ham, 1992). Interpretation is comprised of a set of interactive and interdependent relationships involving the visitor, the interpreter and the resource (Lacome, 2003). Effective environmental interpretation may increase nature connection in visitors (Woods & Moscardo, 2003) and influence pro-environmental behavior (Powell et al., 2018). Interpreters need to have foundational knowledge of the resource and understand the needs and interests of their audience for interpretive efficacy (Merriman & Brochu, 2002). Constructive conceptions of interpretation include the facilitation of personal connection and meaning making through interpretive experiences that emphasize personal interactions with elements of interpretive spaces (Wearing et al., 2003). Environmental interpretation can move nature experiences beyond mere novelty and stimulation, often promoting pro-environmental attitudes, intentions, and behaviors (Powell et al., 2012). Interpreter attributes and delivery style, including personal connection to the resource and the projection of authentic emotion, have been found to contribute meaningfully to positive visitor experiences and outcomes (Stern & Powell, 2013). Personal connection to the resource and authentic emotion can be difficult to maintain when interpretive experiences are commonly repeated by interpreters. Mindfulness may be a way to freshen the interpretive experience.

Mindfulness

The construct of mindfulness can be traced back to a variety of sources: Buddhist psychology, Greek philosophy, and more recently, existential philosophy and humanism (Brown et al., 2007). Much of the mindfulness literature of the last 30 years can be located in one of two schools of thought, (a) creative mindfulness, sometimes referred to as western mindfulness, and popularized by Ellen Langer and her associates and (b) meditative mindfulness, sometimes referred to as eastern mindfulness and popularized by Kabat-Zinn and his associates (Hart et al., 2013). Meditative mindfulness is the process of being present in the moment in a non-judgmental way (Kabat-Zinn, 1994). Langer (2000) suggests that creative mindfulness is the “simple act of drawing novel distinctions” (p. 220). This paper leans heavily on the work of Langer and associates, as creative mindfulness is focused on instructional interventions intended to induce this creative state (Hart et al., 2013). While meditative mindfulness is often focused on therapeutic outcomes like stress reduction, creative mindfulness is focused on achieving an open and curious orientation to the environment (Carmody, 2014), which we believe is more congruent with training mindful interpreters. Moscardo (1999) suggests that mindfulness may help people be more open to new information and able to process it, which, if true, would be a desirable outcome for interpreters. For the remainder of this paper, we will refer to western, creative mindfulness as simply “mindfulness.”

In contrast with mindfulness, mindlessness is an inactive state of the mind that relies on previously determined categories (Frauman, 2010; Langer & Moldoveanu, 2000). Mindlessness may lead to stifled experiences that lack presence and depth (Langer, 2016). Mindlessness in learning may limit creative thinking and hinder the ability to learn new concepts (Langer & Piper, 1987). Mindfulness is linked to richer learning experiences (Deringer, 2017; Freire, 1970; Langer & Moldoveanu, 2000; Langer & Piper, 1987) and has also been shown to enhance nature connection (Howell et al., 2011). Though mindfulness is usually conceptualized as a practice that is best done through continuous reflection, it is teachable (Baer et al., 2006), and thus, we posit that mindful nature connection may be teachable.

Nature Connection

Nature writers have long speculated about the relationship between humans and nature (Abbey, 1968; Berry, 1999; Muir, 1894). Wilson's (1984) biophilia hypothesis suggested that humanity has an evolved biological attraction to nature. Empirical research has supported the theoretical work of Wilson, suggesting that a range of benefits, including both physical and psychological health, result from being close to nature (Mayer et al., 2008). Shultz (2002) suggests that nature connection can be described by the "extent to which an individual includes nature within his/her cognitive representation of self" (p. 67). Being connected to nature has been associated with a variety of positive benefits, including positive ecological behavior (Nisbet et al., 2009; Yang et al., 2018), sense of purpose (Mayer et al., 2008), and reduced stress (Bratman et al., 2015; Dean et al., 2018).

Methodology

A qualitative design was used with the intention of providing rich data that are attentive to context. In short, this project sought to understand how participants ascribe meaning to their experiences, a question best answered through qualitative inquiry (Creswell, 2009; Merriam & Tisdell, 2015). As constructivists, we viewed the data that emerged in this study through a social constructivist lens and attempted to interpret data in light of our own reflexivity. Inherent in this process is the assumption that there are multiple realities "situated and located in particular positions, perspectives and experiences" and the acknowledgment of researcher subjectivity in understanding through a reflexive stance (Charmaz, 2006, p. 127).

Sample

We utilized a theoretical sampling method based on the following criteria: (a) participants were nature interpreters, (b) participants were willing to participate in mindfulness trainings (Creswell & Poth, 2018). Participants in the study were University students employed as environmental interpreters by the University's nature research center. Participants were recruited for the study during a professional development

workshop on mindfulness for interpreters sponsored by the nature research center. Participants' involvement in the study was not related to earning academic credit or the completion of course requirements. This study was approved by the Institutional Review Board, and efforts were made to protect the identities of the participants at every turn, including the use of pseudonyms.

Participation in the study was voluntary. Eleven people out of 23 who participated in the mindfulness trainings chose to participate in the study, with nine participants ultimately completing the study. Participants who chose not to participate or who did not complete the full study were not interviewed. We did not systematically examine why they declined full participation. However, we speculate that this may have been due to the time commitments of participating in the study. It is also possible that students had other reasons for not participating, such as a skepticism about the importance of mindfulness. We discuss this implication in the Limitations section, below.

Data Collection

Data for this project were collected using nine face-to-face semi-structured interviews that lasted from 31 to 55 minutes. All interviews were audio recorded and transcribed. Four separate interviews were conducted by each of the two researchers and one interview was conducted by both researchers. The interviews used standardized interview questions and prompts, and each was debriefed by both researchers, including discussions of the individual nuanced differences of each interviewer, participant, and interview. The interviews began as soon as the last mindfulness training was complete, with the final interview completed within 2 weeks of the program's end. The purpose of the interview questions was to generate rich conversation and data. Initial interview questions included:

- (1) After participating in this study describe what mindfulness means to you?
- (2) Do you feel that mindfulness has impacted your practice as an interpreter?
- (3) Do you feel there is a relationship between mindfulness and nature connection?

This guide was utilized as a conversation starter. Researchers asked follow-up questions to ensure that the research questions were sensitive to the emergence of ideas not represented in the interview guide.

Data Analysis

Our approach to the data was based on constructivist grounded theory, which uses constant comparative methods for data analysis and an open coding process (Charmaz, 2006). We found the use of constructivist grounded theory to be a valuable lens through which to view our data. Because this project is a first attempt at studying the impacts of mindfulness training on interpreters' practice, we felt that a constructivist grounded

theory approach to data analysis allowed us to be more responsive to nuance and attentive to the context of the data.

We began the coding process with a first round of *in vivo* coding to label key ideas within the words of the participants as they emerged (Miles et al., 2013). After the first round of open coding, themes began to emerge that were created by the researchers and used as theoretical categories (Charmaz, 2006). The initial theoretical categories were constantly re-evaluated as we coded more interviews. After theoretical categories were established, we began to synthesize theoretical categories, combining some to represent the story that was emerging in the data (Charmaz, 2006). In the final round of coding, we considered how theoretical categories related to each other and tried to understand meanings that may have emerged from the coding process (Charmaz, 2006). After the coding process, data were reviewed by the second researcher, who was not involved in the original coding process, and data were vetted for omissions. Several data points were added based on the recommendations of the other researcher. NVivo software was utilized throughout the coding process (NVivo 12 Computer software, 2018).

We used the codes and themes to develop a basic theory of mindful environmental interpretation presented herein.

Participants

Francis. Francis was in her second year of college but was a freshman per her credit hours. Her major was Interdisciplinary Studies for Special Education. She had worked as an environmental interpreter at the nature center for 8 months at the time of the interview.

Kendra. Kendra was in her fourth year of school at the time of the interview. She came to school as an undeclared major and eventually declared her major as Nutrition. She started working at an aquarium in the summer, and she loved it. She said, “Wait, I want to do this like forever. Why would I not pursue this?” So, she changed her major to Wildlife Biology and applied for a job at the nature center. At the time of the interview, she had been an interpreter for a couple of months with the title of Assistant Education Coordinator.

Barry. Though most of the participants in the study were current undergraduate students, Barry graduated 4 years prior to the time of the interview. He studied Animal Behavior and Spanish. Barry had worked at the nature center for 4 years and had held a variety of positions that included boat driver, environmental educator, aquarium supervisor and, his current role, park manager.

Thomas. Thomas was a junior Geography major at the time of the interview. His degree concentration was in Water Resource Management. Thomas had worked at the nature center for 3 months at the time of the interview as an environmental interpreter.

Celeste. Celeste was a Geography major with an emphasis in Resource and Environmental Management. At the time of the interview, Celeste had been working at the nature center for almost a year as an interpreter, boat driver, and tour guide.

Cindy. At the time of the interview, Cindy was studying Urban Planning with an Art minor. She was a boat driver, interpreter, and tour guide that focused mostly on large groups and school groups.

Joey. Joey was a graduate student pursuing a master's degree in Environmental Resources. He attended the university for his undergraduate degree where he majored in Water Resources. At the time of the interview, Joey had been an environmental interpreter at the nature center for a little more than a year.

Sarah. At the time of the interview, Sarah had just graduated with an undergraduate degree in Wildlife Biology. She was an environmental interpreter at the nature center for 2.5 years while she completed her undergraduate degree. During her senior year, she was promoted to the role of interpreter supervisor, and when she graduated, she moved into a research assistant position.

Brad. Brad was a senior Aquatic Biology major at the time of the study. At the time of the study, Brad had been an environmental interpreter for a little less than a year. Brad suggested that he was just starting to settle into his role and getting comfortable with the wide variety of duties he was responsible for as an interpreter.

Site Context

The environmental context of this study centers around a prolific freshwater artesian spring fed lake, which forms the headwaters for a prominent river in central Texas. The river eventually terminates into the Gulf of Mexico. The lake is home to eight federally listed endangered and threatened species and resides on the property of a public university. One of the university's research centers is located at the lake and is responsible for its stewardship, protection, and educational programs. In addition to the lake, there are numerous trails, wetlands exhibits, and a discovery center. The property is adjacent to a nature preserve owned by the city that is also utilized for educational programming. The educational interface of the center serves students, faculty and staff of the university as well as the general public. Over 125,000 people engage in outdoor education programs at the lake annually. Approximately 30,000 of these annual visitors are local school children with 40% of these children originating from Title I schools.

Interpreter training. The center employs approximately 50 environmental interpreters annually who serve as the conduit for the outdoor education programs offered at the lake and surrounding grounds. Most of the interpreters are students of the university and are majoring in disciplines such as Geography, Aquatic and Wildlife Biology, Environmental Science, Education and Recreation Administration. While the interpreters'

academic course of study informs and augments their interpretive engagement, their interpretive role is not related to academic credit, with the exception being an academic internship.

Training and development emphasize core principles and practices of interpretation rooted in the standards of the NAI. Interpreters in training shadow senior interpreters and receive feedback related to their training performance. Interpreters are required to demonstrate specific proficiencies in content knowledge, group management, and program delivery. Interpreters must also successfully complete several exams to “check out” and begin leading interpretive tours. A priority of the program is cultivating and maintaining the accuracy of program content, which spans numerous disciplines, including archaeology, aquatic and wildlife biology, geography, natural and cultural history, hydrogeology, and environmental science.

Mindfulness Interventions

The mindfulness interventions incorporated in this study provided a range of experiences for interpreters to more deeply connect with nature, fellow interpreters and the nature center specifically. The mindfulness interventions were sequenced with the intention of providing a general foundation of the concept and practice of mindfulness and then moving closer and closer still to the natural environment that comprised the place in which they practiced their interpretive craft. Participants met weekly for 4 weeks at the nature center for 2 hours where they would begin the session by checking in with the group and sharing any connections or observations they had made since the previous meeting. Mindful concepts and practices from the previous session facilitated the expansion of awareness and informed the current activity. Mindfulness interventions were followed with opportunities for reflection, storytelling, sharing thoughts, drawings and discoveries. Reflective platforms for meaning and connection also included weekly reflective journal prompts and one focus group session. The focus group occurred at the conclusion of the study and provided participants with an opportunity to further share and process their experiences in the study outside of the face to face interviews with the researchers. This foundational structure contributed to kinesthetic engagement with nature, including noticing walks, kayaking and snorkeling on the lake.

Several foundational concepts that were incorporated throughout the mindfulness interventions were the practice of wandering and the expanding of one’s senses. These concepts and activities, among others, were accessed in the *Coyote’s Guide to Connecting with Nature*, in which Young et al., (2010) encourage us to “wander through the landscape without time, destination, agenda, or future purpose; be present in the moment; and go off trail wherever curiosity leads” (p. 53). An example of one of the activities included in the mindfulness interventions is described below.

Expanding the senses. The activity draws participants’ attention to the dominant senses of the animals that inhabit the natural area of interest. Participant’s examine each of their five senses and which animal in their immediate surroundings exemplified a sense as its dominant trait. For example, deer are plentiful and readily observable at the nature

center. The deer's dominant sense is its hearing. Participants were asked to focus on the deer's ears and what about their form might promote its ability to hear so well. Descriptors such as "huge, movable satellite dishes" (Young et al., 2010, p. 300) help participants begin to focus on form, function and metaphorical connection. Participants cup their hands behind their ears and notice how hearing is amplified. What are you able to hear that you were not able to earlier? What if you cup your hands such that you can hone in on sounds behind you—as a deer is able to do so? The intent behind this activity was to allow participants to focus in on the senses and encourage them to notice novel distinctions (Langer, 2016). Participants then share observations with the group.

Participants continue to find and explore examples of dominant senses of other animals in their surrounding: owl eyes and periphery vision, raccoon touch and fine motor observation, dog nose and smelling on different planes, moving closer to the ground. After observation, practice, and sharing, participants were instructed to drop any perceived internal or external expectations, described by Langer as previously formed categories that may lead to mindlessness (Langer, 2016), and wander in the nature center, employing their body radar and following their interests and inclinations. While doing so, participants were asked to expand their senses, collectively employing the dominant senses of animals and the techniques practiced. Time structures did exist, with participants required to return to the group in 30 minutes.

Upon return, participants shared discoveries and reflections with the group and compared their experiences of some common phenomenon with other's experiences. Participants were instructed to practice expanding their senses each week of the study, and between weekly meetings. Journal prompts were provided to facilitate extended, in-depth consideration of discoveries and set the foundation for the beginnings of a nature journal. In addition, the practice of a sit-spot was introduced and encouraged. Expanding one's senses and recording and reflecting on observations of a distinct spot in nature, throughout the year and seasons, can help one to begin noticing change and nuances of space in different time, light, weather, and season (Young et al., 2010). Mindful Interventions included:

- Noticing Walks—solo and group walking in the preserve incorporating mindful wandering, expanding senses, nature sketching, and journaling
- Nature Sketching—a component of the nature journal including drawings of natural objects and scenes of interest from multiple angles and distances including imaginary aerial viewpoints. Incorporated the use of a magnified hand lens for intricate detail.
- Nature Journaling—included sketches, notes, writing prompts, found natural objects, objective observations of surroundings, and fixed point observations "sit spot" at varying dates and times.
- Sharing Circles—pre and post activity including sharing of stories, reflections, and observations. Found natural objects, use of metaphor and symbolism included in sharing
- Lake Kayaking and Snorkeling—kinesthetic, immersive, "peak experiences" incorporating full spectrum of mindful activities included in the study.

Findings

Interview Results

Participants experienced the construct of mindfulness in a variety of ways and perceived its impact on their practice as interpreters in the following ways (a) it enhanced personal experiences of nature and (b) it created more authentic interpretive experiences. The findings below are organized based on these two emergent themes.

Personal experiences of nature. The most common theme that emerged from the data was the perception that practicing mindfulness helped participants be more engaged with the natural world around them. The idea that mindfulness enhanced the experience of nature was unanimous among all nine participants. Participants suggested that mindfulness made them more aware of their surroundings and that it created better connection to nature in a variety of ways.

More aware of surroundings. Some participants described being in a state of mindlessness prior to the mindfulness training. Sarah said it was like driving a car without thinking where you were going, and Brad suggested that he had minimized his everyday interactions with the lake to an uninteresting workplace prior to the mindfulness workshops. Brad said that mindfulness helped him change this perspective and be more actively engaged. He said, “So, it’s really nice to just stand in the grass, notice how much life was around me, in every direction, feeling very foreign I remember, was the main takeaway that I had.” Brad said that it seemed foreign because prior to the training he had never really opened himself up to engage in the world around him and now that he had done that, the nature center seemed like a foreign place. Brad said that mindfulness helped him notice that there was “a kind of wilderness” around him when he was at work that he had not been engaged with it before. Several participants suggested that mindfulness helped them more fully engage their senses. Thomas said,

We did that activity where you go out and you start touching everything, kind of getting a feel for it, smell it, just close your eyes, feel it, listen to it. And it really kind of woke me up a little bit to like, I’ve been like missing all this stuff because I’ve been so concentrated on one goal rather than kind of slowing down from time to time and being able to take it all in.

Cindy also referenced being more aware of her senses. She stated that mindfulness helped her take a moment to just stop, breathe, listen, and feel the world around her. Kendra said that mindfulness forced “all of your sense to kind of open.” Thomas said that he believed that mindfulness helped him be more aware of his surroundings because it made the place new again. He suggested that he connects with nature when he is in a new natural place and that mindfulness renewed his outlook on a natural space that he was familiar with at the nature center.

Joey suggested that mindfulness helped him be more aware of his surroundings by “turning off those baseline assumptions that we live with every day.” He suggested

that previously formed mental categories hindered his engagement with nature. Brad said that interpreters should not use previously formed categories to give tours but should try to turn off the previously formed categories and see the environment in a new and interesting way. He said, “So, I feel like interpreting without being mindful is not being interpretive at all, [it] is just relaying facts, might as [well] call us fact machines instead of interpreters.” Brad suggested that active engagement in the natural world and being more aware of one’s surroundings are essential to good interpretation, and he also felt that mindfulness helped achieve that.

Increased awareness of surroundings created space for curiosity and deeper exploration for some study participants. Francis remarked the mindfulness practice prompted her to focus on her immediate surroundings and not what may be happening in another place and at another time. With this intentional mindset, she exclaimed, “I got to see a catfish for the first time in my entire career here the other day! I was thinking to myself ‘Ok, I know that they hide away from the sun, so they are going to be in the headwaters’—and I FOUND one just by intentionally trying” [laughing]. Intentional immersion for Francis facilitated a heightened curiosity, prompting her to consider her immediate surroundings and the habits of wildlife she was curious about. In her explorations, she was rewarded with a confirmation of her awareness and her investigations.

Improved connection to nature. Many of the participants suggested that mindfulness helped them connect more with nature. Brad illustrated this point through a story,

Since, this mindfulness, you know, project started, I’ve gone fishing. And, I have this little fishing spot on the river that I go to quite often. Umm, but a lot of times when I’m on my way there I just try to, you know, kind of tune out everything, find the quickest path, with no poison ivy, no scratches, basically getting there. Umm, this time let myself to kind of wander, meander, picked up rocks, and on the way there I noticed that the canopy of the trees, the birds that were up there, totally different. I never paid attention to them. All the different calls and everything in there, and it really transformed the location when I, when I did finally get there. It wasn’t just the fishing spot and then the road over here and then empty space in between them. That particular spot was part of the whole environment around it. Part of you know, where I passed through and the reason why it’s there, that little eddy in the river is because of these rock formations that I went through, where there’s, you know, vegetation beds. The last time it flooded it went through this way, but now the water has been diverted that way. So, it gave a lot more, like, meaning and reason that I really understood it a little bit better. . . I was able to notice it a lot more in the context with everything else around me.

Brad said that a mindful experience of the river allowed him to know the context of everything else around him. Brad suggested that mindfulness allowed him to have a deeper connection with nature. Joey suggested that the mindfulness training helped him discover the value of engaging more deeply with nature. He said that before the mindfulness training, he would not have walked through the tall grass and touched plants with the intention of connecting with nature, but now he is not afraid to connect with nature.

Celeste suggested that the mindfulness training helped her to be more intentional about taking time to stop her tour and connect with nature—and to allow her tour participants to connect with nature. After the training, Celeste spent more time just sitting, wandering, or looking at things in order to connect with nature. Before the training, she was not excited to slow down and take the time to connect with nature. Cindy suggested that, as an interpreter, there are times when mindfulness can help a person take a mental break that allows them to notice nature on a deeper level. She recalled a time when she arrived at work stressed and then engaged in a mindfulness activity and it helped her focus on “my actual surroundings, and not what was in my head [stress].” Sarah suggested that mindfulness helped her to have a deeper connection with nature by “filtering” overstimulation. Sarah suggested that there is too much going on in the world, and sometimes we have to filter out a lot of it and just focus on one or two aspects.

Authentic interpretive experiences. The term authenticity emerged often during the interviews. Participants said that mindfulness improved their interpretive practice in three ways: (a) it helped them have more authentic nature experiences themselves, and they perceived that those experiences often transferred to participants, (b) they perceived that their participants cared more about nature due to the authenticity of their nature experiences, and (c) it helped them connect with tour participants.

Building authenticity in interpreters. Joey says that mindfulness helped him get out of “zombie mode” and have a more authentic interpretive experience. He clarified,

Mindfulness has made me stop doing the sort of zombie mode tour guide, where it’s like, here’s the script, I’m going to go to the same five spots, don’t really want to interact, just kind of let me get through my shift. Now I kind of look at the boat as like, I have a bunch of people on the boat with me and I’m going exploring, and I’m looking for cool stuff and I will tell you about the cool stuff that I find and why it’s cool.

Joey suggests that good interpretation starts with an authentic experience for the interpreter and that mindfulness helps him have a more authentic experience. Barry said, “The more you are exposed to it, the more you can draw from it.” Other participants agreed with Barry and Joey and suggested that authentic nature experiences gave them the tools to provide more authentic nature experiences. Celeste used the word “genuine” when talking about the type of interpretive experiences that she intended to have with participants. Celeste said that mindfulness was a “supplement” to the skills that she has as an interpreter, and it helped her have more genuine conversations with participants about the resource being interpreted. Several participants suggested that if the interpreter had a “sense of adventure” during the interpretive experience, the authenticity of that sense of adventure enhanced the interpretive experience for participants. Sarah told a story about seeing an eel during a tour.

But they saw how excited I was, because, like, I was tuned in and I spotted the eel first, and I was like [snaps fingers], “this is an eel, and this is awesome, and here’s why.” Umm, and I think my excitement, like, really transferred to the rest of the boat, and at the end people were like “we saw an eel!” when they got off. So, it was cool.

Sarah attributed spotting the eel to her mindfulness. However, her point was that her excitement transferred to the participants. Sarah suggested that authentic nature experiences, which are enhanced by mindfulness, induce excitement for the interpreter, and she perceived that her excitement transferred to her participants. Barry said,

Because if, if you can just you know, look at a tree and say, “Oh this is a tree. It has leaves.” Like, that’s not really interpreting the tree. It’s just saying characteristics of the tree. Interpretation is like a step deeper, where like, “this tree is important to the surrounding ecosystem because this type of bird lives here, and this bird exists in the ecosystem this way.” I’d say that’s more of a mindful way of looking at it.

Barry perceived that a more mindful approach to nature, by the interpreter, helped connect people to nature in an authentic way. Thomas suggested that mindfulness helped give him a renewed sense of passion for his job and that he genuinely wants to share his passion with people who are participating in his tours. Thomas said, “And I’m not just doing a job anymore; I’m actually going out there and sharing something that I really enjoy with the people.” Interpreters perceived that mindfulness exercises in their professional environment helped them have more authentic personal experiences and that those authentic experiences transferred to tour participants. In other words, their own authenticity, gained through mindfulness, helped tour participants care more about nature.

Care for nature. Sarah said, “There’s a quote. I think it’s Wordsworth. It’s, ‘what we have loved others will love, and we will teach them how’. . . And I really think that there is often a lack of connection between people and nature.” She went on to say that people will connect with nature if we convey to them its importance and that mindfulness can help in that process. She said, “You are mindful of how cool this place is, then you’re going to probably have more inspiration towards [the place], because you’re already personally feeling connected to the environment.” Sarah suggested that mindful nature interpretation helps people care for nature. Other study participants suggested that they also perceived a connection between mindful nature interpretation and care for nature. Joey said that creating mindful experiences of place helped to provoke caring in people. Joey perceived that mindful interpretive experiences were more authentic and allowed deeper connection with nature which made people care more about the resource. Celeste said that the ultimate goal of her tours was to provoke some type of emotion. She said that facts are helpful, but emotion is what makes a difference in the way that someone treats nature. She hoped that when people left her boat, they would be conservationists. She recognized that this was “pretty optimistic” but suggested that provoking emotion might be the best way

to work towards the goal. Celeste said that mindfulness helped her tie the experience on the boat to experiences that were important to her participants. Several of the interpreters that were interviewed suggested that mindfulness helped them connect with their tour participants.

Mindful connections with tour participants. Participants suggested that not only does good interpretation involve a personal connection with the environment, but it also involves a mindful connection with the tour participants. Sarah said,

I think the good interpreters are the ones that actually tune-in to their audience. . . . they're being mindful about social cues. They're picking up when people are not really interested in their facts about plants, and they're adjusting their tour so that they're talking about things people are actually interested in. So, I think being mindful and being tuned-in, those are both like top characteristics in what you need in a good interpreter.

Sarah is suggesting that mindfulness was useful to her, not just in the way that the mindfulness workshop was suggesting mindfulness might be useful (i.e., mindful connection to nature), but that it was also useful in connecting with other people. Cindy and Francis also suggested that mindfulness helped them discern what tour participants might, or might not, be interested in hearing about. Celeste suggested that mindfulness helped her tours not be so one-sided, but to engage in dialogue with participants. She said, "Ask your audience who they are, where they're from, and what they want to learn about." Celeste reiterated that for her, this helped keep the tour more genuine and engaging. Brad, Celeste, and Sarah all emphasized the need for interpreters to co-create their tours with the participants so that participants feel that tours are relevant to their lived experiences. They also all suggested that mindfulness helped them be sensitive to tour participants' queries instead of recycling the same tour each outing.

Perceived Barriers of Mindfulness in Interpretation

Each of the interpreters that we interviewed suggested that mindfulness had positively impacted their practice as interpreters, but there were a couple of barriers that interpreters perceived along with the benefits. One such barrier was the perception that mindfulness is corny, hokey, or insincere. One participant mentioned, "I definitely remember like the first 2 weeks, running up to some of my other participants in the mindfulness training, and, and snickering, like, 'Haha, look at this like granola-hippie-bullshit', or like, 'you wanna go to the woke training?'" While this person perceived that overall he had received benefits from participating in the mindfulness training, it was clear that some social barriers existed that must be overcome to receive the benefits. Another critique of mindful interpretation was its limited impact in a large group. Two participants noted that they thought it would be hard to be mindful in groups that were too large. Cindy, one of the two, noted that in small groups, you can talk one-on-one with a participant and find out what they are interested in and customize the experience to meet their desired outcomes, but in larger groups this is not really possible. In the end, all participants suggested that they perceived value in the training despite some limitations.

Study Limitations

This study was largely exploratory and its generalizability is limited. We used a small sample and focused on depth, quality of data, and context as priorities instead of a larger, more varied sample. The goal of this project was not to validate any specific causal relationships. We used a purposefully small sample that was largely homogeneous as it relates to age, employment, interests, and general life philosophy. We also lacked the ability to compel all employees to participate in the study, meaning that some people participated in the training but did not participate in the study. It is possible that students who chose not to participate in the study had valuable and contradictory opinions to those represented in this paper. Additionally, our sample consisted of students who self-selected into a job working in environmental interpretation and therefore may carry certain tendencies or biases that are not generalizable to other populations, even other interpreters. While data collection was focused on nuance and preliminary understanding, certain elements of our research design contradict our constructivist grounded theory framework. For instance, our mindfulness “intervention” suggests that our design is at least quasi-experimental and lacks the openness of a true constructivist grounded theory approach. However, our approach to data analysis did follow a constructivist grounded theory philosophy, which is appropriate for a variety of methodologies that value complexity and nuance (Charmaz et al., 2018). From the data that were collected during this study, a theory emerged that may impact other interpretation programs.

Both researchers entered this study with a background in environmental education and interpretation. One of the researchers is the indirect supervisor of all of the research participants, and though the study was voluntary and researchers emphasized that no negative impact would occur if participation was declined, it is possible that participants were biased by their relationship to the researchers. As such, the positive contributions of the mindfulness training could have been overstated despite our best efforts to avoid this.

Discussion

The purpose of this study was to understand the experience of environmental interpreters participating in mindfulness-based interventions as it related to nature connectedness and their roles as interpreters. To achieve this purpose, the researchers employed two research questions: (a) How do interpreters who have received mindfulness training describe the relationship between nature connectedness and mindfulness? and (b) How do interpreters who have received mindfulness training describe the relationship between mindfulness and their role as interpreters? Two major themes emerged from the data that were collected: (a) mindfulness enhanced personal experiences of nature, and (b) mindfulness facilitated more authentic interpretive experiences for visitors.

Participants described mindfulness as a tool that helped them be more aware of and attentive to their surroundings and heightened their senses. The findings are congruent with existing mindfulness literature (Kabat-Zinn, 1994). Participant descriptions of “zombie mode” are similar to descriptions in the literature of mindlessness (Langer & Moldoveanu, 2000). Over-reliance on previously formed categories leads to failure to

be fully present in the moment and limits the possibility of deeper experiences (Langer, 2016), which the interpretation literature suggests are vital to authentic interpretive experiences (Stern & Powell, 2013). Mindlessness also limits nature connection, which has been linked pro-environmental behavior (Nisbet et al., 2009) and other positive outcomes of interpretive experiences (Stern & Powell, 2013).

Study participants also suggested that mindfulness helped them connect with their tour participants. As in other educational settings, mindfulness is a tool that can help educators connect with their students' learning and lead to a more personal and intrinsically motivated learning experience (Langer, 2016). Many of the study participants perceived that mindfulness enabled them to customize tours to the interests of participants. Embedded in this perception was the interpreters' authentic experiences of nature, their genuine enthusiasm for the place, and, for some, a renewed sense of adventure or discovery. To see something anew, to make new discoveries, is kindred to mindfulness, and sharing exploration and discovery are central to interpretation, embedded in its very definition as "revelation" (Tilden, 1977).

The starting point for sound environmental interpretation is authentic, emotive and personally meaningful experiences of nature. Tilden (1977) urges interpreters to provoke emotion and clarifies interpretation as "an educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information" (p. 17). One cannot provoke emotion through the use of rigid schedules, facts, and rules. The revelation of meanings and relationships is forged through "intellectual and emotional connections" (NAI, n.d.). The efficacy and durability of environmental interpretation is located primarily within powerful personal experiences in nature. These experiences are fostered through intentional mindful engagement and practice.

This study can inform the incorporation of mindfulness training and practice in interpreter development programs. Challenges to mindfulness, as expressed by study participants, related to following a routine schedule, within a specified location, and at times with large audiences at an accelerated program pace. Staff development programs could also utilize mindfulness training and conversation to promote fresh engagement and discovery of frequently visited locations and tour information. Program structures can also be audited in relation to their ability to promote mindful connection to self, place and others. Smaller group size, slower pace, and space for personal connection and spontaneous discovery were referenced as contributors to mindful engagement practice.

Implications for Practice

This study illuminates opportunities for interpreters and program leadership to incorporate mindfulness into training, program development and interpretive practice. We know that meditative mindfulness and creative mindfulness necessitate awareness, immersion in the present moment, and making novel distinctions. Further, authentic experiences, while perhaps externally inspired, are inextricably linked to internalization of meaning and personal relevance. Interpreters need intentional space to

mindfully engage with the environments in which they practice their interpretive craft. If we desire to promote both intellectual and emotional connections with a resource, have we had authentic experiences ourselves in and with the resource? How are we fostering that opportunity as interpreters and agencies? Can we create or enhance space for ourselves and visitors to see things anew, make new pathways of connection and reorganization of meaning, perhaps in ways that have positive social, cultural, and environmental impact?

While an abundance of mindfulness resources exists, we found the *Coyote's Guide to Connecting With Nature* (Young et al., 2010) to be particularly helpful and accessible for environmental interpretation. The mindfulness activities utilized in this study were largely drawn from this book. The work of Ellen Langer and Kabat-Zinn were also instructive in forming historical, philosophical, and theoretical grounding in mindfulness. We believe presence and intentionality may be more important than masterful facilitation of an overly prescriptive activity. We advocate space for interpreters and participants alike to have their own authentic experiences and meaning making outside of established curriculums or pre-determined outcomes. The implication for practice is the planning and structuring of unstructured space—for wandering, exploring, and meaning-making.

Dedicating and creating opportunities for sharing experiences and reflecting on personal discoveries were also highly beneficial for participants within the study. An interpretive shift away from mere conveyance of information towards conversation, question posing, and sharing of reflective observations is demonstrative of mindful engagement. Programs lacking these opportunities may “run the risk of dissolving in to the continuous flux of ‘one thing after another’ that characterize[s] so much of modern life” (Pulkkli et al., 2017, p. 216).

Conclusion

Numerous barriers and challenges exist that omit or truncate nature experience and connection. Nature connection has numerous physical, psychological, and social well-being benefits (Mayer et al., 2009), and authentic nature connection can impact ecological decision-making, stewardship identity and environmental advocacy among children and adults (Masini, 1998). Effective environmental interpretation can amplify the benefits of nature connection.

Data from this study indicate that interpreters' authentic experiences of nature were enhanced through mindfulness training. More telling are the novel connections and new discoveries interpreters experienced within a natural setting they had accessed many times and with reported mindless affect and approach at times. Mindfulness trainings and techniques could be a way to disrupt routine patterns amongst interpreters and promote deeper personal experiences of nature. These experiences can translate to enhanced experiences of participants in interpretive programs, as noted in this study. Interpreters' heightened awareness can also promote more meaningful relationships between the interpreter and participants, where the experience of a natural place affords conversation, inquiry, co-experience, and co-creation

of meaning, as opposed to didactic lecturing of facts. These processes help to move communications beyond cognition alone and sets the stage for the “forging of intellectual and emotional connection” within the interpreter and between the interpreter and participant. Future research interests for the authors include the development of a specific mindfulness nature program offering within the nature center, based on the findings of this study, and further investigation of the experience of interpreters and participants in the program.

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