

Effect of mindfulness activities on environmental education and interpretation practicum students

By

Ellen Dolph

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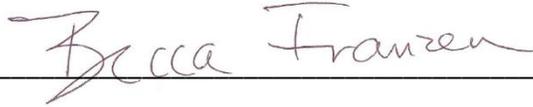
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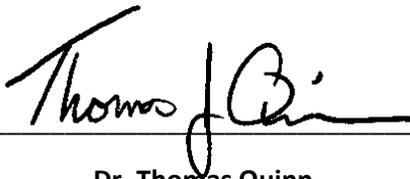
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Approved by the graduate committee of:

A handwritten signature in black ink that reads "Becca Franzen". The signature is written in a cursive style with a large initial 'B'.

Dr. Rebecca L. Franzen

Associate Professor, College of Natural Resources

A handwritten signature in black ink that reads "Thomas Quinn". The signature is written in a cursive style with a large initial 'T'.

Dr. Thomas Quinn

Director, Central Wisconsin Environmental Station

A handwritten signature in blue ink that reads "Kristi Roth". The signature is written in a cursive style with a large initial 'K'.

Dr. Kristi Roth

Professor, School of Education

Abstract

Environmental educators have an important role in fostering curiosity and learning of children and adults. Professionals and students in environmental education and related fields can experience stress. Mindfulness is one way to address this stress. The purpose of this study was to investigate how mindfulness practices could address stress within an undergraduate environmental education and interpretation practicum course with the following research question: How do environmental education and interpretation practicum students perceive the impact of mindfulness interventions? The research question was answered using a mixed methods approach with an emphasis on qualitative data with nine participants. A pre-post Five Facet Mindfulness Questionnaire measured participants' mindfulness levels. Each week, participants completed an online stress check to rate their stress level immediately before and after participating in a mindfulness activity. Three semi-structured interviews were conducted throughout the study. The interviews were transcribed and coded. Thematic analysis resulted in the following themes: practicum involves stress, mindfulness impacts environmental education and interpretation practicum students, and mindfulness decreases stress for various reasons. The theme of mindfulness impacts environmental education and interpretation practicum students included subthemes of: mindfulness impacts practicum experience, mindfulness impacts stress, and mindfulness impacts personal life. Subthemes of mindfulness decreases stress for various reasons included: reframing stress and seeing the big picture, recognizing stress and emotions, and calming down. Themes of increased mindfulness levels and mindfulness practices and preferences were also found. Participants felt that mindfulness helped them lower stress, and incorporated mindfulness into their personal lives. On average, over half of participants lowered their stress each week. Results suggest the use of mindfulness had positive effects on the participants' stress and mindfulness levels. The use of mindfulness could be implemented in environmental education practicum courses and trainings to support students in managing their stress and enhancing their experience.

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Chapter 1: Introduction

Problem Statement

The environment today is facing many challenges. Human impacts are largely causing some of these issues. Climate change, pollution, land degradation, water shortages, and an increasing number of people competing for resources are just a few examples. The systems nature of the environment makes it difficult to address these issues because all of these elements are interconnected.

An example of human impact on the environment can be seen in the anthropogenic impacts on climate change. Emissions of greenhouse gases (GHG) in recent years have been the highest in history (IPCC Report, 2014). This causes warming of the climate system, warming of the ocean, rise in sea level and decrease in amounts of snow and ice. More than half of the observed increase in global average surface temperature from 1951 to 2010 can likely be attributed to anthropogenic increases in GHG concentrations in addition to other anthropogenic forcings (IPCC Report, 2014). These anthropogenic forcings have likely also contributed to widespread surface temperature increases, changes in the global water cycle, and the retreat and melting of glaciers and ice sheets. Impacts from these changes include decreases in cold temperature extremes, increases in warm temperature extremes, and increases in heavy precipitation events in many areas. These effects are projected to continue to increase over the 21st century (Richmond, 2019).

In addition to environmental issues affecting the global population, people are experiencing more stress and anxiety in the world today. According to Reidenberg (2009), people seem to be becoming more stressed. People are plagued with work stress, economic stress, anxiety, and depression, and complain much more frequently. In addition, the Covid-19 pandemic was a major source of stress during the time of this study. Stress tolerance requires various coping skills and even professional or personal help. Increased stress affects the economic, social, political, emotional, medical,

spiritual, and educational aspects of communities and lives. When these stresses become overwhelming and chronic, the body's response system reacts accordingly, which can have lasting effects on physical health (Reidenberg, 2009).

Sustainable improvements regarding these environmental problems require humans to understand and care about the environment. This understanding and care begins with exposure and immersion in the outdoors. According to Kemple, Oh, Kenney, and Smith-Bonahue (2016), when adults remember their childhood experiences, they think of outdoor play. Today's children spend the majority of their time indoors. The same study reported that only a fourth of U.S. children play outdoors on a daily basis and the average child spends more than seven hours a day in front of electronic media. Besides the introduction of readily available electronic media, many other factors have caused the decline in outdoor play. Fear of crime and traffic, lack of community, pollution, diseases, sun exposure, and increased involvement in structured activities are some of these factors.

Spending time outdoors is not only beneficial for solving environmental issues, but also promotes human wellness (Kemple, Oh, Kenney, & Smith-Bonahue, 2016). The outdoors provides a space for physical activity imperative to one's health, and spending time with nature can provide benefits in stress reduction and overall well-being (Kemple et al., 2016). Spending time in the sunlight can reduce depression by increasing the body's production of serotonin, and contributes to feelings of well-being, calmness, focused attention, and memory (Kemple et al., 2016). Berman, Jonides, and Kaplan (2008) found that nature has restorative value that improves cognitive functioning and leads to feelings of peacefulness. Exposure to nature can also promote directed attention, allowing a person to restore their attention resources and exhibit cognitive control. Specifically, in children, it is thought that nature might buffer the effects of stress. Wells and Evans (2003) found that stressful life events have less impact on physiological distress when natural areas are available nearby. In addition, nature can buffer the effects of life stress in the case of global self-worth in children.

Environmental education programs are often directed at children and students, who will grow up to make important decisions about our world. Outdoor play gives children a chance to interact and connect with nature and build a foundation for the development of an environmental ethic, as well as a desire to protect nature (Kemple et al., 2016). Educators have an important role in promoting outdoor learning and play, and increasing student resilience. Outdoor facilities, recreation areas and environmental education programs aim to address environmental problems by educating people and inspiring them to take action, while also giving them opportunities to enjoy and appreciate the outdoors. The purpose of education is to impact human behavior (Hungerford and Volk, 1990). People need to be empowered to take ownership and learn the skills to become active in their environment, and environmental educators can provide these opportunities.

While environmental educators have important roles, environmental educators and education professionals can suffer from increased stress and burnout from their jobs as teachers and caregivers and from their concern of the environment. Educators often face stress related to their jobs, school, and social/personal lives (Abenavoli, Jennings, Greenberg, Harris, & Katz, 2013). Camp employees experience similar stress. Camp employees can experience compassion satisfaction, which is defined as the gratification of helping and contributing to the good of others. They may also experience burnout from the challenges of helping others and living and working in a fast-paced, social environment with little privacy (Stanfield & Baptist, 2019). Even before becoming educators, pre-service teachers, practicum students, and college students in general experience high levels of stress while preparing to enter their career field (Bamber & Kraenzle Schneider, 2016).

In order to be the best teachers and be resilient in their work, it is important that environmental educators and environmental education students learn to manage their stress. One possible way of addressing this issue is the practice of mindfulness. Mindfulness has been shown to decrease both

immediate and long-term stress and has created positive outcomes for teachers and preservice teachers (Bamber & Kraenzle Schneider, 2016, Poulin, Mackenzie, Soloway & Karavolas, 2013).

Purpose of Study

The purpose of this study was to investigate how mindfulness practices can address the issue of stress of environmental education and interpretation practicum students in their last semester of study. Weekly mindfulness activities were used with environmental education and interpretation practicum students enrolled in a Human Dimensions of Natural Resources Practicum course to learn how mindfulness practices can impact stress levels, as well as increase mindfulness levels of the participants. The goal of this study was to determine if a decrease in stress and increase in mindfulness could increase educator outcomes and create a better practicum student experience.

Importance of Study

The importance of this study was to find ways to create healthier and happier environmental education and interpretation practicum students by decreasing stress and increasing the positive outcomes of the practicum experience for these young adults. In addition, mindfulness could become an important tool for them to use in managing their stress in their future careers, as well as a practice they can share with their future students, campers, or audiences. It is important to identify educator outcomes in environmental education and practicum positions to increase environmental awareness, positive student-staff relationships, and growth and development in both staff and students. Healthy and confident staff are more likely to build the relationships needed for their students to develop life skills and an awareness of the environment around them. Practicum students not only develop career skills, but are often young adults who are at an age where they also develop important life skills such as coping. Mindfulness has been linked to both immediate and long-term stress reduction, and can enhance positive experiences while encouraging the reappraisal of negative experiences to enhance personal growth and development (Bamber & Kraenzle Schneider, 2016; Garland et. al, 2015).

Mindfulness programs could contribute to creating a better student and staff experience, as well as aid in obtaining and retaining staff in environmental education positions.

Research Questions

1. How do environmental education and interpretation practicum students perceive the impact of mindfulness interventions?
 - a. How do mindfulness practices affect the stress of environmental education and interpretation practicum students?
 - b. How do regular mindfulness interventions affect environmental education and interpretation practicum students' mindfulness levels?

Theoretical Frameworks

Monitor and Acceptance Theory

Monitor and Acceptance Theory outlines the psychological mechanisms through which mindfulness practices lead to cognitive, affective, stress, and health outcomes (Lindsay & Creswell, 2017). Two main components of mindfulness are attention and acceptance. The Monitor and Acceptance Theory explains how these two components work together to create the mechanisms and outcomes of mindfulness. Those who engage in mindfulness practice are trained to be accepting of their present moment experience and allow all experiences to exist in the present, even stressful ones. Mindfulness practitioners are encouraged to explore stressful experiences with an open and curious mind instead of trying to suppress these experiences. This practice can lead to a reduction in stress and increased physical health outcomes, as well as the ability to manage difficult situations and embrace positive experiences.

Mindfulness-to-Meaning Theory

The Mindfulness-to-Meaning Theory addresses the effects of mindfulness trainings in maintaining positive meaning and achieving greater well-being (Garland et. al, 2015). Mindfulness is normally associated with greater awareness and attention in a non-judgmental way; however, Garland and colleagues (2015) propose that the well-being achieved through mindfulness requires some sense of judgment through reappraisal. Reappraisal is a cognitive strategy that is used during a stressful or emotional situation that cannot be changed. This strategy lessens the emotional impact of a stressful situation by reframing or reappraising the initial perception and response to it (Gross & John, 2003). Positive reappraisal can provide meaningful experience during stressful times. The authors also suggest that positive reappraisal can cause a deeper appreciation of positive experiences and promote natural reward processing.

These two frameworks can work together to help environmental education and interpretation practicum students use mindfulness to manage their stress. Through the framework of Monitor and Acceptance, participants learned to monitor their awareness of their thoughts and surroundings. When participants become aware of stressful thoughts, the Mindfulness-to-Meaning framework can be applied to reappraise the stressful thoughts. The framework of mindfulness-to-meaning centered around reappraisal is relevant to environmental education and interpretation practicum students who are undergoing stressful situations as young adults learning to become environmental educators in a practical setting. These environmental education and interpretation practicum students manage various stressors and emotions, but they can use mindfulness to reappraise this stress as an experience of growth and development that will help them remain resilient in their careers.

Methods

Data were collected from UWSP environmental education and interpretation practicum students during the fall of 2020. Group size varies each semester but consists of around eight to fifteen

students. Nine students participated during this study. The participants were in their last semester of undergraduate study. Participants were between the ages of 21 and 22 at the start of the study. All participants were in their final semester of college and were enrolled in NRES 482 – Human Dimensions of Natural Resources Practicum for 12 credits. This course is designed to give undergraduate students practical experience in creating and teaching environmental lessons and programs for different audiences including onsite students, visiting families, and for the public. The practicum course is split into two parts: environmental education and interpretation. Participants were simultaneously enrolled in NRES 483 – Professional Development in Natural Resource Management for 3 credits.

The Five Facet Mindfulness Questionnaire was used to gather information on how mindful the participants believed they were at the start and end of this study (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). The Five Facet Mindfulness Questionnaire has been used in studies related to mindfulness, stress, and burnout (Abenavoli, Jennings, Greenberg, Harris, & Katz, 2013; Juul, Pallesen, Piet, Parsons, & Fjorback, 2018). This scale includes 39 statements from five elements of mindfulness: observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. Participants ranked their responses to the statements on the scales from 1 to 5 with 1 being never or very rarely true and 5 being always or very often true.

Short stress checks were conducted weekly to obtain data on participant stress throughout the semester. These stress checks were given through an online Qualtrics survey during a Zoom class meeting at 8 AM on Monday mornings. Each participant was asked to select an answer according to how stressed they were feeling right before and after they participated in a mindfulness activity. There were five choices: no stress, low stress, moderate stress, high stress, and extreme stress.

Mindfulness interventions were implemented for the environmental education and interpretation practicum students once during each week of the semester. On the first day, participants

were provided with a brief description of what mindfulness is and why it is important before completing a mindfulness activity. In the following weeks, one mindfulness activity was practiced together each week for five to ten minutes. A different activity was used each week to provide variety and engage a greater number of participants.

Additional data were collected through three short interviews, one in the middle of the semester, one at the end of the semester, and one a month after the participants graduated. Semi-structured interviews were used to gather descriptive data and allow the participants to discuss their thoughts in their own words, but to keep the interviews focused on the topic in order to get comparable results between interviews (Bogdan & Biklen, 2007). These interviews were used to explore the effects of mindfulness practices throughout the semester on practicum student mindfulness and stress levels. The interviews also obtained information on how the mindfulness interventions affected stress levels by asking questions related to reappraisal and the monitor and acceptance theory (Garland et. al, 2015; Lindsay & Creswell, 2017).

The interviews were conducted through Zoom and were automatically recorded and transcribed, except for two interviews that had to be transcribed by hand due to technical issues. The auto-transcriptions were edited and checked by watching the video recordings of the interviews. After the transcripts were edited, they were read through again while looking for topics that stood out, or were commonly discussed. Phrases were coded into categories as they came up in the reading of the transcripts. Once every transcript was preliminarily coded, the transcripts were re-read and the codes were re-examined in the context of the research questions and theoretical frameworks of the study. The coded information was then analyzed using thematic analysis to find common themes between the different interview responses (O'Leary, 2017). The survey responses were used in addition to the information from the interviews in order to see how stress and mindfulness levels changed over the semester and to help interpret the results of the interviews.

Assumptions

These assumptions will be considered in this study in the design, methods and analysis of data:

1. Participants will focus during mindfulness interventions.
2. Participants will respond honestly to survey and interview questions.

Limitations

These limitations are based on uncontrollable factors that may impact this study. The limitations of this study are:

1. It will be hard to ensure that participants are actually practicing mindfulness activities. Even if they are practicing mindfulness activities, it is hard to ensure they are taking them seriously and focusing during them.
2. Participants may start at different levels of knowledge and practice of mindfulness.
3. Self-reporting participants may exaggerate participation and feelings related to mindfulness in interview questions.

Delimitations

The following delimitation was placed on this study due to the nature of this research:

1. This study will be specific to one environmental education and interpretation practicum course cohort at the University of Wisconsin-Stevens Point.

Definition of Terms and Abbreviations

- Burnout: Results in emotional exhaustion and low achievement due to extended periods of high stress, especially related to helping others (Stanfield & Baptist, 2019)

- Mindfulness: The quality of being aware of something, or a mental state achieved by focusing on, or paying attention to, the present moment and acknowledging and accepting one's thoughts, feelings and senses (Bamber & Kraenzle Schneider, 2016; Biskner, 2019; Kabat-Zinn, 2015)
- Practicum: A course taken that includes "practical experience within Resource Management major options that includes planning and implementing programs" (University of Wisconsin-Stevens Point, 2021). In this study, all participants in the practicum course were studying environmental education and interpretation.
- Stress: Stress occurs when a person believes that a situation is more than they can handle. Students experience unique stress due to living away from home for the first time, being in new social situations, and higher-level academics (Bamber & Kraenzle Schneider, 2016)

Summary

People are facing many environmental and personal challenges in the world. Spending time in nature can inspire people to be involved in solving environmental issues, while also promoting overall wellness (Frauman, 2011). Environmental educators are important for bringing others into the outdoors, but in doing this work, they can suffer from stress. Undergraduate practicum students studying to be environmental educators experience added stress from school, work, and social situations. Mindfulness could be a way to address this stress, promote environmental awareness, and increase positive interactions with others. This study seeks to understand how mindfulness can reduce stress of environmental education and interpretation practicum students, and whether mindfulness interventions will increase the individual mindfulness of these educators.

Chapter 2: Literature Review

The purpose of this study was to examine how environmental education and interpretation practicum students perceive the impact of mindfulness interventions, specifically with the sub questions of:

1. How do mindfulness practices affect the stress of environmental education and interpretation practicum students?
2. How do regular mindfulness interventions affect environmental education and interpretation practicum students' mindfulness?

This literature review describes why environmental education and camp settings are important places for youth development. It describes the importance of environmental education employees for visiting youth, as well as the staff and students working in these careers. Despite the benefits of these jobs, staff can suffer from stress. Finally, it defines mindfulness and explains its importance and benefits, as well as discusses the use of mindfulness in settings related to environmental education.

The participants of this study were environmental education and interpretation practicum students in their last semester of study. These students may go into careers working in environmental education, interpretation, may teach in classrooms, or may work in residential programs or camps. All of these careers have similarities. They all involve working with and helping people, which is commonly a source of stress. In this review, literature on environmental education and interpretation, camp, and formal education settings were all used to provide background for this study due to the similarities among them.

Camps and environmental education centers both cater to youth of various ages. Often, summer camps feature outdoor programming and recreational activities that overlap with environmental education lessons and activities. In addition, many environmental education centers

offer overnight field trips and programming led by environmental education staff. Some environmental education facilities offer weeklong fieldtrips and hire staff to be both environmental educators and cabin leaders. Overnight field trips often feature elements similar to a residential camp including campfire programs with skits and songs, night hikes and activities, and games. Even if staff are not required to stay overnight, they are still working long hours, as long as 7 AM to 9:30 PM, similar to a residential summer camp schedule. With any overnight group or camp, educators and counselors are able to develop a relationship with children, which is an important part of the experience for children. Even during day trips or day camps, educators and counselors spend many hours with children caring for them and teaching them. For example, all meals are eaten together and breaks are taken together.

With both field trips and camps, there is a tradition component for children, parents, chaperones, and teachers. While campers may attend camp year after year and follow in their parents' and siblings' footsteps, students may be looking forward to their environmental education fieldtrips all year, or even for longer if it is a regular part of their school curriculum. Parents of past attendees love to come back to revisit and teachers of field trips often have special traditions such as campfire skits and silly songs. Campers may come back to their childhood camp as counselors-in-training, or even to work as a counselor.

There are also similarities in the staffing of environmental education and camp settings. Both groups, have tight-knit communities due to the amount of time spent together. These settings rely on teamwork, collaboration, and communication, so staff get to know each other well and work together often. In addition, camps and environmental centers often attract college students and recent graduates interested in natural resource and education fields, so there are similarities in the people hired in both of these settings.

Environmental Education and Camp Settings are Important Places for Development

Youth and Staff Development

Environmental education facilities and summer camp are both important settings for youth development and learning. The purpose of environmental education is to provide opportunities to explore the outdoors and foster a love of nature through development of values, build an awareness of environmental issues, and provide opportunities to develop skills to solve these problems (UNESCO, 1977). These are important goals to increase student knowledge and better the environment, but outdoor education and camp facilities also have an important role in helping students develop other life skills.

These educational experiences not only teach about the environment, but also promote personal development skills. Outdoor, active play contributes to improved self-control and self-regulation, and can help a child focus their attention (Kemple, Oh, Kenney, & Smith-Bonahue, 2016). Outdoor play can also teach children communication and social skills. In addition, more flexible play options, compared to traditional playgrounds, can result in fewer problem behaviors. Cognitive development is also enhanced during outdoor play through sensory experience, observation, and exploration. Natural environments provide opportunities for cognitive growth because of the diversity of subjects and sensory objects that they can sort, label, identify, and explore. This environment also promotes more creative and symbolic play. More specifically, outdoor play in natural environments can increase attention, and increase social and emotional well-being.

Environmental education settings provide opportunities for youth development. Thirty-three educators consisting of youth program managers, community organizers, teachers and nonformal science educators described their practice in interviews on youth development in environmental education (Schusler & Krasny, 2010). The educators were asked how they facilitate environmental action

and personal growth in young people. Nine themes emerged from the data: creating safe spaces, providing structure, building relationships, bridging differences, setting expectations, providing opportunities for meaningful contribution, supporting youth, connecting youth with their community, and expanding horizons. Youth reflections from nine group interviews also provided evidence for youth development in environmental education programs. Youth reported intellectual development through learning about the environment. They also reported psychological and emotional development, such as responsibility, patience, balance, and self-confidence. Youth reported social development through forming connections and participating in civic engagement.

Youth outcomes have been studied by many researchers and the benefits of camp on youth are widely known. Some positive skills youth have gained from camp include social-emotional skills such as relationship skills, social awareness, self-management, self-awareness, responsible decision-making, independence, being present, perseverance, responsibility, and appreciation for differences (Owens, 2016; Richmond, Sibthorp, & Wilson, 2019). Camp is not only an important learning setting that contributes to growth as a youth, but also has learning outcomes that last into adulthood (Richmond, Sibthorp, & Wilson, 2019). A past University of Wisconsin-Stevens Point graduate in environmental education and interpretation has also studied youth outcomes. Stewart (2014) studied whether children in a camp-themed afterschool program or residential summer camp, both hosted by the Central Wisconsin Environmental Station, perceived growth in the youth development outcomes of friendship skills, interest in exploration, and affinity for nature. A sample of 23 afterschool program participants and 134 summer campers completed a Friendship Skills survey, an Interest in Exploration survey, and an Affinity for Nature survey from the American Camp Association's Youth Outcomes Battery. Both the afterschool program and residential summer camp resulted in perceived growth in all three youth development outcomes, with the highest growth in affinity for nature, suggesting that both afterschool and camp settings provide opportunities for youth development.

The skills that youth develop in these settings may be in part due to their counselors and staff. Since youth attend summer camp programs away from their normal home community consisting of their family and friends, their camp counselor can be important in modeling appropriate social and emotional behaviors, as well as providing encouragement and support (Owens, 2016). Some possible reasons youth are able to develop these skills and behaviors include staff disposition, leadership techniques, and camp policies, as well as the counselor teams and non-counselor staff involved. Roark, Ellis, Wells and Gillard (2010) researched whether camp counselors who serve as autonomy-supportive mentors in their interactions with campers fostered greater camper developmental outcomes. In classroom settings, autonomy-supportive teachers engage student psychological needs by supporting students in making meaningful choices and rationale, listening attentively, and offering encouragement and praise for efforts and progress. This idea was applied to camp setting to explore the relationship between camp staff and camper developmental outcomes. A Scenarios in Camp questionnaire was administered to 361 counselor teams and 289 non-counselor staff to measure their levels of autonomy-supportive and controlling dispositions, while 3,030 campers took the American Camp Association Basic Camper Outcome scales, which measured three developmental outcomes: independence, friendship skills, and competence. The relationship between autonomy-supportive camp staff and camper outcomes based on these questionnaires and scales was not significant. However, the researchers found that camp staff had high levels of autonomy-support, while the control had relatively low levels of autonomy-support and suggest that the types of people camps hire have higher levels of autonomy-supportive tendencies to start with than the general population.

Not only does camp provide opportunities for camper development, but summer camp employment provides growth opportunities for staff, especially counselors that are new to the field, similar to young environmental educators in a practicum setting. A study using an online survey indicated that camp staff grew in many ways from working in a day and resident camp setting (Marshall,

2016). The most commonly mentioned category of growth was in peer relationships. Confidence was another high area of growth. The findings in this study regarding areas of personal growth can be used by administration to intentionally design and facilitate staff training to optimize staff growth and performance, especially in areas related to peer relationships, mindfulness, teamwork, and appreciation of diversity. Another study used mixed methods to understand how camp experiences lead to personal growth and development in young adults working in residential summer camp settings and to identify the camp conditions that facilitate this change (Garst, Franz, Baughman, Smith, & Peters, 2009). Participants from the study explained that they were profoundly changed from before they worked at camp and felt like more grown-up and well-rounded individuals after their camp experience. The study suggests that camps transform young staff into more functional adults by providing opportunities for growth as well as support. Camp staff develop deep friendships, are supported in creating a positive self-identity, and are able to contribute to a larger community. Camps also provide opportunities for skill development and career exploration and reflection.

Practicum Student Development

Practicum experiences are important in personal and professional development of young adults. Team management, communication, project management, and presentation skills are some professional skills that students developed within a one-quarter practicum experience in the Public Policy Undergraduate Practicum Program at Stanford University (Sprague & Percy, 2014). Interviews were conducted with 55 students from the first five years the practicum course was offered to learn about their experience in the practicum program and how the skills they gained were applied to their current professions. Students mentioned that the professional skills from their practicum experience were beneficial in their careers. Students also believed that practicum benefited them in job searches and graduate school applications. Students benefited from keeping in touch with their former classmates in their jobs, graduate schools, or regarding policy issues. Practicum experiences also provided

opportunities to learn skillsets specific to a career and apply a student's knowledge in their field of study.

In a review of literature of preservice teacher practicum experiences, Cohen, Hoz and Kaplan (2013) found three major clusters of outcomes. The first is teachers' personal perceptions, beliefs and sense of efficacy related to teaching. These outcomes were generally positive resulting in changes in beliefs, ideas, views, opinions, and appreciation related to topics such as multiculturalism, instructional processes, integrating subject areas, and understanding of links between theory and practice. The second cluster of outcomes was related to improvement of instructional competencies and skills, such as with self-regulated learning environments, flexibility in teaching, instructional design, and classroom management. The third cluster of outcomes focused on what the students of these preservice teachers achieved. During their practicum experience, they also gained experience teaching students, improve and practiced skills such as behavior management and flexibility, and received feedback from classroom teachers and students. Though these outcomes were found for pre-service teachers, the environmental education and interpretation practicum students experience a lot of similarities.

Challenges of Working in Camp and Education Settings

While camp employees may experience compassion satisfaction, which is defined as the gratification of helping and contributing to the good of others, they may also experience burnout from the challenges of helping others and living and working in a fast-paced, social environment with little privacy (Stanfield & Baptist, 2019). One study used the Transactional Model of Stress and Coping framework, and, specifically, self-compassion to study the effects of burnout on summer camp staff (Stanfield & Baptist, 2019). Participants were asked to identify which categories of self-care activities they participated in and how often. Categories included physical exercise, restorative practices, personal time, group time, and contact with friends and family. Participants also answered questions related to self-compassion, values, and stress. Based on findings from this research, it was suggested that camps

need to use individual and systemic processes to prevent and address burnout, such as encouraging healthy and restorative behaviors during off time, creating more opportunities for staff bonding, and creating more camp-wide activities to relieve pressure on individual staff members.

Workplace fatigue is another challenge of working in a camp setting. Fatigue has been implicated in many injury and illness events, but has not been highly studied in camp settings (Stanfield & Baptist, 2019). Fatigue is a common theme among camp staff due to the fast-paced and long hours of camp and can contribute to changes in mood, cognitive problems, reduced motivation, lower job performance, and safety risks (Stanfield & Baptist, 2019). In a study using focus groups of 29 camp health staff and directors, it was found that levels of fatigue depend on variables such as time and type of stressors causing the fatigue (Dubin, Garst, Gaslin, & Schultz, 2019). They also found that camp-related fatigue is a distinct experience for camp staff as a whole, as well as individually due to the unique setting of camp and individual perspectives of fatigue. This study was exploratory and suggests that camp administrators educate staff on the signs and symptoms of fatigue during staff training, encourage appropriate use of discretionary time, and adjust programming and increase social support structures for staff when summer is in full-swing. They also suggest encouraging restorative behaviors and rest time, similar to the findings of Stanfield and Baptist (2019). All of these measures taken to address stress, fatigue, and burnout contribute to a person's overall wellness.

Undergraduate education majors also experience challenges (Murray-Harvey et. al, 2000). Students at Flinders University complete two practicum periods of eight weeks each. In a study of two cohorts, researchers found that at least half of the students experienced stress. Students were most concerned about preparation and less stressed by school evaluation. Students believed support from teachers was their most important coping strategy. Students also experienced stress related to balancing their practicum workload with their personal life and managing time and concerns of others' expectations of their work. Practicum students with higher levels of concern were associated with lower

ratings from supervising teachers. Poor ratings were given by teachers to practicum students with poor relationships with the teacher and higher stress from fear of failing practicum, however a few students with high stress received positive ratings from their supervising teachers. Overall, students with higher stress were not as successful with their teacher ratings.

Mindfulness

Traditional mindfulness originated through Buddhist meditation and spiritual practices (Albrecht et al., 2012). Today, mindfulness is practiced in many cultural, spiritual, and religious customs.

Mindfulness can also be studied from a psychology tradition, which is a more secular and behavioral approach. The following describes the importance of mindfulness:

Of all the meditative wisdom practices that have developed in traditional cultures throughout the world and throughout history, mindfulness is perhaps the most basic, the most powerful, the most universal, among the easiest to grasp and engage in, and arguably, the most sorely needed now. For mindfulness is none other than the capacity we all already have to know what is actually happening as it is happening. (Kabat-Zinn, 2015, p. 1481)

Mindfulness is an accessible practice that can have benefits for those that practice it.

Mindfulness is the quality of being aware of something, or a mental state achieved by focusing on, or paying attention to, the present moment and acknowledging and accepting one's thoughts, feelings and senses (Bamber & Kraenzle Schneider, 2016; Biskner, 2019; Kabat-Zinn, 2015). Core constructs of mindfulness can also be defined as attention, awareness, non-reactivity, and non-judgmental thoughts (Bamber & Kraenzle Schneider, 2016). Similarly, Baer and colleagues (2006) found that there are five facets of mindfulness after combining five mindfulness questionnaires and using exploratory factor analyses and correlational analyses, followed by confirmatory factor analysis. The five factors that they found were: observing, describing, acting with awareness, non-judging, and non-

reacting. The five facets were also found to relate to each other in different ways, contributing to overall mindfulness. These findings resulted in the Five Facet Mindfulness Questionnaire.

Mindfulness interventions focus on being aware of the present, connecting the mind and body, focusing attention, awareness of bodily sensations, and creating a non-judgmental thought process (Bamber & Kraenzle Schneider, 2016; Biskner, 2019). Mindfulness practice helps with focusing attention, regulating emotion, improving self-compassion, and reducing stress and anxiety. Paying attention and focusing on passing thoughts, feelings, emotions and actions in a non-judgmental way can increase both cognitive and emotional flexibility (Bamber & Kraenzle Schneider, 2016). This increases a person's awareness and can lead to non-reactivity. Instead of reacting to a situation, a person is able to acknowledge it and let it go. This encourages emotional stability and behavioral control, and can improve physical, mental, and emotional well-being. Mindfulness is practiced through meditation and contemplation, and cultivated by paying attention to everyday tasks (Albrecht, 2014). Mindfulness requires this practice to train oneself to intentionally pay attention and cultivate mindful presence (Kabat-Zinn, 2015).

Mindfulness can be categorized into two types: state and trait (Bamber & Kraenzle Schneider, 2016). State mindfulness occurs immediately following a mindfulness intervention. Trait mindfulness occurs with repeated practice of mindfulness activities and is increased with higher state mindfulness experiences. Repeated mindfulness practices increase trait mindfulness and people who have higher state mindfulness after practices, have higher trait mindfulness.

Importance of Mindfulness

Both state and trait mindfulness have been found to reduce distress, anxiety, negative mood, and perceived stress (Bamber & Kraenzle Schneider, 2016). Even short mindfulness practices can provide these benefits. People who have higher trait mindfulness have been known to experience higher

well-being, a decrease in anxiety, and lower stress. They also show more stress resistance and greater psychological flexibility. Even short sessions of mindful activities (20 minutes) have been shown to decrease anxiety and negative mood, while increasing state mindfulness (Bamber & Kraenzle Schneider, 2016). In turn, state mindfulness can affect trait mindfulness, which can further reduce stress and anxiety on a larger time scale. In addition, trait mindfulness can increase the effectiveness of mindful activities. A literature review conducted by Mantzios and Giannou (2019) also found that 20-minute, 10-minute, and even 5-minute mindfulness practices can improve wellbeing. The repetition of state mindfulness experiences from short mindfulness practices can build up a habit of being more mindful (Mantzios & Giannou, 2019).

Various studies have demonstrated mindfulness reducing participants' stress. In a study conducted by Creswell, Pacilio, Lindsay and Brown (2014), 66 young adult volunteers were assigned to either a three-day, 25-minute per day meditation mindfulness training or an analytic cognitive training control program. All of the participants completed a stress challenge task after the completion of their third mindfulness meditation or cognitive training session. During this task, participants' psychological stress perceptions and physical reactivity were measured. They found that the brief mindfulness meditation training was perceived to reduce psychological stress more than the control cognitive training. It was also found that participants with higher dispositional mindfulness had lower stress perceptions than those with lower dispositional mindfulness. The results indicated that brief mindfulness meditation training can buffer self-reported psychological stress, as well as physical stress through greater cortisol reactivity. It is suggested that brief mindfulness meditation training encourages coping efforts.

Poulin, Mackenzie, Soloway, and Karavolas (2013) also found that mindfulness has positive impacts on stress. Two different mindfulness interventions were used to test this. The first was a mindfulness-based stress reduction program to be used in human service work-place settings and the

second was a mindfulness-based wellness education program to be implemented in academic programs. Forty nurses and nurse aids participated in the first program, mindfulness-based stress reduction, which was modified to be brief and more flexible. It consisted of four 30-minute training sessions with mindfulness experiences, and mindfulness homework to practice for 15 to 20 minutes per day. A control group practiced a brief Imagery and Progressive Muscle Relaxation program. All participants completed the Maslach Burnout Inventory, Satisfaction of Life Scale, and Smith Relaxation Disposition Inventory immediately before and after program completion. Participants were more relaxed and satisfied with their lives compared to the control group.

The second program, Mindfulness-Based Wellness Education, was implemented in a Bachelor of Education program as an elective course (Poulin, Mackenzie, Soloway & Karavolas, 2013). Participants of the study (28 intervention and 16 control) completed the Kentucky Inventory of Mindfulness Skills, the Kessler 10 Psychological Distress Scale, the Satisfaction with Life Scale, and the short form of the Teachers' Sense of Efficacy Scale before and after the course. Five participants who took the course were also interviewed eight months after they completed the training. The Mindfulness-Based Wellness Education program consisted of eight weeks of interventions focusing on the development of mindfulness skills to enhance and explore the seven dimensions of well-being: physical, social, emotional, environmental, intellectual, career, and spiritual. The participants in this study were also given mindfulness homework to practice five days a week for 15 to 20 minutes. The results indicated that students that participated in the course had improved their mindfulness, satisfaction of life, and teaching self-efficacy. The results from the interviews indicated that the homework was too demanding, even though the mindfulness activities provided immediate benefits. Participants from the interviews also shared that they were better able to respond to stresses, be more present, and were able to incorporate mindfulness into their lives and classrooms.

Researchers have focused on the reasoning behind this stress reduction. Reappraisal is one way that mindfulness can reduce stress (Garland et. al, 2015). Reappraisal is an important component of the Mindfulness-to-Meaning Theory. The Mindfulness-to-Meaning Theory addresses the lasting effects of mindfulness trainings in maintaining positive meaning and achieving greater well-being (Garland et. al, 2015). In this article, well-being is described as “a sense of purpose and meaningful, positive engagement with life that arises when one’s life activities are congruent with deeply held values even under conditions of adversity,” (Garland et. al, 2015, p. 294). Mindfulness is normally associated with greater awareness and attention in a non-judgmental way, however Garland and colleagues (2015) proposes that the well-being achieved through mindfulness requires some sense of judgement through reappraisal. Reappraisal in this context refers to cognitive reappraisal, or a cognitive strategy that is used during a stressful or emotional situation that cannot be changed. This strategy lessens the emotional impact of a stressful situation by reframing or reappraising the initial perception and response to it (Gross & John, 2003).

Mindful awareness can lead to identification of habits, especially ones with negative patterns. Being aware of one’s habits can lead to the modification of these habits, but that is not enough to achieve well-being. Mindfulness practices sometimes promote disengagement from fixating on stressful events, but Garland and colleagues (2015) proposed that this is not the true cause of well-being achieved from mindfulness training. He proposes that mindful practices create a metacognitive state that changes the way a person frames an experience. In this way, positive reappraisals resulting from being mindful can produce more adaptive behavior and appreciation that even negative experiences can facilitate personal growth. Positive reappraisal can provide meaningful experience during stressful times. Reappraising stressful experiences into meaningful ones can become habit with regular practice. The authors also suggest that positive reappraisal can cause a deeper appreciation of positive experiences and promote natural reward processing.

Mindfulness must focus on both promoting happiness through savoring joys, and ease suffering through reappraisal (Garland et. al, 2015). This framework of mindfulness-to-meaning centered around reappraisal is relevant to environmental education practicum students who are undergoing stressful situations as young adults learning to become environmental educators in a practical setting. These environmental education practicum students are managing various stressors and emotions, but they can use mindfulness to reappraise this stress as an experience of growth and development that will put them ahead in their careers.

Another way that mindfulness reduces stress and affects cognitive and health outcomes is described in the Monitor and Acceptance Theory (Lindsay & Creswell, 2017). Monitor and Acceptance Theory outlines the psychological mechanisms through which mindfulness practices lead to cognitive, affective, stress, and health outcomes (Lindsay & Creswell, 2017). Two main components of mindfulness are attention and acceptance. Attention is achieved by monitoring the present moment experience. Acceptance involves non-judgment or non-reactivity of the momentary experience. The Monitor and Acceptance Theory explains how these two components work together to create the mechanisms and outcomes of mindfulness. Mindfulness interventions often use monitoring practices in the beginning to train participants to pay attention to the present moment of both their internal and external environments. Participants are then trained to be accepting of their present moment experience and allow all experiences to exist in the present, even stressful ones. Participants are encouraged to explore stressful experiences with an open and curious mind instead of trying to suppress these experiences. While participants may improve on their attention and monitoring skills early on in their mindfulness practice, it can take longer to become comfortable with acceptance. As participants learn to increase attention monitoring and acceptance, they improve cognitive outcomes related to balancing attention, memory, reactivity, and conflict monitoring. This can lead to a reduction in stress and increased physical health outcomes, as well as the ability to manage difficult situations and embrace positive experiences.

Mindfulness in Education Settings

Mindfulness in Education. The benefits of mindfulness have been found in a variety of settings, including education. Mindful attitudes may promote positive outcomes for educators (Abenavoli, Jennings, Greenberg, Harris, & Katz, 2013). Abenavoli and colleagues (2013) found burnout and mindfulness are linked by using the Interpersonal Mindfulness in Teaching Scale, Five Facet Mindfulness Questionnaire, Maslach Burnout Inventory for Educators, Positive and Negative Affect Scale, Patient Reported Outcomes Measurement Information System, a daily physical symptoms checklist, Perceived Stress Scale, and Competitiveness subscale of the Time Urgency Scale. A sample of 64 educators from two middle schools in Pennsylvania completed these web-based self-report surveys to determine the effects of mindfulness on these educators. Not only did Abenavoli and colleagues study whether mindfulness was related to burnout, but they also tested possible factors contributing to burnout. Stress is one factor found to be affecting burnout. According to the results of this study, mindfulness can be protective for educators that reported greater stress initially and protect them further from emotional exhaustion. Albrecht, Albrecht, and Cohen (2012) also found that mindfulness helps teachers reduce stress levels, assist with behavior management strategies, improve self-esteem, and create a holistic view of curriculum.

Various types of mindfulness programs and activities have been used in school settings. Mindfulness Based Stress Reduction has been implemented in some schools to help achieve positive outcomes in students and teachers (Biskner, 2019). Other programs in place in schools include the Mindfulness Education (ME) Project, and Mindful Schools, which have created curriculum to train and help teachers use these practices in their schools (Biskner, 2019).

Mindfulness in Environmental Education. Mindfulness can also be incorporated into outdoor education to create awareness of nature and the environment (Frauman, 2011). Frauman (2011) introduced a mindfulness-based model for outdoor programming that would address the learning

environments and enhance existing programming in informal and outdoor education settings. This model was created to help engage audiences and increase learning, overall satisfaction and responsible environmental behavior of visitors and students of environmental education facilities. A model with four phases was created for use in outdoor education settings to enhance programming and create a more rewarding experience for participants as well as staff. The four phases were: 1) Organization of Programming, 2) Communication Factors to be Used by Administrators and Staff, 3) Participant Interest and Mental State, and 4) Consequences. Fraumen (2011) proposed that this model be used to act as a framework for programming in outdoor settings. The organization of programming should be clear and have a themed structure. Communication factors should introduce some kind of change, involve the senses, grab the visitor's attention in an exciting way, use provoking questions, connect and relate to the audience, and orient the participants. The participant interest and mental state phase should promote interest in the program, openness to learning information, perspectives, and behaviors, and focus on the setting in order to invoke and maintain mindfulness during the program or lesson. The consequences from following these previous steps should be an increase in learning, self-esteem, satisfaction, feelings of control, motivation to initiate responsible environmental behavior, and a feeling of accomplishment (Frauman, 2011).

Mindfulness in Camp Settings. Mindfulness has also been studied in camp settings. In a study conducted by Gillard, Roark, Nyaga, and Bialescki (2011), three mindfulness scales were tested on both day and residential summer camp staff to understand their baseline mindfulness practice levels. The Mindful Attention and Awareness Scale (MAAS), an adapted MAAS scale for camp settings, and the Interpersonal Mindfulness in Parenting scale were the three scales used. The five-item scale adapted for a camp setting from the 15-item Mindful Attention and Awareness Scale showed reliability and convergent validity with the original 15-item MAAS. This camp-MAAS scale was selected to measure interpersonal relationship aspects of a camp setting. They concluded that the 5-item camp-MAAS could

be useful in an assessment of camp staff for staff training purposes. In addition, they suggest future studies using alternative mindfulness scales, such as the 5 Facet Mindfulness Questionnaire (Gillard, Roark, Nyaga, & Bialeschki, 2011).

Mindfulness and College Students. College students tend to experience stress and anxiety due to exposure to new environments, social situations, and academic workload (Bamber & Kraenzle Schneider, 2016). While some stress can have positive effects in motivating students to study and work and maintain mental and physical well-being, high levels of stress can cause negative psychological, social and academic effects. A majority of college students have above average stress levels, which is why it is important to address this problem. Some tested interventions for coping with stress include guided imagery, journaling, exercise, music therapy, and meditation. Mindfulness meditation is one practice that may help relieve stress and anxiety because it encourages focus and attention (Bamber & Kraenzle Schneider, 2016).

Mindfulness Interventions

There are many different mindfulness interventions that can help achieve benefits such as reduction of stress and anxiety. Mindfulness interventions include trainings, self-guided activities, and group activities. Three common mindfulness interventions include breathing, focusing, and verbalizing mental problem-solving processes (Gillard, Roark, Nyaga, & Bialeschki, 2011; Poore, 2017). Common behavior programs using mindfulness include Mindfulness Based Stress Reduction, Mindfulness Based Cognitive Therapy, Dialectical Behavior Therapy, and Acceptance and Commitment Therapy (Albrecht et al., 2012). Mindfulness Based Stress Reduction is a very common mindfulness behavior program, and involves practices such as body scans, gentle stretching, yoga mindfulness exercises, and the application of these practices into everyday life. In this study, a variety of mindfulness interventions were used to study the perceived impacts on environmental education and interpretation practicum students' stress during their final semester.

Summary

Environmental education settings are important places for development of youth and young adults because of their unique aspects. Camp staff and environmental educators, similar in many ways, have opportunities to contribute to the growth and development of their campers and students, but as young adults, and in the case of this study, undergraduate practicum students, they are also still developing. Working with others provides opportunities for skill growth and job satisfaction, but can also cause stress and burnout from long hours of interaction. In addition, undergraduate practicum students experience added stress from assignment deadlines and long hours. Mindfulness is a current practice being used in educational fields and can provide various benefits for wellbeing and stress reduction, which could be beneficial in environmental education, camp, and practicum settings.

Chapter 3: Methods

The purpose of this study was to examine how environmental education and interpretation practicum students perceived the impact of mindfulness interventions, specifically with the sub questions of:

1. How do mindfulness practices affect the stress of environmental education and interpretation practicum students?
2. How do regular mindfulness interventions affect environmental education and interpretation practicum students' mindfulness?

This chapter discusses the research methodology, participants, instrumentation, interventions, and data analysis used to answer the research question.

Research Methodology

A mixed-methods approach was used in this study, as both surveys and interviews were conducted. The majority of the data was collected through three qualitative interviews; however, it was supplemented by data from quantitative surveys used for triangulation purposes. One mixed-methods approach outlined by O'Leary (2017), is a qualitative approach with acceptance of quantitative data. O'Leary (2017) describes this approach as:

The basic premise here is that in-depth exploration under a qualitative framework will best answer the research question, but that quantification, of at least some of the data, makes sense and can add to the analysis. Whether in the form of an embedded survey, quantifying what is traditionally seen as qualitative data, or exploring existing data, quantitative data can add breadth to a study and may even work towards making it more representative. (p. 319)

This mixed-method approach enhances the in-depth qualitative data with quantitative data to add breadth to the study (O’Leary, 2017). Examples of this mixed methods approach could be including a survey in an otherwise qualitative study, using either quantitative or qualitative data to create graphs or charts, or examining existing data. In order to answer the research questions presented in this study, a qualitative approach was used to obtain the majority of data through interviews in order to collect information on environmental education and interpretation practicum students at the University of Wisconsin-Stevens Point. The qualitative approach obtained depth in the data collected, however the pre- and post-surveys and weekly stress checks provided quantitative data that was used to compare with the interviews.

Another mixed-methods approach outlined by O’Leary (2017) is the triangulation approach. “The thinking behind the triangulation approach is that confirmation of any particular data source occurs through comparison and validation of a different data source” (O’Leary, 2017, p. 320). In this approach, data is analyzed separately, and later compared and contrasted to find results and conclusions. Triangulation is one way researchers can obtain trustworthiness, or credibility (Shenton, 2004). In this study, triangulation was used between the interviews and the surveys (Five Facet Mindfulness Questionnaire and stress checks). Although, the surveys were not analyzed for significance, descriptive statistics were calculated and formatted into tables to compare with the interview data.

Trustworthiness is an important aspect of qualitative research methods. Triangulation and member checks were methods of trustworthiness used in this study. Triangulation uses multiple methods together to reduce the effects of limitations of a single method. In this study, the Five Facet Mindfulness Questionnaire and weekly stress checks served to confirm the authenticity of the interviews. Shenton (2004) also outlines the importance of member checks to increase trustworthiness. These checks confirm the accuracy of the data by allowing participants to verify that their words were recorded accurately during data collection and that the researcher’s inferences and findings from the

data are accurate. Quotes used in the results section of this study were emailed to participants along with their accompanying paragraphs to provide context. Participants were asked to confirm that the quotes accurately represented what they said and that they were used in the correct context.

A qualitative approach “calls on inductive as well as deductive logic; appreciates subjectivities; accepts multiple perspectives and realities; recognizes the power of research over both participants and researchers; and does not necessarily shy away from political agendas” (O’Leary, 2017, p. 272). Other characteristics of qualitative research include: prioritizing depth over quantity of data, taking place in a natural setting, using small numbers and non-random sampling strategies, using inductive analysis, and having the goal of gaining understanding of people and situations through rich engagement (O’Leary, 2017). This study has these characteristics, therefore the majority of the data collected was qualitative.

Participants

Data were collected from UWSP environmental education and interpretation practicum students during the fall of 2020. Group size varies each semester but consists of around eight to fifteen students. Nine students participated during this study. The participants were in their last semester of undergraduate study. Participants were between the ages of 21 and 22 at the start of the study. All participants were enrolled in NRES 482 – Human Dimensions of Natural Resources Practicum for 12 credits, as well as NRES 483 – Professional Development in Natural Resource Management for three credits, and were in their final semester of study. The practicum course is split into two parts: environmental education and interpretation.

The environmental education portion of the course takes place at the Central Wisconsin Environmental Station (CWES). CWES is a field station of the University of Wisconsin-Stevens Point College of Natural Resources. CWES is located on a 200-acre property on Sunset Lake, near Stevens Point, Wisconsin. The CWES mission is “to foster in adults and youth the appreciation, understanding,

skill development, and motivation needed to help them build a sustainable balance between the environment, economy, and community,” (Central Wisconsin Environmental Station, n.d.). During the school year, the site hosts the Tomorrow River Community Charter School (TRCCS) and typically hosts field trips for visiting schools. In addition, CWES hosts weekend groups and various events. During the summer, CWES hosts camps and university classes.

The participants spent one day each week at CWES during the fall of 2020. Each week, students turned in a lesson plan. They were then responsible for teaching their lesson for TRCCS students at CWES. In addition, each student worked at least one family camp weekend as part of a team. Family camp weekends are open to the public for families to stay in a cabin at CWES and participate in programming. Students were responsible for planning and facilitating the weekend. Other assignments included creating a podcast, hosting webinars, creating environmental education videos, teaching virtual lessons, and completing self and peer evaluations.

The interpretation portion of the class takes place at Schmeckle Reserve. The Schmeckle portion of the class met once each week on Monday afternoons. Schmeckle hosts a variety of programs for the public. Each student was responsible for planning and executing an interpretive program for the public. Students also created interpretive media pieces and interpretive videos.

The professional development course provides opportunities for students to participate in conferences, learn professional skills, and prepare for their careers. This course was offered virtually during the semester of the study and met on Monday mornings from eight to eleven. Since all students participate in this class and meet regularly at a recurring time, the interventions were completed at the start of these class meetings.

Instrumentation

The Five Facet Mindfulness Questionnaire was used at the beginning of the semester and at the end of the semester to supplement the data collected through the interviews. An informed-consent form (Appendix A) was included at the beginning of the pre-Five Facet Mindfulness Questionnaire that was given during the first week of the study. The Five Facet Mindfulness Questionnaire (Appendix B) was administered online through an online survey tool called Qualtrics during a virtual class meeting time on Zoom. The Five Facet Mindfulness Questionnaire has been used in studies related to mindfulness, stress, and burnout (Abenavoli, Jennings, Greenberg, Harris, & Katz, 2013; Juul, Pallesen, Piet, Parsons, & Fjorback, 2018). It was also recommended for use in future camp studies by Gillard, Roark, Nyaga, and Bialeschki (2011). This scale includes 39 statements from five elements of mindfulness: observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. The information from the initial questionnaire was used as baseline measurements and as a talking point during interviews to discuss how mindfulness interventions impacted participants' feelings of stress and mindfulness. Demographic information and questions on participants' current knowledge and practice of mindfulness were included in the survey immediately following the Five Facet Mindfulness Questionnaire (Appendix C).

Short stress checks were conducted weekly to obtain data on participant stress throughout the semester. These stress checks were given during a Zoom class meeting at 8 AM on Monday mornings. The stress checks were completed in Qualtrics and the students were given an anonymous link for the survey each week. Each participant was asked to enter an identification number and click on an answer according to how stressed they felt right before they participated in a mindfulness activity. There were five answer choices: no stress, low stress, moderate stress, high stress, and extreme stress. See Appendix D for details. Then the participants completed a guided mindfulness activity synchronously online. Immediately following the mindfulness activity, participants were asked to consider if/how their

stress levels and emotions changed and answer the same question a second time. These responses were used to observe changes in stress over time, as well as help the participants relate mindfulness activities to their stress.

Interviews were used to collect data on participants' perceptions on how the mindfulness activities impacted their mindfulness and stress levels. Two interviews were conducted throughout the semester. The first interview took place in the middle of the semester and the second was at the end of the semester. All nine participants completed the first and second interviews. Semi-structured interviews were used to gather descriptive data and allow the participants to discuss their thoughts in their own words, but to keep the interviews focused on the topic in order to get comparable results between interviews (Bogdan & Biklen, 2007). The interviews used open-ended questions based on the initial survey questions and literature review. Questions included how participant responses to the survey have changed since the beginning of the semester. There were also questions on how often participants engaged in mindfulness activities during personal time and the types of activities they used (Stanfield & Baptist, 2019). See Appendices E and F for interview questions.

In order to assess whether mindfulness practices affected participants' stress levels and levels of mindfulness after the intervention period was complete, a third follow-up interview was conducted one month after the semester ended. All participants were sent emails inviting them to sign up for a third interview. Four participants responded and completed the third interview. This interview included questions on whether the participant was still practicing mindfulness and if so, what types of activities they were engaging in (see Appendix G). The purpose of the post-intervention interview was to obtain information on how practicum student stress levels changed after the semester was over and whether the participants thought mindfulness had improved their stress levels. The interviews also provided insight on whether participants found the mindfulness interventions useful in their lives and how they had continued practices after graduating.

Interventions

Mindfulness interventions were implemented for the environmental education and interpretation practicum students once during each week of the semester. On the first day, there was a brief description of what mindfulness is and some benefits of practicing mindfulness. Participants were informed that resources and practices would be available in the form of a word document containing the activity links for use as needed by individuals who wanted to do more on their own. After the brief introduction, participants completed a mindfulness activity. In the following weeks, one mindfulness activity was practiced synchronously during class time each week for five to ten minutes (Bamber & Kraenzle Schneider; 2016, Mantzios & Giannou, 2019). A different activity was used each week for 13 weeks to provide variety and cater to different interests to engage a greater number of participants.

The activities chosen were based on recommendations made in the literature. Common mindfulness interventions include breathing and focusing activities (Gillard, Roark, Nyaga & Bialeschki, 2011; Poore, 2017). Activities such as mindful breathing, body-scans or body-awareness, meditations, breathing, walking meditations, mindful eating exercises, and others can be incorporated into the classroom and also daily life (Albrecht, Albrecht, & Cohen, 2012). Yoga and stretching are also common mindfulness practices (Christopher, Christopher, Dunnagan & Schure, 2006; Biskner, 2019). Focusing on an object in nature, breathing exercises, and including staff training on how to use mindfulness with children were also mentioned in the literature (Gillard, Roark, Nyaga & Bialeschki, 2011; Poore, 2017). The activities chosen for this study included breathing exercises, various meditations, body scans, walking meditation, mindful yoga and stretching exercises, and focusing activities, as suggested in the literature. Activities from YouTube and various mindfulness websites were used in the weekly interventions. In addition, activity links were provided for participants to use in their own time if they desired. The full list of activities that were used is found in Appendix H.

Data Analysis

The data from the pre and post Five Facet Mindfulness Questionnaires were downloaded from Qualtrics into Excel sheets. The participants' scores for each of the five facets were entered and then counted up for the pre and post questionnaires. The participants' changes in scores for each of the five facets were calculated, as well as the participants' total change in score for all five facets combined. Due to the small sample size (n=8), the data were not analyzed for statistical significance, but the data were entered into a table and compared with data collected from the interviews on whether participants believed their mindfulness levels had changed. It was also used to make observations on specific areas of mindfulness that were impacted.

The data from the weekly stress checks were also downloaded from Qualtrics and placed into Excel sheets. The data were used to create tables and graphics that show individual participants' patterns of change in stress due to mindfulness activities, compare the change in stress due to mindfulness activities from one participant to another, disaggregate the change in stress by mindfulness activity, and determine trends in the change in stress level throughout the weeks of the study. All of these observations were used as sources of triangulation and to help interpret interview results.

The interviews were analyzed using thematic analysis to find common themes between the different interview responses (O'Leary, 2017). The interviews were conducted through Zoom and were automatically recorded and transcribed, except for two interviews that had to be transcribed by hand. The auto-transcriptions were edited and checked by watching the video recordings of the interviews. Notes were taken both during the interviews and while editing the transcripts. These notes were used to help code the data. After the transcripts were edited, they were read through again while looking for topics that stood out, or were commonly discussed. An open-coding method was used and phrases were coded into categories as they came up in the reading of the transcripts. The coding was completed by hand using Microsoft Word. Codes were denoted by highlighting a phrase in a particular color. The color

codes were recorded in another document. Once every transcript was preliminarily coded, the transcripts were re-read and the codes were re-examined in the context of the research questions and theoretical frameworks of the study. Finally, the data were coded using elements from the literature including the Five Facets of Mindfulness, Mindfulness-to-Meaning Theory, and Monitor and Acceptance Theory. Thematic analysis resulted in the following themes: *practicum involves stress, mindfulness impacts environmental education and interpretation practicum students, and mindfulness decreases stress for various reasons*. The theme of mindfulness impacts environmental education and interpretation practicum students include the subthemes of *mindfulness impacts practicum experience, mindfulness impacts stress, and mindfulness impacts personal life*. Subthemes of mindfulness decreases stress for various reasons included *reframing stress and seeing the big picture, recognizing stress and emotions, and calming down*. Themes of *increased mindfulness levels and mindfulness practices and preferences* were also found. See Table 1 below for an example of how thematic analysis was used to find themes from the interview coding process. The survey responses were used, in addition to the information from the interviews, in order to see how stress and mindfulness levels changed over the semester and to help interpret the results of the interviews.

Summary

A mixed methods approach with an emphasis on qualitative data was used to determine the perceived impacts of mindfulness on the stress of environmental education and interpretation practicum students. The majority of the data were collected through qualitative interviews, however quantitative surveys were used as a method of triangulation. The Five Facet Mindfulness Questionnaire was given as a pre and post survey to gather information on whether participants' mindfulness levels changed and to compare with the interviews. Mindfulness interventions were conducted weekly with a stress check (rank stress level) immediately before and after the mindfulness activity. Three semi-structured interviews were conducted: one in the middle of the semester, one at the end of the

Table 1*Thematic Analysis Codes and Themes*

Themes	Subthemes	Codes
Practicum involves stress		Causes of stress Stress levels
Mindfulness impacts environmental education and interpretation practicum students	Mindfulness impacts stress Mindfulness impacts practicum experience Mindfulness impacts personal life	Mindfulness decreases stress Mindfulness impacts the stress checks
Mindfulness decreases stress for various reasons	Reframing stress and seeing the big picture Recognizing stress and emotions Calming down	Focusing on positives and seeing the big picture Awareness of thoughts Managing emotions and prevent bottling up Letting go of stress that is out of their control Taking breaks and time to think Calming down and slowing down
Weekly mindfulness practice impacts mindfulness level		Increased mindfulness levels Examples of increased use of mindfulness Five facets of mindfulness
Mindfulness practices and preferences	In-class mindfulness interventions Outside of class use	Activity preferences Variety Timing of interventions Consistency of use Frequency Purpose of use Timing of use Preferred activities Outdoor practices Intention to practice mindfulness

semester, and the last one month after the semester ended. The interviews were transcribed, coded and analyzed. Thematic analysis resulted in the following themes related to mindfulness and stress: practicum involves stress, mindfulness impacts stress levels, mindfulness impacts environmental

education and interpretation students' practicum experience, and mindfulness reduces stress in various ways with subthemes of reframing stress and seeing the big picture, recognizing stress and emotions, and calming down. Themes of increased mindfulness levels and mindfulness practices and preferences were also found.

Chapter 4: Results

The purpose of this study was to examine how environmental education and interpretation practicum students perceive the impact of mindfulness interventions, specifically with sub questions of:

1. How do mindfulness practices affect the stress of environmental education and interpretation practicum students?
2. How do regular mindfulness interventions affect environmental education and interpretation practicum students' mindfulness?

Three interviews were conducted and thematic analysis resulted in the following themes: *practicum involves stress*, *mindfulness impacts environmental education and interpretation practicum students*, and *mindfulness decreases stress for various reasons*. The theme of mindfulness impacts environmental education and interpretation practicum students included the subthemes of *mindfulness impacts practicum experience*, *mindfulness impacts stress*, and *mindfulness impacts personal life*. Subthemes of mindfulness decreases stress for various reasons included *reframing stress and seeing the big picture*, *recognizing stress and emotions*, and *calming down*. Themes of *increased mindfulness levels* and *mindfulness practices and preferences* were also found.

How do Mindfulness Practices Affect the Stress of Environmental Education and Interpretation Practicum Students?

Practicum Involves Stress

The participants reported various stressors in their interviews, some specific to practicum and others more general. Some common stressors of the participants included the workload of practicum courses, completing large projects, managing time and meeting deadlines, and uncertainty of what the semester would be like and other concerns related to the pandemic. Towards the end of the semester, participants also mentioned stress related to graduating, searching for jobs, and planning their futures.

Other stressors mentioned, not directly related to practicum, included concerns about the pandemic and political climate.

Levels of stress reported throughout the semester varied. During the first interview that took place in the middle of the semester, almost all participants thought their stress levels were fluctuating, or increasing. The second interview took place at the end of the semester and participants either believed their stress levels were still fluctuating a lot, or were decreasing. In the final interview that took place one month after the semester ended, participants experienced a decrease in stress, as well as a change in stressors. Participants mentioned that the stress they were experiencing was no longer about school work, but about finding jobs, moving, or taking the next steps in their lives. For example, one participant reported an increase in stress during their first interview, fluctuating stress in their second interview, and a decrease in stress in their final interview.

I think it's [stress] gone up, but it's a different stress, I think, like a different type of stress. It doesn't feel the same. Like, I don't know how to explain it. I guess I was really stressed at the beginning and more nervous, kind of, about how to do, how I was going to do practicum, and now after, like I have a better grasp on like what I need to do, but I'm just stressed because I have a lot coming in the next, like second half of the semester. (Participant 4, interview 1)

I think it's gone up and down a lot. I feel like certain weeks are definitely more stressful. But in the beginning, I think I was more stressed about teaching and like, I think the type of stress is just changed. I felt like I wasn't super stressed at the beginning, but now I'm like not super stressed because I'm not, I'm confident about what I'm doing and like my material. I think it's more just like time management and like getting it all done in the way I want to get it done. So, I feel like it's been like a roller coaster of stress and emotions all semester. I think it's changed because I've been able to grow as like an educator and so I'm not as stressed about running a

good lesson plan. I'm more stressed about just like the way that we're teaching with like videos and stuff. (Participant 4, interview 2)

Um well, it's kind of, it's kind of hard to like get out of the groove of school. So, I think after we were done with school I was still like kind of stressed because I felt like it was almost like muscle memory to be stressed, like I still had school work to do. But it definitely like decreased I think, now. It's just sort of like a different kind of stress with like looking for jobs and like planning: like if I get this job, like what am I going to do like moving-wise and everything like that. So, I think it's, it's decreased. It's not definitely not as much as it was during school, but I think it's still there a little bit. (Participant 4, interview 3)

Mindfulness Impacted Environmental Education and Interpretation Practicum Students

Mindfulness Impacts Practicum Experience. Participants believed that mindfulness had impacts on their practicum experience. Participants reported that it was easier to stay motivated and focus on getting assignments done, that they were able to focus on teaching instead of worrying about forgetting their content, and that mindfulness helped them stay calm and present during lessons. Participants also used mindfulness breaks during practicum to calm down and manage stress. One participant mentioned using mindfulness helped them reflect, saying:

So, with all of the reflection, it's been kind of easier to like move into the mode in my head of reflection and that has been brought into the practicum experience with like after a lesson plan it's just kind of when I'm walking back, I automatically go into reflection about what was going on and what I could have done better and what things went well (Participant 7, interview 1)

Another participant mentioned in two of their interviews that using the mindfulness activities with their practicum experience helped solidify that the environmental education and interpretation field is the right field for them. In their second interview they said:

I mean, like I said before, I mean, there are still like some doubts in the back of my mind like 'is this what I want to do with my life?' You know, those every day questions that we always have, but um, but like using the mindfulness activities and just doing them in practicum, like, it kind of fused together really well and it made me realize this is what I want to do. And they kind of work together hand-in-hand, which was really nice because, you know, the lesson plans, like, they're very tedious, so you have to like make sure you have everything in there and considering all the questions and stuff and how you ask those questions, and yeah, I would say with practicum it helped a lot (Participant 5, interview 2)

Over half of participants also said that practicing mindfulness helped them to plan and prioritize their assignments and time. Based on the interviews, practicum students felt benefits in various aspects of their practicum experience, both related to stress and in additional areas.

Mindfulness Impacts Stress. One subtheme found from the analysis of the interviews was a decrease in stress attributed to mindfulness. Participants reported feeling less stressed directly after practicing mindfulness activities both in class and in their personal practice, as well as feeling less stressed overall. Participants felt varying degrees of reduced stress, some felt less stressed immediately after mindfulness activities, others felt less stressed in general, and some felt stressed but not as much as they thought they would be without mindfulness practice. When asked specifically about the stress checks during the interviews, many participants mentioned that they felt like their stress decreased after the weekly activities. Some mentioned that their stress level depended on how stressed they were that particular week or the mindfulness activity that was completed that week. One participant mentioned that even if the mindfulness activity was helpful, their stress level might not have gone down an entire level, especially if they started at a low stress level, saying:

Researcher: Okay. And so then in the stress checks, before and after, have you noticed any patterns in those?

Participant: Yeah, which I never noticed it going up, it seemed to always go down, um, so that was nice. Some days it was low to begin with, so it may not have gone down, but it didn't get worse, so.

Researcher: Yeah. OK. So, do you think that when you started out low, it was less likely to decrease?

Participant: Yeah, I'd say so. I almost never have no stress (participant 9 interview 2)

One participant said that as the semester went on, they started to see a pattern in their stress checks:

Before I felt like nothing could de-stress me, in a way, and so I was always high stress, but now I feel like I did see a pattern because I was choosing less, less stress or whatever it was, um, for a lot of the answers, um, simply because of the things that we've been going over and ways to like control that I guess... (Participant 1, interview 1)

The recorded data from the weekly stress checks also shows a decrease in stress after completing a mindfulness activity, as seen in Table 2. On average over thirteen weeks, 58.2 percent of participants lowered their stress. There were eight weeks that more than half of participants experienced lower stress after completing a mindfulness activity, and five weeks where less than half of participants lowered their stress after completing a mindfulness activity. All participants experienced a reduction in stress at least three times. However, some individuals tended to experience a decrease in stress more often than others, and not all participants were in class each week, as seen in Table 3.

Mindfulness Impacts Personal Life. Besides impacting participants' practicum experience and stress levels, mindfulness also had impacts on other areas of participants' lives. Participants reported

Table 2*Percent of Total Participants Whose Stress Decreased Each Week After Completing a Mindfulness Activity*

Week	Number of participants	Number of participants whose stress decreased	Percent of participants whose stress decreased
1	9	7	77.8
2	9	5	55.6
3	9	4	44.4
4	8	3	37.5
5	8	5	62.5
6	7	2	28.6
7	7	6	85.7
8	9	5	55.6
9	9	5	55.6
10	9	5	55.6
11	6	2	33.3
12	8	3	37.5
13	7	4	57.1
Average	8.076923077	4.307692308	52.8

Table 3*Percent of Times Each Participant Experienced a Decrease in Stress After Completing a Mindfulness**Activity*

Participant	Total Number of activities participated in	Average pre stress level	Average post stress level	Percent of time participant experienced a stress decrease
7	12	3.67	2.75	83.33
9	12	3.25	2.17	75
6	10	2.8	2.1	70
2	13	2.38	1.77	61.54
8	12	4.25	3.67	50
1	8	3.86	3.38	50
5	13	2.38	2	38.46
4	13	2.77	2.46	30.77
3	12	2.67	2.42	25

impacts such as noticing their thoughts and surroundings more and being more grateful. One participant said mindfulness helps them “get into being a better person, I guess, just being like more thoughtful and patient” (Participant 6, interview 1).

Mindfulness Decreases Stress for Various Reasons

Another theme in the interviews was that mindfulness decreases stress for various reasons. While the previous theme focused on the perceived impacts that mindfulness had on participants, including impacts on participants’ stress. This theme focuses on why and how mindfulness helped participants lower their stress. Participants reported multiple reasons that mindfulness helps them reduce and manage their stress. Sub themes included: reframing stress and seeing the big picture, recognizing stress and emotions, and calming down.

It is common for the mind to wander during mindfulness practices. It is also common for stressful thoughts and feelings to surface due to increased awareness during mindfulness activities (Lindsay & Creswell, 2017). Participants reported similar things. Some participants felt stress before starting the activities, but were able to let those feelings go during the activity. Other times participants who felt stress before starting the activities were not able to completely resolve it during the activity. Sometimes participants said that stressful thoughts and feelings popped into their head during the mindfulness activities, but they were then able to deal with them. Finally, there were a couple of people that said they try not to think about stress at all when they are doing the mindfulness activities.

Reframing Stress and Seeing the Big Picture. Most of the participants reported that mindfulness helped them take their stress and think about it in a more positive way. Participants were able to look at the big picture and put their feelings of stress into perspective. Participants made statements such as:

Hmm, um, I suppose something more positive that comes out of the stress is that I, I know that me as a, as a person, I have very high standards for myself just in terms of like wanting to make

sure that everything is, is done correctly and nothing's late and so I guess, um, working with that sort of drive that I have that causes the stress and realizing that it is a good thing, but I need to learn how to like take a step back sometimes. I guess that'd be one way that I could, I could see where that question goes. Um, Yeah. So hopefully that, that stress that I have now will one day help me get a job. yeah. (Participant 9, interview 1)

So, I think the mindfulness activities especially like the prompts today [mindful journaling prompts on gratitude], for example, it helped me pinpoint the things in my life that I'm grateful for in the moments, and then even though all these tasks, they seem like stressful tasks that we have to complete by a due date, when you look into the broader scheme of things, you're like, oh, it's helping me find a job later on, it's helping me strengthen this experience in this skill. So, I think it's just helped frame my mindset in practicum to see that we aren't just doing assignments just to do assignments, but it's actually helping us in the long run. (Participant 2, interview 1)

Recognizing Stress and Emotions. Many participants also believed that practicing mindfulness helped them become more aware of their thoughts and emotions. Being aware of these things helped participants prevent stressful thoughts and feelings from taking control. They also reported that being aware of their thoughts and feelings helped them identify which stressors in their lives they can control and which ones were out of their control. They were able to let go of stress that was out of their control and think through the stress that they could control through the practice of mindfulness. Some examples from participants include:

I think it varies, like sometimes if it's something kind of more in my control, I kind of recognize it and just kind of move on, but it's something that I can improve on or something that I need to work on, so for example, I really needed to revamp my brochure for my media part in

Schmeekle because there's a lot of, there was a lot of errors with it, so, okay, it was kind of frustrating because I was like now I have to do this all over and the wife is just going to take slow, but I mean, you just gotta look at it from a new perspective and just remember the purpose of why we're doing this and just trying to have a positive mind not let the negativity boil over too much, otherwise, I'm just not gonna be able to focus and get anything done with it in the first place. So, yeah, I guess it varies. (Participant 5, interview 2)

There are times where we would do an exercise, a mindfulness exercise in the middle of, the beginning of class and I wasn't thinking about stress, but then right when my head is clear and I'm relaxed all of the sudden it just kind of comes in right in the middle of the exercise, which I mean, I welcome it because I definitely need to sort through it and understand it, so I can fix it. But then there are times where the, the bottle has exploded because of all the stress, where I do have to sit myself down and sort through all of the, the things that are stressing me out. (Participant 7, interview 1)

I think I use them to like think about those, to think about like the negative things. I think, um, just like in a way that I, I was still able to like kind of slow down my body and not stress as much but also like whatever is stressing about sort of think about it in like a slower like form, I guess of like how I was going to work it out and like do it. (Participant 4, interview 2)

Calming Down. Another reported reason participants believed mindfulness helped them feel less stressed because it gave them a chance to relax and calm down. While some participants calmed down by focusing on their thoughts and emotions, others used mindfulness to calm down by not thinking about their stressors. Many participants shared that they took mindful breaks when they were stressed while working on assignments, or even during practicum courses to calm down and de-stress.

One student said mindfulness “helps me calm down and focus more on like what I need to get done,” (Participant 3, interview 2). Other examples include:

And also just kind of getting outside and just kind of breathing and just kind of going back to basic human skills like touch, sense, smell, sight. Kind of surprising how just a little thing like that can really kind of calm you down. (Participant 5, interview 2)

I think for practicum, it's affected it by just remaining calmer and just gathering your thoughts and just taking that time to step back from everything because we do have so much going on all the time, um, between CWES and Schmeeckle, so I think it helps just helps you remember like you can take a break. You can stop and think about how you're feeling, how you're doing. Um. So, I think it's helped with practicum managing my stress and my emotions (Participant 2, interview 2)

How do Regular Mindfulness Interventions Affect Environmental Education and Interpretation Practicum Students' Mindfulness?

Previous Experience with Mindfulness

Participants started with different levels of knowledge and experience with mindfulness. Participants were asked to report their knowledge and experience of mindfulness in a demographic question that was added to the pre-Five Facet Mindfulness Questionnaire. Five participants had heard of mindfulness before but not practiced it (Participants 1, 3, 5, 8, and 9), three participants had practiced mindfulness before (Participants 4, 6, and 7), and one participant had practiced mindfulness regularly (Participant 2). Participants shared matching statements in their interviews.

Weekly Mindfulness Practice Impacts Mindfulness Level

A theme of increased mindfulness levels was found through the coding process. Throughout the interviews, participants reported feeling more mindful, even if it was just by a little bit. Specifically,

participants mentioned thinking about mindfulness more and using mindfulness more. For example, one participant said:

Um, I think I've been more aware of being mindfulness, mindful. Because typically, I don't normally think about it, but sometimes, you know, it pops into my head and it's like maybe I, I should be in the present moment right now and I should be thinking about what's going on around me and how I'm feeling and stuff like that, but I wouldn't say that, like, it comes naturally. I have to put myself into that mindset, but I tend to do that a lot more than normal.

(Participant 7, interview 2)

Two participants reported in their first interview that they did not feel more mindful, but by their second interview they noticed a change in their mindfulness level. One participant said "I don't know if I can say that they've changed from the beginning of the semester," in their first interview, followed by "I don't think it's like a huge change, but I noticed there's little changes, I guess some little baby steps," in their second interview (Participant 8). Participants also shared examples of ways they knew they were being more mindful.

Um, I've always liked going for walks in Schmeckle if I can, just by myself, um, and usually I have my earbuds in and I'm listening to something like a podcast or whatever while I walk, um, but since we've had those sort of, um, like walk visualization stuff and everything, I've started to not listen to things as much when I'm in the woods and to just sort of like have a more neutral thought, thoughtless kind of walk, you know, where um, I'm not thinking about bigger things or anything and I'm just, just focused on where I am, so just adjusting something I already do to be more, more mindful I think would be what comes to mind right away so. (Participant 9, interview 1)

I feel like I slowly started being more mindful throughout the semester, so if I was getting too stressed out, I would take a break and I'd go for a walk and I would either try to do like the walk meditation or the mindfulness activity we did. Sometimes during class if I was like, just during a listening lecture or even between classes I would even stretch sometimes just because my body just needed to move after so many zoom classes, so throughout the semesters being more mindful than normal too, so, yeah. (Participant 2, interview 2)

Though participants started with different knowledge and experience levels with mindfulness, they all reported feeling more mindful. Even the participant who practiced mindfulness regularly before taking part in this study (Participant 2) experienced an increase in mindfulness.

The interview data were also coded by the five facets of mindfulness. When talking about how their mindfulness levels have changed and how mindfulness has impacted their lives, participants made observations consistent with the five facets of mindfulness. One participant said, "I think I am more mindful, um, just like paying attention to what I'm doing and like when, and then kind of also paying attention to like, sort of how I'm reacting to certain things," (Participant 4, interview 2), which is an example of the facets of acting with awareness and nonreactivity. Another participant said, "I definitely have found that the activities that we did during the semester, they helped me, um, just kind of be aware of my own thoughts and not letting them just kind of take control," (Participant 9, interview 3), which would be another example of nonreactivity. The following quote is an example of describing and nonjudging:

I go on a lot of walks in the evening, whether it's a walk by myself or a lot of times I'll FaceTime a friend or family member. I'll kind of just tell them how my day went, tell them if I'm stressed or nervous about something and then they'll help me like talk through the situation, things like that. If I'm walking by myself, I'll kind of go through my day once again and see, oh, I made

progress on this. I'm feeling this way, but that's okay that I'm feeling that way. Maybe in the future, I can prevent feeling this way by focusing my thoughts on this or... So, I've incorporated it in that sense at the end of the day. (Participant 2, interview 1)

Another participant shared that mindfulness helped them sort through their feelings instead of bottling them up, saying:

If I find myself just like really irritated or like angry or just having negative, negative feelings in general, a lot of times I try to like dismiss it or tell myself "eh", or like "suck it up". Um, that doesn't really help because it just bottles it up for later, for later use, so I'll find that if I talk myself through it with mindfulness and I take the time to just relax and think through my feelings and stuff, it definitely calms me down. (Participant 7, interview 2)

This would be another example of nonjudging because the participant accepted their feelings instead of suppressing them. Some participants also mentioned that they liked the mindful journaling activity and use journaling when they are stressed, which could be categorized within the facet of describing. Many participants talked about feeling more aware of their surroundings, noticing nature and paying attention to sensations, which would fall under the facet of observing.

The Five Facet Mindfulness Questionnaire (n=8) confirmed there was an increase in most participants' overall mindfulness level as seen in Table 4. Despite many participants reporting being more observant in their interviews, there was an overall decrease in that area of the Five Facet Mindfulness Questionnaire. Participants increased overall in the other facets of mindfulness. The facet where participants showed the most improvement overall was awareness. However, the two participants that showed the biggest increase in mindfulness overall (Participant 1 and 9), changed the most in the facet of nonjudging. Participant 1 had the largest change in score from pre to post.

Table 4*Change in Pre and Post Five Facet Mindfulness Questionnaire by Participant*

Participant	Change from Pre to Post						Pre-total	Post-total
	Observe	Describe	Awareness	Nonjudging	Nonreactivity	Total		
1	4	2	4	13	3	26	127	153
9	1	0	4	13	-1	17	126	143
8	3	0	6	-1	4	12	98	110
2	-1	3	1	4	4	11	164	175
3	-5	0	9	-1	3	6	123	129
6	-1	6	-4	0	2	3	118	121
7	-6	0	7	1	1	3	99	102
4	3	-2	1	-5	-4	-7	124	117
Average	-0.25	1.13	3.5	3	1.5	8.88	127.48	131.25

Note. This table reports changes in Five Facet Mindfulness Questionnaire scores from pre to post where positive scores indicate an increase in mindfulness and negative scores indicate a decrease in mindfulness.

Participant 2 had the overall highest pre-score and post-score at 164 and 175, respectively, out of 195 possible points.

Additional Findings

Mindfulness Practices and Preferences

In-Class Interventions. During the interviews, participants shared their thoughts on the mindfulness practices used during class time on Monday mornings. Participants commented on the types of activities used, variety of activities used, and benefits of the timing of the mindfulness interventions. Preferences about the types of activities used varied between participants. Some participants preferred active mindfulness techniques, while others preferred meditation-type activities.

Um, I thought that the activity that we did this morning with the writing was very helpful. Um, that was probably my favorite one that we've done so far, um, just because it's a little more tangible, I guess. Um, and the other ones with the visualizations and stuff like that are nice, but I felt that I really connected with the, the writing one, so. (Participant 9, interview 1)

I guess the ones where you're actually actively doing something is the ones where I had a little bit less of a stress level versus the ones that had us just sit here breathing and just like thinking about it and then just let it go sort of thing. I don't do well with sitting still. (Participant 8, interview 1)

So, I feel like the meditation ones are like the more, most beneficial for me. Um, I mean, the other ones were fine; they were, they were nice, but I feel like the meditation ones are the most calming for me to do well. (Participant 3, interview 2)

Despite having different preferences of mindfulness activities, over half of the participants said they liked learning a variety of different mindfulness techniques. They reported that it helped them figure out which ones they liked and which ones worked best for them. They also said that it made them aware that there are many ways to be mindful. Some examples include:

I really appreciate it, all the different activities that you had us do, because some of them were not really my thing and some of them were really, really helpful, um, so I think it's good that you try to find lots of different things to get people maybe to connect with. (Participant 9, interview 2)

Yeah, in the beginning, I remember, um, I was, I was just so anxious. Like, I still am, but I feel like when I tried doing them, it didn't work. I just couldn't get my head around it. But now, like, I don't know, like the different techniques that you've been bringing us into I feel like, um, I finally found some that do work. And so, yeah, it was really interesting to see that progression,

progression over time from I guess from being skeptical about it to where I am now. (Participant 1, interview 2)

The following table (Table 5) shows each activity that was used during the in-class mindfulness intervention. The activity that resulted in the highest percent of participants with decreased stress was mindful journaling. In that activity, participants were given seven different journaling prompts to choose from, including prompts about gratitude, goals, and doodling (Nortje, 2021). Some participants also mentioned the journaling activity in their interviews and continued to journal outside of class time. The activity that resulted in the lowest percent of participants with decreased stress was object meditation. This activity included watching a video on how to do an object meditation and then spending a few minutes focusing on a single object, such as an object from nature (What Meditation Really Is, 2011).

Table 5

Percent of Participants Who Decreased Stress by Mindfulness Activity

Week	Activity	Percent of participants with decreased stress
7	Mindful journaling	85.7
1	Mindful breathing	77.8
5	Gratitude meditation	62.5
13	Observer meditation	57.1
2	Body scan	55.6
8	Guided imagery	55.6
9	Mindful seeing/observation	55.6
10	Mindful yoga	55.6
3	Mindful stretching	44.4
4	Walking meditation	37.5
12	Mindful eating	37.5
11	Sound meditation	33.3
6	Object meditation	28.6

Some participants also mentioned the benefits of using mindfulness during class time, and especially at the beginning of the week. Participants believed that starting with a mindfulness activity on Monday mornings helped them reflect and plan their week.

I think it's still like a good activity that EE teachers can really like implement into their classes at the beginning of the week or like around midterms or finals or something like that. I think it's really helpful. It kind of wakes me up too, because it makes me think about like, my presence and like, things in my life and it's a really good start to a Monday. (Participant 4, interview 1)

Uh, well, we started out doing mindfulness activities in class every Monday, I thought, those are really fun and I thought they were helpful too, um, first of all, just because our class is on Monday, so the start of the week and we did it at the very beginning of class, so it was just nice to start the week and the class week off, um, doing mindfulness activities because it kind of stopped you from thinking about your to do list right away and just taking a second to think about how you're feeling and everything else going on. (Participant 2, interview 2)

One participant also stated in multiple interviews that they felt the regular use of mindfulness in class made a difference in their practice, saying:

Uh, I've been exposed to mindfulness previously and other classes and everything, um, but I've never had it directly set aside like this every single class and I think it's been really helpful, uh, because typically, it'll be like a one-time deal and I'm like, 'Oh, that's nice' but then I just kind of forget about it, and I think that, um, having this constant exposure to different types of it has made me think about it a lot more and even try implementing it in my own life, so, outside of class that is. Yeah, it's been very helpful. (Participant 9, interview 1)

I've done mindfulness stuff in the past but never this consistently over the course of, you know, multiple weeks. Normally, it's just like, I've had teachers like 'you guys all seem really stressed,

let's watch a video about like breathing deeply or something.' It's like okay, I guess, whatever. Like it's, it doesn't seem to be taken as seriously or matter as much when it's just a one-time thing. So, yeah. (Participant 9, interview 2)

Outside of Class Practice. During the interviews, participants were asked to describe their mindfulness practice outside of the interventions that took place during class. Participants reported on the frequency, purpose, and timing of their practice, as well as their preferred activities. They also reported on their intentions for continuing mindfulness practice.

Purpose and Timing of Mindfulness Use. All participants reported using mindfulness outside of class to some degree. Participants varied in the amounts they practiced mindfulness outside of class as seen in Table 6. In the first interview, four participants reported practicing mindfulness at least daily, four reported using mindfulness at least weekly, and one participant reported using mindfulness activities as needed. In the second interview, no one reported a decrease in mindfulness use, but four participants had increased their mindfulness use. Participant Two reported that they had been practicing mindfulness regularly before the start of the study in the demographic questions and in their first interview, and reported using mindfulness the most frequently in both the first and second interview. Participants who had practiced mindfulness before, or had heard of mindfulness, but not practiced it used mindfulness outside of class with varying frequency. Participant Three used mindfulness outside of class the least amount. The four participants who completed the third interview reported that they continued to use mindfulness regularly. Despite differences, frequency of practice outside of class did not seem to have a relationship with how often participants experienced a decrease in stress due to mindfulness. By the second interview, most participants were practicing mindfulness daily or almost daily, but the percent of times they each experienced a decrease in stress after practicing mindfulness varied.

Participants used mindfulness in their personal time for various reasons. Many reported using mindfulness more often when they were feeling stressed, anxious, or overwhelmed. However, some participants also used mindfulness as a way to check in with themselves or when they were feeling positive. For example, one participant said:

I mean, I guess I don't necessarily use it when I'm just stressed. I mean, I can also, I also just do it just to kind of maintain my positive attitude. So, like for example, this morning I went for a walk. I mean, I wasn't stressed. I didn't bring my phone or anything. I mean, there was nothing I was

Table 6

Participants' Frequency of Mindfulness Practice Outside of Class

Participant	Previous experience	Frequency of practice		Change in frequency of practice
		Interview 1	Interview 2	
2	I practice mindfulness regularly	2-3 times/day	2+ times/day	no change
1	I have heard of mindfulness, but have not practiced it	1 time/day	1 time/day	no change
4	I have practiced mindfulness before	1 time/day	1 time/day	no change
8	I have heard of mindfulness, but have not practiced it	1 time/day	2+ times/week	no change
5	I have heard of mindfulness, but have not practiced it	3+ times/week	1+ times/day	increase
9	I have heard of mindfulness, but have not practiced it	3-4 times/week	1 time/day	increase
6	I have practiced mindfulness before	1-2 times/week	1 time/day	increase
7	I have practiced mindfulness before	1-2 times/week	3-4 times/week	increase
3	I have heard of mindfulness, but have not practiced it	N/A	1-2 times/week	N/A

worried about but I still wanted to go out there and just kind of Kind of do like a self-check, you know, you know what I mean? (Participant 5, interview 1)

Participants also commented on times they practice mindfulness. Some participants didn't use mindfulness at specific times; they just used it when they were feeling stressed or working on assignments. Other participants used mindfulness at specific times. For instance, many participants said they had started to incorporate mindfulness into their daily or weekly walks. Five participants specifically mentioned that they like to use mindfulness in the evening or night, with three saying that they used mindfulness to help them calm down, de-stress, and fall asleep. One participant said, "Yeah, I still do it mainly before bed and I'm trying to fall asleep and I need to calm my thoughts down a little bit" (Participant 9, interview 3). Another participant that regularly used mindfulness before bed said, "I do find that if I had already used a mindfulness exercise earlier in the day, that it is easier to fall asleep later in the day, probably because I don't have as many stressful things on my mind." (Participant 7, interview 2).

Types of Mindfulness Activities Used. Participants used a variety of activities in their personal practice of mindfulness. Some participants used primarily active practices, some used more reflective and meditative practices, and some used a mixture of both. Other participants incorporated mindfulness into daily activities.

All participants reported using at least one active mindfulness practice in their personal time. Active mindfulness practices that were mentioned include journaling and doodling, stretching, and yoga. One participant explained why this type of activity works for them as follows:

Hmm, um, definitely the activities, like I mentioned with the, the writing things that I can be doing, you know, like with a walking as well or um, I've been doing embroidery and using that also as a way to keep my hands busy and keep my mind kind of, kind of free. Um, those have

seemed to be the most successful for me, where if I have the, the double whammy, have nothing to do with my hands and nothing to do with my mind, that's just that's really tough to um, let go of. So, I think it seems to be that activities that are both active and the sort of mindfulness work, work pretty well. (Participant 9, interview 1)

Outdoor activities were also used by every participant, many reporting spending time outside or taking walks as one of their main activities. Running, walking, observation, and birding were all mentioned as ways participants practice mindfulness outside. Examples include:

I go on a lot of walks in the evening...If I'm walking by myself, I'll kind of go through my day once again and see, 'oh, I made progress on this, I'm feeling this way, but that's okay that I'm feeling that way, maybe in the future, I can prevent feeling this way by focusing my thoughts on this or.' So, I've incorporated it in that sense at the end of the day. (Participant 2, interview 1)

Um. I mean a favorite of mine is when I get to get the chance, I like to go outside and go birding. But like, when I'm going birding like, like we've done in that one activity is I don't bring any like technology or anything, like I don't listen to music when I go out and bird watch. So, it's like I'm not just birdwatching, but I'm also just like being aware of my surroundings like sense, smell, sight, texture, how the air feels, like the cold air because it's really cold lately, but um, I mean overall that one's my favorite because, like, it gets you outside and just kind of get away from everything for a little bit. (Participant 5, interview 3)

Reflection and meditation activities that participants used included breathing exercises, guided meditations, quiet reflections, body scans, object and sensory meditations, and observation activities. Eight of the participants used these types of activities in addition to the more active ones listed above. One participant said:

If I have a moment to just kind of like breathe for a moment and just kind of like, kind of focus on my breath and just kind of relax and not stress... I think that's the main mindfulness I've been doing now..." (Participant 5, interview 3).

A few participants also incorporated mindfulness into their daily activities. One participant said they are mindful while they cook because "it's kind of just an easy mindless task that you're just focused on one thing, kind of like that object focus, but you're focusing on doing something," (Participant 2, interview 1). Another participant mentioned being "mindful in the things you say, words you use, the tone of your voice," and being generally mindful at home (Participant 6, interview 2). Participants also reported lighting candles and focusing on them, taking breaks to read, taking breaks from technology, and using mindfulness while doing chores around the house.

All participants expressed that they intend to continue using mindfulness in the future. They believed they would continue to use some of the activities they were already doing, but many also said they would like to continue trying new practices in the future. One participant discussed how they planned to use mindfulness in their future job:

I had a similar internship where it was very, very involved and very like intense... and looking back at it now, I did not do a good job of handling like, stress and things like that. I remember, just like everything was overwhelming, and so I was thinking about it, and my kind of goal for this internship is to try and take time for myself to like go for a walk because, like I said, that was really helpful, um, even when I was at CWES, to go for a walk and just think about things and do a mindfulness sort of activity. So, I'm going to try and go for walks when I'm down there and kind of maybe take a drive... but I'm thinking about trying to find some quiet spaces there and walk to maybe a park or something like that and make that a regular routine so that I don't just get overwhelmed... It's kind of like Treehaven for us at Point where you're at a place and the

only thing you're doing there is focusing on what you're doing, and like, it's very like consuming, and I want to make sure I'm not just trapped by all of that stress. (Participant 9, interview 3)

Use of Mindfulness in School and Work

Over half of the participants shared that they had used mindfulness in their teaching or in their work settings. One student said, "I've enjoyed this mindfulness so much that I'm actually making my EE video on mindfulness," (Participant 7). Another student used a mindfulness activity in one of their lessons that they taught to first graders and said, "So, I did that because I thought that'd be kind of a cool thing that you should learn at a young age, or at least be aware of at a younger age," (Participant 8). Two other participants used a mindfulness activity in a webinar they conducted, and one participant mentioned using mindfulness in their job. Some participants also mentioned that they could see using mindfulness in their future careers. Finally, one participant talked about the importance of mindfulness for environmental educators and said:

I think it's, it's really important and I don't know if I realized that as much, um, before we did these activities is I know you said that this is supposed to help you know, like environmental educators, and I can really see how that's the case sometimes, how uh, we get so wrapped up in the teaching and the lessons and then it just becomes, um, it's really important to a lot of us, you know, a lot of us are in this field because it's like a passion of ours to teach but it's also important to kind of take a step back and just make sure that you are taking care of yourself too, because I know a lot of us, especially during practicum it is like, it's a lot, so it's really important that students are learning, too, the skills to make sure that they're still being able to you know, take care of themselves too. So, I think it was a really good, good, um, whole thing that you did, for us, and I appreciated it. (Participant 9, interview 3)

Mindfulness and Anxiety

Some participants shared how mindfulness specifically impacts anxiety, a subset of stress. Four participants believed that mindfulness was helpful for their anxiety. One participant said:

The mindfulness activity helps, it's just like I am not as like anxious about all of the things I have to do, I guess. It works with my anxiety, I guess, more than the stress because I still know that I have to do that, but I'm not as worried about getting it done. (Participant 4, interview 1)

Another participant originally believed that they had too much anxiety for mindfulness to be effective during the first interview, but by the second interview the participant had found some activities that worked and felt that mindfulness was beneficial. Overall, more than half of the participants specifically mentioned the effects of mindfulness on anxiety.

Summary

Thematic analysis resulted in the following themes: practicum involves stress, mindfulness impacts environmental education and interpretation practicum students, and mindfulness decreases stress for various reasons. The theme of mindfulness impacts environmental education and interpretation practicum students included the subthemes of: mindfulness impacts practicum experience, mindfulness impacts stress, and mindfulness impacts personal life. Subthemes of mindfulness decreases stress for various reasons included the reasons of: reframing stress and seeing the big picture, recognizing stress and emotions, and calming down. Themes of increased mindfulness levels and mindfulness practices and preferences were also found. Overall, environmental education and interpretation practicum students reported a decrease in stress throughout the semester due to regular mindfulness practices in their interviews. This was confirmed by data from the stress checks. Participants felt the reasons mindfulness caused them to be less stressed were reframing their stress in the context of the big picture, helping them become aware of their thoughts and emotions and letting

go of things out of their control, and by calming down when they were feeling stressed. Participants also reported an increase in mindfulness level, which was also seen in the data from the Five Facet Mindfulness Questionnaire. All participants practiced mindfulness in their own time and plan to continue mindfulness practice in the future.

Chapter 5: Discussion and Recommendations

The purpose of this study was to examine how environmental education and interpretation practicum students perceived the impact of mindfulness interventions, specifically with the sub questions of:

1. How do mindfulness practices affect the stress of environmental education and interpretation practicum students?
2. How do regular mindfulness interventions affect environmental education and interpretation practicum students' mindfulness?

Three interviews were conducted and thematic analysis resulted in the following themes: *practicum involves stress*, *mindfulness impacts environmental education and interpretation practicum students*, and *mindfulness decreases stress for various reasons*. The theme of mindfulness impacts environmental education and interpretation practicum students included the subthemes of *mindfulness impacts practicum experience*, *mindfulness impacts stress*, and *mindfulness impacts personal life*. Subthemes of mindfulness decreases stress for various reasons included *reframing stress and seeing the big picture*, *recognizing stress and emotions*, and *calming down*. Themes of *increased mindfulness levels* and *mindfulness practices and preferences* were also found.

Interpretation of Results

How do Mindfulness Practices Affect the Stress of Environmental Education and Interpretation Practicum Students?

Mindfulness Impacts Environmental Education and Interpretation Practicum Students. During the interviews, participants reported many different ways that practicing mindfulness impacted them. The theme of mindfulness impacts environmental education and interpretation practicum students

included the subthemes of mindfulness impacts practicum experience, mindfulness impacts stress, and mindfulness impacts personal life.

Mindfulness Impacts Practicum Experience. Participants believed that practicing mindfulness had positive impacts on their practicum experience. Mindfulness helped participants deal with stress related to their practicum course. Bamber and Kraenzle Schneider (2016) found that college students have increased stress and mindfulness helps to reduce their stress. The environmental education and interpretation practicum students not only experienced similar stress as a college students, but since they were in a practicum course where they were teaching students, they also may have also experienced stress or burnout that comes from working in a fast-paced environment where they were working with and helping other people (Stanfield & Baptist, 2019). As a result of participating in mindfulness activities, in addition to feeling less stressed, participants felt more comfortable teaching, reported that it was easier to focus on getting assignments done, that they were able to focus on teaching instead of worrying about forgetting their content, and that mindfulness helped them stay calm and present during lessons. Over half of participants also said that practicing mindfulness helped them to plan and prioritize their assignments and time. Participants also used mindfulness breaks during practicum to calm down and manage stress. Mindfulness had positive impacts on more than just the stress related to practicum.

Mindfulness Impacts Stress. One subtheme found from the analysis of the interviews was a decrease in stress attributed to mindfulness. Participants reported feeling less stressed directly after practicing mindfulness activities, as well as feeling less stressed overall. Some participants only felt less stressed immediately after mindfulness activities, others felt less stressed in general, and some still felt stressed but not as much as they thought they would be without mindfulness practice. State mindfulness is a type of mindfulness that occurs immediately after completing a mindfulness activity (Bamber & Kraenzle Schneider, 2016). Trait mindfulness is a more long-term habit of mindfulness. While

trait mindfulness is known to have impacts on a person's general stress, state mindfulness can impact a person's immediate stress level. Over time, as a person practices mindfulness and they experience state mindfulness, they begin to form trait mindfulness. Based on the data from the interviews, it seems that participants experienced state mindfulness that decreased their stress immediately after completing a mindfulness activity either during class or in their personal time. Some participants also reported feeling less stressed overall, which may indicate that they were also experiencing trait mindfulness.

Participants also thought that how stressed they were during a particular week had an impact on their stress checks. In interviews, participants reported that mindfulness helps them feel less stressed, however, there were many times in the stress checks that participants' stress levels stayed the same. It could be that participants felt a little less stressed, but not enough to jump a whole category (medium to low, or low to no). It is possible that with more choices of stress levels, participants would have marked a lower stress option after completing the mindfulness intervention. It could also be that when students started at a lower stress level, their stress did not decrease as much.

Mindfulness Impacts Personal Life. Besides impacting participants' practicum experience and stress levels, mindfulness also had impacts on other areas of participants' lives. Participants reported impacts such as noticing their thoughts and surroundings more, being more grateful, and being more thoughtful and patient. Participants believed mindfulness was beneficial in their lives and some participants reported using mindfulness even when they were not stressed to remain present in their daily tasks, such as taking walks or cooking dinner, or as a way to regularly check-in with themselves. The Mindfulness-to-Meaning Theory is focused on the concepts of reappraisal and savoring positive experiences (Garland et. al, 2015). The emphasis in this study was on the effects of mindfulness on stress, so reappraisal and other ways that mindfulness helped participants manage their stress were frequently discussed in interviews, but it seems that some participants were also able to savor positive experiences using mindfulness. This is important because practicing mindfulness regularly, not just when

stressed, can lead to the formation of mindful habits that may lead to trait mindfulness, which is long-lasting and results in more positive outcomes in psychological and cognitive health (Kiken, Garland, Bluth, Palsson, & Gaylord, 2015; Mantzios, & Giannou, 2019; Ruocco, & Wonders, 2013).

Mindfulness Decreases Stress for Various Reasons. Another theme in the interviews was that mindfulness decreases stress for various reasons. Participants reported multiple reasons that mindfulness helps them reduce and manage their stress. Sub themes included: reframing stress and seeing the big picture, recognizing stress and emotions, and calming down. The results are consistent with the Mindfulness-to-Meaning Theory and Monitor and Acceptance Theory.

The subtheme of reframing stress and seeing the big picture is consistent with the concept of reappraisal. The main aspects of the Mindfulness-to-Meaning Theory are reappraisal and savoring positive experiences (Garland et. al, 2015). Reappraisal is particularly important with stress. Reappraisal is encouraged through mindfulness meditation and is the process of reframing negative thoughts and emotions to find opportunities for growth and development. Participants were able to use mindfulness to become aware of stressors in their lives and then think about them calmly. The participants were then able to put their stress into perspective, which helped them see the big picture and know that they would get through the stressful moment they were in.

The subtheme of recognizing stress and emotions appears to be related to the Monitor and Acceptance Theory. The Monitor and Acceptance Theory is based on two of the main components of mindfulness: attention or monitoring of the present moment experience and acceptance, also referred to as nonjudgment or nonreactivity, of the momentary experience (Lindsay & Creswell, 2017). Several of the participants mentioned that mindfulness helped them recognize and think about their thoughts and emotions. In other words, participants were monitoring their thoughts through awareness. Through this process, they were able to let go of things that were out of their control or not important in the

moment. Participants accepted their thoughts and recognized which ones they needed to let go of and which ones they needed to sort through or reappraise.

In the Five Facet Mindfulness Questionnaire, participants had the highest overall change in the categories of acting with awareness and nonjudgment. The next highest facet of change was nonreactivity. Acting with awareness is similar to attention or monitoring because both involve paying attention to thoughts and actions in the present moment, and acceptance is similar to nonjudgment and nonreactivity. Since overall change in scores were highest in acting with awareness, nonjudgment, and nonreactivity, it would seem that the Monitor and Acceptance Theory can explain why participants were able to lower their stress using mindfulness.

The final subtheme of reasons that mindfulness reduced participants' stress was calming down. Many participants simply said that practicing mindfulness allowed them to calm down or take a break. While some participants used mindfulness to calm down by thinking through their thoughts and emotions, overlapping with the subtheme of recognizing stress and emotions, other participants used mindfulness to calm down by taking a break from their thoughts and emotions. These participants focused on their senses or nature to calm down. Participants that felt calm when they pay attention to their thoughts and feelings may have been practicing acceptance, while those who felt calm when they took a break from their thoughts and feelings, may have just been pushing their thoughts away (Lindsay & Creswell, 2017). In beginner practice of mindfulness, it is easier to monitor attention than practice acceptance, but accepting improves with practice (Lindsay & Creswell, 2017).

How do Regular Mindfulness Interventions Affect Environmental Education and Interpretation Practicum Students' Mindfulness?

Previous Experience with Mindfulness. Participants started with different levels of knowledge and experience with mindfulness. Five participants had heard of mindfulness before but not practiced it,

three participants had practiced mindfulness before, and one participant had practiced mindfulness regularly. The participant who had been practicing mindfulness regularly, Participant 2, may have started the study with trait mindfulness. This would be consistent with findings from the Five Facet Mindfulness Questionnaire. Participant 2 had the highest pre-score at 164 out of 195, which was 20 points higher than the next highest pre-score. The participants who had not practiced mindfulness at all, or practiced it, but not regularly would not have had trait mindfulness at the beginning of the study, but it is possible that they started to develop trait mindfulness throughout the course of the study because they reported feeling more mindful in their interviews (also seen in the Five Facet Mindfulness Questionnaire) and practiced mindfulness regularly outside of class.

Weekly Mindfulness Practice Impacts Mindfulness Level. Participants believed that their mindfulness levels increased throughout the semester due to using mindfulness every week, as noted in the interviews. The results from the pre and post Five Facet Mindfulness Questionnaire also showed an overall increase in mindfulness. It seems that regular mindfulness practice for five to fifteen minutes once a week for 13 weeks has a positive impact on mindfulness level.

Additional Findings

Mindfulness Practices and Preferences. Participants of the study practiced mindfulness at least once per week for five to ten minutes. All participants also reported using mindfulness outside of class and intended to continue using it in the future. Reported frequency of use ranged from once per week to once daily or more. Some participants reported using it more as the semester went on, as seen in changes from the first interview to the second.

Five to ten minutes of mindfulness was enough time for the participants in this study to experience benefits of mindfulness, similar to findings in other studies (Mantzios & Giannou, 2019). The literature review by Mantzios and Giannou (2019) suggests that mindful habits form the more a person experiences state mindfulness and makes mindfulness part of their daily routine. It is possible that the

participants would have had even more decreased levels of stress and increased levels of mindfulness if mindfulness was also used or encouraged in the other portions of practicum (CWES and Schmeckle). In addition, environmental education and interpretation students could be introduced to mindfulness practice in other courses leading up to practicum. This may help them with stress going into their practicum course and encourage them to use mindfulness activities in their own lessons and programs.

A variety of mindfulness activities based on recommendations in the literature were used to introduce participants to different ways mindfulness can be used. Activities included various mindful meditations, breathing exercises, body scans, mindful walks, mindful yoga and stretching routines, mindful journaling, mindful eating, and mindful observation activities (Albrecht, Albrecht, & Cohen, 2012; Biskner, 2019; Christopher, Christopher, Dunnagan, & Schure, 2006; Gillard, Roark, Nyaga, & Bialeschki, 2011; Poore, 2017). In data from the stress checks, the mindful journaling activity had the highest percent of participants that decreased stress, while object meditation had the lowest. In interviews, participants frequently mentioned using journaling, mindful walking techniques, breathing meditations, and observation activities. Participants had different preferences in activities, but they appreciated learning a variety of mindfulness techniques and having options.

Use of Mindfulness in School and Work. Some participants reported using mindfulness activities in their work or in their practicum teaching and programs. Mindfulness has been found to help teachers reduce stress levels, assist with behavior management strategies, improve self-esteem, create a holistic view of curriculum, and impact students (Albrecht, Albrecht & Cohen, 2012). Mindfulness has also been suggested for use in environmental education and interpretation settings to help engage audiences and increase learning, overall satisfaction and responsible environmental behavior of visitors and students of environmental education facilities (Frauman, 2011). Hopefully, by learning about and practicing mindfulness during a practicum course, environmental education and interpretation practicum students can start to develop a habit of mindfulness, that not only helps them manage their

stress, but will be useful in their jobs in the future. Based on this study, over half of the environmental education and interpretation practicum students used mindfulness in their lessons or work and some intend to in the future. This suggests that using mindfulness more often and becoming familiar with it, could impact how much environmental education and interpretation practicum students will use it in their careers.

Mindfulness and Anxiety. With the fairly frequent mention of anxiety, it seems that there may be a distinction in how mindfulness helped participants manage the anxiety associated with their stress. While anxiety occurs from prolonged stress or managing multiple stressors, some participants separated them and compared the effects of mindfulness on their stress and anxiety. One participant shared that they believed mindfulness helped more with their anxiety than stress and some reported that mindfulness helped with both anxiety and stress. For one student who reported having anxiety, it took longer for mindfulness to have an impact, but once the participant found activities they liked, they found mindfulness beneficial. Bamber and Kraenzle Schneider (2016) also found that people with higher trait mindfulness experienced decreased anxiety and stress.

Recommendations

Recommendations for Use of Mindfulness in Environmental Education and Interpretation Settings

Based on the results from the interviews and surveys, practicing mindfulness for five to ten minutes during class time once each week reduced the stress of the environmental education and interpretation practicum students that participated in the study. Some participants experienced a decrease in stress immediately after practicing mindfulness, and some also experienced a general decrease in stress. All participants began using mindfulness practices more regularly outside of class to manage their stress, as well as for other reasons such as focusing, checking in with themselves, and enjoying time in nature. The data suggests that regular, short mindfulness practices are beneficial in the

environmental education and interpretation practicum setting. Based on these findings, it is recommended to continue the use of a variety of weekly five-to-ten-minute mindfulness activities (Appendix H) in the environmental education and interpretation practicum course featured in this study to decrease stress and increase positive outcomes. Mindfulness practices could also be implemented in other courses leading up to practicum. Mindfulness practices may also be beneficial for reducing stress in related settings, such as in environmental education and interpretation careers, camps, and other university environmental education and interpretation programs.

Based on what participants said, mindfulness could also be useful when incorporated into programs for students and the public. Learning mindfulness during practicum courses might make environmental educators and interpreters more comfortable using similar practices in their careers. Mindfulness has had benefits when used in education settings that could also apply to environmental education and camp settings. Mindfulness helps teachers reduce stress levels, assist with behavior management strategies, improve self-esteem, and create a holistic view of curriculum, and can help both teachers and students achieve positive outcomes (Abenavoli, Jennings, Greenberg, Harris, & Katz, 2013; Biskner, 2019).

Participants of the study had different preferences of mindfulness activities. Some preferred more active ones, some preferred meditative activities, and some use different types of activities for different purposes. Many participants appreciated learning a variety of activities because it helped them to find the ones that worked for them and made them more aware of how they could incorporate activities into their lives. Based on these findings, it is recommended to provide a variety of activities when introducing people to mindfulness.

The length and frequency of mindfulness practice in this study was effective in reducing or managing environmental education and interpretation practicum students' stress. Mindfulness activities were completed for five to ten minutes once per week. In addition, all participants voluntarily practiced

mindfulness outside of class. Participants appreciated the consistency of practice and it may be beneficial to incorporate mindfulness practices more than once per week or across multiple classes.

Recommendations for Future Research

This study was primarily qualitative with quantitative data used as a method of triangulation. Due to the small sample size of nine participants, the stress checks and Five Facet Mindfulness Questionnaire were not used to check for significance. It could be useful to conduct a larger study with more participants across different environmental education and interpretation practicum programs. This would provide a larger and more diverse sample to conduct a quantitative study using similar methods that could be tested for significance. In addition, the participants in this study were all taking the environmental education and interpretation practicum course as majors. The Human Dimensions of Natural Resources Practicum course is also open to students with minors in environmental education and/or interpretation. These students may have majors in other natural resource topics or in education. Completing mindfulness activities for these courses at CWES or Schmeekle would not only introduce more students to mindfulness, but could provide diversity to the sample of participants.

It could also be helpful to replicate this study over more than one semester. The semester used to collect the data for this study was unique in that it occurred during the Covid-19 pandemic. In addition to the normal stress experienced by environmental education and interpretation practicum students, there was stress related to the pandemic. Participants were more nervous about going into practicum because they were not sure what to expect due to the possibility of having to go remote and changes in the programming offered at their practicum sites. Participants also experienced stress from worrying about the health of themselves and others. In addition, the study took place during a time with increased political stressors. It is possible that the pandemic and political climate created a more stressful semester than is normally experienced, so it may be useful to repeat the study with other semesters.

Futures studies may also include additional follow-up interviews to determine whether participants continued mindfulness practice over a longer-term. These interviews could be conducted six months or one year after participants graduated. These interviews would also provide information on whether the mindfulness practices participants use as working professionals differ from the ones they used as students. Follow-up interviews may also provide more insight on the development of trait mindfulness in participants.

Future studies may include questions on anxiety, or have participants rank their anxiety along with their stress. While stress results when a person believes a situation is more than they can handle, anxiety can occur when stress is prolonged and unresolved, or when multiple stressors are present (Bamber & Kraenzle Schneider, 2016). Anxiety is common in college students, and while some anxiety can have positive impacts on academic performance, high levels of anxiety can cause negative outcomes. Since over half of the environmental education and interpretation practicum student participants mentioned anxiety, it could be useful to not only study how mindfulness impacts stress, but also how mindfulness impacts the anxiety that can occur from stress in future studies. It would also be beneficial for participants to report whether they are experiencing normal anxiety or a diagnosed anxiety disorder. It may also be useful to include specific mindfulness practices that address anxiety.

Summary

The purpose of this study was to examine how environmental education and interpretation practicum students perceive the impact of mindfulness interventions. Three interviews were conducted and thematic analysis resulted in the following themes: practicum involves stress, mindfulness impacts environmental education and interpretation practicum students, and mindfulness decreases stress for various reasons. The theme of mindfulness impacts environmental education and interpretation practicum students included the subthemes of: mindfulness impacts practicum experience, mindfulness impacts stress, and mindfulness impacts personal life. Subthemes of mindfulness decreases stress for

various reasons included the reasons of: reframing stress and seeing the big picture, recognizing stress and emotions, and calming down. Themes of increased mindfulness levels and mindfulness practices and preferences were also found. The Five Facet Mindfulness Questionnaire and weekly stress checks both confirmed results of the interviews.

Environmental education and interpretation practicum students experienced a perceived decrease in stress due to practicing mindfulness once a week for five to ten minutes. Participants continued to practice mindfulness outside of the weekly class meetings and even after graduating. The reported reasons that participants believed mindfulness helped them lower or manage their stress were consistent with the theoretical frameworks of the Mindfulness-to-Meaning and Monitor and Acceptance theories. In addition to lowering stress, regular mindfulness practice was also found to increase participant's mindfulness levels, as seen in data from the interviews and Five Facet Mindfulness Questionnaire. Based on these findings, it is recommended to include regular mindfulness practices, as short as five minutes, in environmental education and interpretation practicum settings, or even other prerequisite courses leading up to practicum to reduce student stress and increase mindfulness levels. Mindfulness could also be useful to decrease stress and increase mindful awareness in related settings such as environmental education or interpretation careers, camps, and education settings. Future studies could include a larger sample size across multiple programs to test for significance, replication over multiple semesters to account for changes in stressors unrelated to practicum, or the use of mindfulness for anxiety in addition to stress.

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Appendix A

Informed Consent

Informed Consent to Participate in Human Subjects Research

Ellen Dolph, a graduate student at the University of Wisconsin-Stevens Point, would appreciate your participation in a research study designed to explore mindfulness as a practice to reduce stress in undergraduate practicum students in environmental education and interpretation enrolled in NRES 376/482. For this study, you are being asked to complete a pre and post semester survey on mindfulness, complete weekly mindfulness activities with brief stress checks, and participate in three short individual interviews. The survey should take up no more than 15 minutes of your time and will take place during your practicum training time. The mindfulness activities and brief stress checks will take place during class meeting times. The interviews will take no more than 30 minutes. The first two interviews will also take place during course meeting times. The final interview will take place one month after the semester has ended over the phone or online at a time and place convenient to you. Your participation is completely voluntary and not associated with performance or assessment in the course.

The benefit of this study is a greater knowledge about the perceived impacts of practicing mindfulness techniques on environmental education and interpretation practicum students and the ability of mindfulness practices to reduce stress and strengthen overall mindfulness.

We anticipate no risk to you as a result of your participation in this study. However, it is possible that while encouraging reflection on stress and emotions, you may feel some negative emotions. While the mindfulness interventions are meant to provide benefits to the you, it is also possible that you may feel uncomfortable or embarrassed completing them in front of other participants.

While there may be no immediate benefit to you as a result of your participation in this study, it is hoped that practicing mindfulness may aid in reducing practicum student stress and we may gain valuable information about mindfulness use in an environmental education practicum course to reduce stress that will be of future value to society.

We feel that the combination of surveys and interviews is the easiest method for obtaining this information. Survey data will be collected on paper and identified using an individually assigned number. Interviews will be recorded and referenced in writing with the use of a pseudonym. You may also choose not to participate as an alternative.

The information that you give us will be recorded and kept confidential. We will not release information that could identify you. All completed surveys will be kept in a locked file cabinet in the office of Dr. Becca Franzen and all electronic data will be stored under password protected access. The data will not be available to anyone not directly involved in this study.

Your participation in this study is completely voluntary. If you want to withdraw from the study, at any time, you may do so without penalty or loss of benefit entitled. All identifiable information will be removed from the study and destroyed or deleted.

Once the study is completed, you may receive the results of the study. If you would like these results, or if you have any questions in the meantime, please contact:

Ellen Dolph

College of Natural Resources

University of Wisconsin – Stevens Point

Stevens Point, WI 54481

(402)730-3555

edolp641@uwsp.edu

If you have any complaints about your treatment as a participant in this study or believe that you have been harmed in some way by your participation, please call or write:

Anna Haines, PhD

Professor, Natural Resource Planning

Director, Center for Land Use Education

800 Reserve Street

College of Natural Resources

University of Wisconsin, Stevens Point and Extension

Stevens Point, WI 54481

715.346.2386

irbchair@uwsp.edu

Although Dr. Haines will ask your name, all complaints are kept in confidence.

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Completing the attached survey indicates your consent to participate in the study.

Appendix B

Five Facet Mindfulness Questionnaire (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006)

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

1	2	3	4	5
never or very rarely true	rarely true	sometimes true	often true	very often or always true

- _____ 1. When I'm walking, I deliberately notice the sensations of my body moving.
- _____ 2. I'm good at finding words to describe my feelings.
- _____ 3. I criticize myself for having irrational or inappropriate emotions.
- _____ 4. I perceive my feelings and emotions without having to react to them.
- _____ 5. When I do things, my mind wanders off and I'm easily distracted.
- _____ 6. When I take a shower or bath, I stay alert to the sensations of water on my body.
- _____ 7. I can easily put my beliefs, opinions, and expectations into words.
- _____ 8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.
- _____ 9. I watch my feelings without getting lost in them.
- _____ 10. I tell myself I shouldn't be feeling the way I'm feeling.
- _____ 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.
- _____ 12. It's hard for me to find the words to describe what I'm thinking.
- _____ 13. I am easily distracted.
- _____ 14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.
- _____ 15. I pay attention to sensations, such as the wind in my hair or sun on my face.
- _____ 16. I have trouble thinking of the right words to express how I feel about things
- _____ 17. I make judgments about whether my thoughts are good or bad.
- _____ 18. I find it difficult to stay focused on what's happening in the present.
- _____ 19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.
- _____ 20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.
- _____ 21. In difficult situations, I can pause without immediately reacting.

1	2	3	4	5
never or very rarely true	rarely true	sometimes true	often true	very often or always true

_____ 22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.

_____ 23. It seems I am "running on automatic" without much awareness of what I'm doing.

_____ 24. When I have distressing thoughts or images, I feel calm soon after.

_____ 25. I tell myself that I shouldn't be thinking the way I'm thinking.

_____ 26. I notice the smells and aromas of things.

_____ 27. Even when I'm feeling terribly upset, I can find a way to put it into words.

_____ 28. I rush through activities without being really attentive to them.

_____ 29. When I have distressing thoughts or images I am able just to notice them without reacting.

_____ 30. I think some of my emotions are bad or inappropriate and I shouldn't feel them.

_____ 31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.

_____ 32. My natural tendency is to put my experiences into words.

_____ 33. When I have distressing thoughts or images, I just notice them and let them go.

_____ 34. I do jobs or tasks automatically without being aware of what I'm doing.

_____ 35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.

_____ 36. I pay attention to how my emotions affect my thoughts and behavior.

_____ 37. I can usually describe how I feel at the moment in considerable detail.

_____ 38. I find myself doing things without paying attention.

_____ 39. I disapprove of myself when I have irrational ideas.

FFMQ Scoring instructions

For all items marked "R" the scoring must be reversed. Change 1 to 5, 2 to 4, 4 to 2, and 5 to 1 (3 stays unchanged). Then sum the scores for each subscale.

Observing

1, 6, 11, 15, 20, 26, 31, 36

Describing

2, 7, 12R, 16R, 22R, 27, 32, 37

Acting with awareness

5R, 8R, 13R, 18R, 23R, 28R, 34R, 38R

Nonjudging of inner experience

3R, 10R, 14R, 17R, 25R, 30R, 35R, 39R

Nonreactivity to inner experience

4, 9, 19, 21, 24, 29, 33

Appendix C

Pre-Survey Demographic Questions

Please respond to each question.

1. Please list the last 4 digits of your phone number followed by your permanent zip code as your identification: _____
2. Age: _____
3. What is your year of study?
4. What is your experience level in environmental education work?
 - a. Please indicate whether your experience has come from classwork, volunteering, or work experience.
 - b. Please indicate the frequency of your experience in terms of number of classes, volunteer hours, or seasons worked.
 - c. Please briefly describe the nature of the work.
5. What is your prior knowledge and experience of mindfulness?
 - a. I have not heard of mindfulness
 - b. I have heard of mindfulness, but have not practiced it
 - c. I have practiced mindfulness before
 - d. I practice mindfulness regularly

Please describe:

Appendix D

Weekly Stress Check

Start of Block: Default Question Block

Q1 Please list the last 4 digits of your phone number directly followed by your permanent zipcode as your identification in place of your name.

Q2 Please click on the answer that best describes how you are feeling PRE-mindfulness activity

- no stress 😊 (1)
 - low stress 😊 (2)
 - moderate stress 😐 (3)
 - high stress 😞 (4)
 - extreme stress 😡 (5)
-

Q3 Please click on the answer that best describes how you are feeling POST-mindfulness activity

- no stress 😊 (1)
- low stress 😊 (2)
- moderate stress 😐 (3)
- high stress 😞 (4)
- extreme stress 😡 (5)

End of Block: Default Question Block

Appendix E

Interview Questions: First Interview

1. Tell me about your mindfulness experiences this semester (trait mindfulness (Bamber & Kraenzle Schneider, 2016)).
 - a. How do you think your mindfulness levels have changed since the beginning of the semester?
 - b. How do you think the mindfulness practices have influenced your practicum experience/ teaching/ personal life?
2. How would you compare your stress levels from the beginning of the semester until now?
 - a. How would you say mindfulness has impacted your stress levels?
3. Have you noticed any patterns in your stress checks throughout the semester?
 - a. Do you notice a lot of negative thoughts or stressful thoughts, feelings, and habits before, during, or after your mindfulness practice?
 - b. How does mindfulness practice allow you to notice and acknowledge these feelings, and reframe them into something more positive (reappraisal (Garland et. al, 2015))?
4. How have you continued your mindfulness practice outside of class setting.
 - a. How often do you use mindfulness outside of the group setting?
 - b. What types of mindfulness practices do you feel work the best for you and why?
 - c. What types of situations do you use mindfulness the most? Do you use it when you feel stressed?

Appendix F

Interview Questions: Second Interview

1. Tell me about your mindfulness experiences this semester (trait mindfulness (Bamber & Kraenzle Schneider, 2016)).
 - a. How do you think your mindfulness levels have changed since the beginning of the semester?
 - b. How do you think the mindfulness practices have influenced your practicum experience/ teaching/ personal life?
2. How would you compare your stress levels from the beginning of the semester until now?
 - a. How would you say mindfulness has impacted your stress levels?
3. Have you noticed any patterns in your stress checks throughout the semester?
 - a. Do you notice a lot of negative thoughts or stressful thoughts, feelings, and habits before, during, or after your mindfulness practice?
 - b. How does mindfulness practice allow you to notice and acknowledge these feelings, and reframe them into something more positive (reappraisal (Garland et. al, 2015))?
4. How have you continued your mindfulness practice outside of class setting.
 - a. How often do you use mindfulness outside of the group setting?
 - b. What types of mindfulness practices do you feel work the best for you and why?
 - c. What types of situations do you use mindfulness the most? Do you use it when you feel stressed?
5. How do you intend to use mindfulness after this semester?

Appendix G

Interview Questions: Third Interview

1. Tell me about your mindfulness practice since the end of the semester (trait mindfulness (Bamber & Kraenzle Schneider, 2016)).
 - a. Have you continued mindfulness practices? How often?
 - b. Which mindfulness practices have you found most useful? Which practices from class do you still use? Have you found any additional practices that you would recommend?
 - c. How has your mindfulness practice affected your life post practicum course?
2. How have your stress levels changed since the end of your practicum experience?
3. How do you plan to continue to manage stress and practice mindfulness in the future?
 - a. Have you been able to use any mindfulness activities to help in stressful situations?
 - b. How have you been able to use mindfulness to lower your overall stress, change negative thought habits, or reframe stressful experiences and emotions (reappraisal (Garland et. al, 2015))?

Appendix H:

Mindfulness Activities with Links

Activity	Link
Mindful breathing	https://www.mindful.org/a-five-minute-breathing-meditation/
Body scan	https://www.youtube.com/watch?v=Xo3PetVUclc&feature=youtu.be
Mindful stretching	https://www.youtube.com/watch?v=uf3SG1Hv-tA
Walking meditation	https://www.bing.com/videos/search?q=mindfulness+walking+meditation&&view=detail&mid=FC94B4980A9713EE2416FC94B4980A9713EE2416&&FORM=VRDGAR&ru=%2Fvideos%2Fsearch%3Fq%3Dmindfulness%2Bwalking%2Bmeditation%26FORM%3DHDRSC4
Gratitude meditation	https://www.bing.com/videos/search?q=5+minute+mindful+stretching&&view=detail&mid=2F83019E4273789001A22F83019E4273789001A2&&FORM=VRDGAR&ru=%2Fvideos%2Fsearch%3Fq%3D5%2Bminute%2Bmindful%2Bstretching%26FORM%3DHDRSC4
Object meditation	https://www.bing.com/videos/search?q=how+to+do+an+object+meditation&&view=detail&mid=6A64F2568F73F58FCBF16A64F2568F73F58FCBF1&&FORM=VRDGAR&ru=%2Fvideos%2Fsearch%3Fq%3Dhow%2520to%2520do%2520an%2520object%2520meditation%26qs%3Dn%26form%3DQBVR%26sp%3D-1%26pq%3Dhow%2520to%2520do%2520an%2520object%2520meditation%26sc%3D8-30%26sk%3D%26cvid%3DB0685EB516A741BC8976A4723EC1B847
Mindful journaling	https://positivepsychology.com/journaling-for-mindfulness/
Guided imagery	https://www.bing.com/videos/search?q=mindful+guided+imagery&&view=detail&mid=81C007C1916BB8B1855781C007C1916BB8B18557&&FORM=VRDGAR&ru=%2Fvideos%2Fsearch%3Fq%3Dmindful%2Bguided%2Bimagery%26FORM%3DHDRSC4
Mindful seeing/ observation	https://positivepsychology.com/mindfulness-exercises-techniques-activities/
Mindful yoga	https://www.youtube.com/watch?v=RcHIq- bATQ
Sound meditation	https://positivepsychology.com/mindfulness-exercises-techniques-activities/
Mindful eating	Raisin Meditation Practice Greater Good in Action (berkeley.edu)
Observer meditation	22 Mindfulness Exercises, Techniques & Activities For Adults (+ PDF's) (positivepsychology.com) A Meditation on Observing Thoughts, Non-Judgmentally - Mindful