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Rewilding Students To Establish A Slow Pedagogy In Short Term Environmental Education Settings

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REWILDING STUDENTS TO ESTABLISH A SLOW PEDAGOGY IN SHORT TERM

ENVIRONMENTAL EDUCATION SETTINGS

by

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CHAPTER ONE

Introduction

As a bright yellow bus rolls towards me and the welcome sign I stand in front of, I wave the driver down and he gets my message: slow down. The breaks squeak, the bus stops, the doors swing open, and I climb aboard to the sound of 50 or so chattery fifth-grade voices, feverish with excitement after a two-hour drive from their home. I shake a teacher's hand and we swap introductions. I ask them the best way to get the kiddos' attention and repeat the given 'greeter grabber' into the bus's intercom. Silence follows the students clapping in unison. As the bus heads to the luggage unloading area, I introduce myself to the students as their liaison for their field trip, give some preliminary directions, and by the time I am done, it is time to unload their belongings. Before the first sleeping bag makes it to the luggage rack, a little girl nervously asks me a question we frequently hear at Eagle Bluff Environmental Education Center: are there bears here?

Luckily, we have the ability to answer "no" whenever kids broach this question, putting them a little more at ease. However, that is all that it is: a *little* more at ease. This question is a microcosm of the unfamiliarity and negative notions many students feel when they find themselves in a natural outdoor setting, especially students from urban and suburban areas. It is also representative of the diminished connection between youth and wilderness. The primary goal of my capstone project is to rekindle this connection, in turn allowing them to better connect with themselves and others and providing grade school students the most comfortable and productive environmental education experience possible. I intend to do so by answering this question: *how can outdoor educators use*

"rewilding" to promote place meaning and attachment and in turn set up their students for improved learning and a positive outdoor experience?

As an environmental educator working at an environmental learning center, I plan on answering this question by constructing a rewilding curriculum with slow pedagogy and sense of place frameworks in mind and using it with school groups that visit. Before delving into this curriculum and the literature that support it, this chapter will provide a deeper explanation of slow pedagogy and rewilding, my personal connection to the topic, and the professional and academic experiences that have led me to believe why this project can have a positive impact on student learning.

What is Slow Pedagogy?

In what feels like the blink of an eye, those students that were unloading their luggage and beginning their experience at our center are putting their belongings back on the bus and heading home, waving goodbye to their instructors as they leave. We receive plenty of positive feedback from the parents and teachers that come along for their school's three day and two night trip. However, with their time here so fleeting, it is hard not to second guess the impact we have on our visitors. With around a hundred school groups visiting every year, the regularity of this thought can take a bit of a toll. Fortunately, the environmental educators at our center usually swap stories about the antics the students got up to while they were outside and reflect on their positive experiences, boosting morale and motivating us for the subsequent group of students.

These feelings of glee do not cover up the presence of the issue present. I recently discovered that my feelings of unproductivity in my job as an outdoor educator are not unfounded. In reading Payne and Wattchow's (2008) *Slow Pedagogy and Placing*

Education in Post-Traditional Outdoor Education, I found that a common deficit of modern outdoor education is how "objectified nature and instrumentalized spaces tend to be 'passed through' or 'over' as distinct from 'paused' or 'dwelled' in" (p. 25). This objectification and instrumentalization is a product of outdoor education placing importance on adventure and challenge in measuring efficacy, leading to the anthropomorphizing of outdoor spaces with human-made equipment and spaces (Payne & Wattchow, 2008). Through this, Payne and Wattchow (2008) believe that time as an aspect of place-based and experiential education is neglected, with individuals developing little to no sense of place, which includes place attachment and meaning, when participating in brief outdoor experiences. A good example of this is rock climbing, in which climbers use large amounts of gear to scale a wall. From an outdoor educational perspective, somebody leading a climbing expedition may measure the success of their customers' outdoor experience by the height and/or difficulty of the routes they completed. Another example can be seen at the environmental learning center where I work, where we offer canoeing and cross country skiing as classes, both of which heavily involve human-made equipment with success or failure measured by how well or poorly the students were able to canoe or ski. Payne and Wattchow (2008) would label these examples as "fast pedagogy" in outdoor/environmental education, with students having little to no time to stop and take in their natural surroundings.

Place attachment and meaning are necessary in place-based and experiential education, impacting students by giving them more of a sense of responsibility in caring for places. According to Teton Science School's (2021) concentric rings model, by developing place attachment and meaning in natural outdoor settings, individuals

eventually develop a broader understanding of their roles in and relationships with the environment. Payne and Wattchow (2008) created a slow pedagogy to promote place attachment and meaning with Australian university students as the subjects. They developed a semester-long class in which they organized a couple of three-day and two-night camping trips with activities that allow students to dwell in natural spaces. This case study offers some ideas for how to implement slow pedagogy in American environmental education but does not nearly answer my research question due to key differences between Payne and Wattchow's (2008) case study and my project:

1. They had university students as their subjects, most of whom had plenty of outdoor experience. I teach grade school students, much of whom had very little outdoor experience.

2. They had their subjects for a full semester and were able to prepare their students for their immersive nature experiences and had more time to assess and reflect on those experiences. I only planned for one three-hour class as my immersive experience with two subsequent days to assess its impact.

To combat the disadvantages of my project relative to Payne and Wattchow's (2008) case study, I wanted to utilize rewilding to implement a slow pedagogy.

What is Rewilding?

Stemming from environmental restoration efforts, rewilding is "the practice of returning areas of land to a wild state" ("Rewilding," n.d.). If we look at restoration from a human standpoint, it takes heavy human involvement to steadily bring an impacted ecosystem back to its former condition, or as close as it can get to its former condition. Once a natural area looks and feels more like it did in the time before industrial-minded

cultures introduced themselves, only then can it be considered rewilded. From there, a close eye must be kept on the restored natural area, nudging it back on track in case any outside influences knock it off-kilter.

More recently, the term rewilding has also been framed around humans that are members of industrialized cultures, substituting "areas of land" with "people" in the definition above. Many of the influences that reduce ecosystems from their wild state also apply to the denaturalization of humans: bustling concrete jungles, power lines that stretch for miles, fields teeming with oil pumps, and instantly accessible knowledge, to name a few. Some view this denaturalization as a type of domestication, with humans viewing themselves as separate from nature just as how humans view domesticated animals as separate from nature (Hafford, 2014; ReWild University, n.d.). The factors that lead to denaturalization and domestication come with some perks. Technological advancements that cause humans to stray from their wild origins have led to a substantially better standard of living for more individuals, their families and their communities. However, if these benefits did not coincide with some pedagogical detriments, I would not have selected this topic to research. Furthermore, I chose to research this topic not only because of rewilding's potential benefits for the students I teach, but also because I underwent a life-impacting rewilding of my own.

My Rewilding Story

Although I am aiming to receive a Master's in Natural Science and Environmental Education and use that degree to work in a field predominantly spent outdoors, I did not discover my love for nature until late in my life. I spent much of my early childhood outside but lost my wild spirit in my adolescent and teenage years, with most of my time

then occupied by video games and slabs of painted concrete measuring 78 by 36 feet (AKA a tennis court). Two years into my undergraduate studies, I decided for a change of scenery, opting to study abroad in New Zealand for the fall semester of my junior year. I could write a lengthy book on my time spent there, the people I met, the trails I walked, the classes I took, the things I learned, and everything else. Here, though, I want to focus on how my experiences in New Zealand reignited my wild side.

What I found interesting about my time abroad was that I went through the stereotypical study abroad experience: the honeymoon phase at the start, followed by a few weeks of homesickness about a month in and ending with a desire to never leave. We were all told about this sequence of emotions during our orientation but I brushed it off, thinking it would never happen to me. To my despair, the homesickness hit hard and I longed to see my friends and family across the Pacific. Fortunately, rewilding myself through backpacking in nearly every nook and cranny of the South Island led to the departure of my homesickness and love for the country, and its natural spaces, to set in. I spent every free weekend going to wild places that I would never have imagined in my craziest dreams.

Going on these incredible journeys gave me a newfound comfortability in the outdoors in which I quickly noticed myself becoming more like my wild self in tangible ways: not showering for days on end, inhaling my meals like a hungry owl, and staring into a campfire for hours. I escaped from any and all screens, the high speed life of academics, and staying up to date with world news, among other things. Less immediately, I realized the intangible ways I rewilded myself. Immersing myself in isolated and wild settings forced me to focus on immediate tasks and issues, whether it

was seeing how long I could submerge my body in a glacial pool or getting a fire going so we could cook that night's meal. This helped me realize how much personal stake I have placed on the external, uncontrollable factors in my life and the negative emotions this brought out in me. By focusing on my life's immediate setting, I also reignited the inquisitive side of my mind.

An exaggerated misconception, yet easier to grasp, understanding of human rewilding is that one must convert back to their primitive ways. When somebody thinks of rewilding, they may imagine a multi-day backpacking trip like the ones I embarked on in New Zealand. A more hyperbolized example one may think of is Christopher McCandless, the man who documented his fatal quest to "live off the land" in Alaska's last frontier, leading Jon Krakauer (1996) to write *Into the Wild*. However, from an educational and pedagogical standpoint, rewilding is framed more as a rewilding of one's emotional and mental state of mind. Imagine any scene from a movie or TV show where a caveman first discovers fire. The emotions they exhibit towards that fire are similar to the emotions I displayed during my rewilding experience.

As I described above, rewilding allowed me to put current events of my life front and center and push otherworldly issues deep into my mind's cupboard. This allowed for a resurfacing of wild human emotions. Curiosity about land formations overtook my previous disinterest in geology. My apathy towards wildlife turned into a passion for birding. Ignorance of my relationship with nature became inquiries of my role in the biosphere. By connecting with the lands where we as a species originated, we can rekindle the original emotions that the land used to bring out from us, just as I did. If this connection had such a substantial positive impact on my life at twenty years old, imagine

what it can do for a grade school student, whose young and developing mind, if given the chance, can deeply engrain the benefits of a wild learning mentality.

Why Rewilding?

Eagle Bluff uses the slogan "where learning comes naturally" to describe our overall pedagogy (*About Us*, n.d.). The large majority of our classes allow students to explore natural spaces with instructors providing information, questions and discussion prompts to help lead students towards understanding deeper concepts on their own. This student-centered style of teaching we utilize stems from the organization BEETLES, which stands for Better Environmental Education, Teaching, Learning and Expertise Sharing (The Regents of the University of California, 2015a). By providing students with a rewilding experience at the beginning of their trip, I believe it will do for students what rewilding did for me as stated previously: reignite curiosity about and passion for learning about nature and our relationship with it, among other things. The short duration of schools' trips to Eagle Bluff and where they come from also plays into my reasoning behind a rewilding class.

Due to the unintentional nature of my rewilding experience, I was lucky to have spent four and a half months in New Zealand, giving me ample time for it to occur spontaneously and naturally. I do not believe that most grade school students that attend environmental education centers have the benefit of unintentional rewilding, with the organization I work at hosting overnight school groups usually for three days and two nights. On top of that, I have lived in and traveled to various places throughout my life, making it easier for me to adjust to new surroundings. For many students, coming on overnight trips to environmental education centers is the first time or one the few times

they have been away from home. For urban and suburban students, the stress caused by their time away from home may be exacerbated due to being in a setting that looks and feels much different than one they are familiar with. Trees outnumbering buildings, the howls of coyotes at night, swarming gnats, and a night sky only lit up by the stars and the moon are just some examples of factors that throw many visiting students off their homeostasis. Building a positive sense of place between students and a novel setting can help improve their overall experience.

Sense of Place

Sense of place, which includes place attachment and meaning, represents one's relationship with and how they perceive a specific setting (Kudryavtsev, 2018). This perception also influences how they interact with that setting. Between individuals, they each have their own, unique sense of place when describing the same setting. They may have a similar sense of place about that setting, but unique perspectives and personalities skew one's sense of place from another's, even if they somehow share all the same experiences (Russ et al., 2015). For example, my place attachment to and place meaning of Eagle Bluff is similar to but different than another Eagle Bluff employee. For a student with a visiting school group, their place attachment and meaning for Eagle Bluff is basically nonexistent. A goal of my rewilding class is to create a positive sense of place for Eagle Bluff in visiting students. By achieving this positive sense of place, students will feel more comfortable, want to learn more about Eagle Bluff and the topics they are being taught, and realize their interconnectivity with Eagle Bluff, resulting in more healthy interactions with that environment.

Summary

My personal and professional experiences provide plenty of reasons for the creation of a rewilding class curriculum. These experiences, coupled with my academic experiences through Hamline and Eagle Bluff, also provide me with plenty of ideas to include in the curriculum and help answer my research question: *how can outdoor educators use "rewilding" to promote place meaning and attachment and in turn set up their students for improved learning and a positive outdoor experience?* Chapter two will provide a Literature Review that looks deeper into environmental and place-based education and evaluates the research done on rewilding. Chapter three will describe the methods of this class, including the ideal demographics of who it was taught to and when, the rationale behind the project, and how that curriculum would be assessed and evaluated after its implementation. Finally, chapter four will reflect on my capstone writing experience, including major learnings I had, major learnings others could gain from this project, and factors that interfered with the implementation of the project along with what I hope the future holds for this project.

CHAPTER TWO

Literature Review

This chapter reviews the contents of various literature and research to help piece together a curriculum that best answers this question: *how can outdoor educators use "rewilding" to promote place meaning and attachment and in turn set up their students for improved learning and a positive outdoor experience?* There is not much research on the implementation and potential benefits of rewilding under the umbrella of environmental education. The purpose behind this project is to find out how teaching a rewilding class at environmental education centers allows for a slower pedagogy, with the hope that it positively affects students' overall experience during their trips to these institutions through the development of a positive sense of place, which includes place attachment and meaning.

First, the review will define environmental education, review its history, including the purposes behind its introduction and continued use, its guiding principles, and the ideal teaching strategies that support these principles based on pedagogical research. Second, this chapter will review the importance of place-based learning in environmental education and this project. Finally, the chapter will analyze the benefits of rewilding on one's emotional and mental well-being and how it has been successfully implemented.

Environmental Education (EE)

Since the creation of this project took place at an established environmental learning center and thus within the context of environmental education, this paper first must define the term "environmental education" (EE). EE falls under the realm of informal learning environments as most of it occurs outside of a classroom (National

Research Council, 2010). The number of definitions for EE seems endless when reviewing literature on the subject so this text will use a provided definition that includes most of the elements from other definitions. Among those found, one of the first, most inclusive and well-supported definitions comes from the United Nations Environment Programme's (UNEP) Belgrade Charter (1976):

> Environmental education is a process aimed at developing a world population that is aware of and concerned about the total environment and its associated problems, and which has the knowledge, attitudes, motivations, commitments, and skills to work individually and collectively toward solutions of current problems and the prevention of new ones. (p. 2)

This section will break down the various segments of this definition and provide references from literature that further describe and support these segments. Before that happens, one must understand EE's origins and history, the principles that guide it, and the proven pedagogies that guide those in the field. With that knowledge, one will understand the frame this project is built upon.

History of EE

In the United States, EE came to fruition in 1970 when President Nixon signed the Environmental Education Act into law (Carter & Simmons, 2010). This act followed many cornerstone environmental protections acts, such as the Species Conservation Act of 1966. Although the lifespan of this law was only five years, it led to the establishment of many EE nongovernmental organizations, like the creation of what is now known as North American Association for Environmental Education, and the establishment of EE

conferences aimed at improving the field (Carter & Simmons, 2010).

The first international spotlight put on EE came in 1972 from the Stockholm Declaration on the Human Environment (Carter & Simmons, 2010). This declaration contained twenty six guiding environmental principles, with the nineteenth principle calling for "education in environmental matters, for the younger generation as well as adults" (UNEP, 1972, p. 5). Following the creation of this principle, UNEP created the definition above in the 1976 Belgrade Charter. The following year, international recognition of EE came in the form of the first Intergovernmental Conference on Environmental Education in Tbilisi, Georgia. Here, the Tbilisi Declaration was formed, which laid out the framework for nations that wished to establish EE (UNESCO, 1978).

From here, with the U.S. deciding to not renew their EE policies that the Nixon Administration put in place, the field stagnated and the rest of the world surpassed the U.S. in their EE capabilities (Carter & Simmons, 2010). Other national issues overtook the spotlight on EE, with some politicians and groups even targeting the morality of the field (Carter & Simmons, 2010). Hungerford and Volk (1990) noted environmental sensitivity as an important idea in the realm of EE but stated that due to the lack of focus on the importance of EE, there was a lack of productive means of EE and teaching strategies at the time. It was not until 2008 that the U.S. government reauthorized the National Environmental Education Act, also known as the No Child Left Inside Act, heavily influenced by the ideas in Louv's 2005 book *The Last Child in the Woods* (Carter & Simmons, 2010).

As EE has grown over the years, improving the field has focused on how the field can create a more environmentally literate citizenry (NAAEE, 2009). When a citizen is

considered environmentally literate, they are "aware of and concerned about the total environment and its associated problems, and…[have] the knowledge, attitudes, motivations, commitments, and skills to work individually and collectively toward solutions of current problems and the prevention of new ones" (UNEP, 1976, p. 2). If this definition looks familiar, it is taken from the above definition of EE.

Principles of EE

By breaking down UNEP's (1976) definition of EE into its various parts, you will find the field's framework principles:

1) Knowledge and awareness of the environment and its associated problems

2) Attitudes towards and concern for the environment and its associated problems

3) Skills to work towards solutions of current environmental problems and prevention of new ones

4) Motivations toward and commitments to the environment and its associated problems

Although "skills" follows "motivations" and "commitments" in the given definition of EE, "motivations" and "commitments" will be addressed after "skills" considering one must acquire skills to sustain a healthy environment before they commit those skills to sustainability. The following section will delve deeper into these parts by providing examples from literature that explain how these principles have been applied to EE following UNEP's defining of the field.

Knowledge and awareness of the environment and its associated problems. Education consists mostly of individuals learning information that they did not previously know. However, learning new information differs from gaining knowledge and

awareness; information is tangible while knowledge and awareness are intangible. The EPA (2018) stated on their website that EE is different from simply learning environmental information. Knowing environmental facts, such as *acid rain negatively impact wildlife in the watershed that it falls* or *deforestation leads to higher levels of carbon in the atmosphere*, is not nearly as impactful as understanding the deeper levels of those and other environmental issues. To enter those deeper levels of understanding, one must look at the "how" and "why" of the environment, its issues, and familiarize themselves with whole ecological concepts and the interrelationships between separate concepts (Hugnerford & Volk, 1990). In the realm of EE, knowledge and awareness of human influences on the environment and their associated problems is one of the most important concept interrelations students should learn. (Carter & Simmons, 1990; NAAEE, 2009; Thomas & Hoffman, 2003).

Similar to how chemists gain knowledge and awareness of chemistry through laboratory experiences, those undergoing EE gain knowledge and awareness of the environment through experiences in the environment (UNESCO, 1978). Personal experiences are indispensable in building knowledge and awareness as they provide context for understanding. Grasping the water cycle might be difficult for somebody that has never seen a body of water before. Knowing this, it makes sense that EE strives for students to gain knowledge and awareness through outdoor experiential learning. This experiential learning not only results in an increase in knowledge and awareness of the environment, but it promotes positive attitudes and concern for it as well.

Attitudes towards and concern for the environment and its associated problems. Throughout her novel *Braiding Sweetgrass*, Kimmerer (2013) shared stories

of her outdoor experiences that deepened her connection with nature. One of the many things she does to force readers to connect and empathize with nature is naming the common names of organisms as proper nouns. For example, where many would write "deer," she wrote "Deer." Horowitz (2013) supported this effort, stating that whenever educators bring out the human-like qualities of other organisms to the children they teach, it causes their students to empathize with those organisms. For this to happen effectively, it must happen in the correct setting: outside. According to Torkar (2014), many formal teachers from a variety of subjects and grades believe that spending time outdoors as part of experiential learning is the best way to instill care for the environment within children.

Hungerford and Volk (1990) described concern for the environment as "environmental sensitivity." Here, they also stated that this attitude stems from memorable outdoor experiences, not formal education experiences. UNESCO (1978) noted the importance of sensitivity to the total environment in the objectives of environmental education in the Tbilisi Declaration. Instilling this attitude of environmental sensitivity comes easier to students when instructors place environmental issues in the context of places that matter for students, whether it is their neighborhood or a natural place they grew up going to (Sobel, 2004). This is based on the idea of sense of place and will be elaborated on later in this chapter. By instilling sensitivity towards the health of the environment in students, developing the skills to protect the environment may come easier.

Skills to work towards solutions of current environmental problems and prevention of new ones. Including the Belgrade Charter (1976), many other relevant literature bring up the importance of the development of environmentally protective and

sustainable skills (UNESCO, 1978; NAAEE, 2009; Hungerford & Volk, 1990). Educators

that have taken advantage of putting environmental issues in the context of students'

local communities benefit their students' environmental literacy even more when they

have them engage in environmental remediation or sustainability projects in their local

communities (Sobel, 2004). Considering that learning about environmental issues is more

effective when put in the context of places that students care about, the development of

skills that protect the environment should stick with students better in that context as

well.

When reading the literature on EE, there is little mention of specific

environmentally sustaining or remediating skills other than in stories of educators having

their students engage in activities that involve sustainability or remediation. Smith (2002)

contains some of these stories, including river water quality monitoring and wildlife

population surveying. The only commonly mentioned skill in the literature is how to best

get students to continue learning about and investigating environmental concepts along

with solving environmental issues, both in and out of the classroom (Carter & Simmons,

2010; EPA, 2018; NAAEE, 2020; Thomas & Hoffman, 2003; UNESCO, 1978). The

main way that instructors influence the development of this skill is by creating a learning

setting that instills a sense of curiosity in their students, both in and out of class (Smith,

2002; The Regents of the University of California, 2015a). By successfully instilling this

sense of curiosity, instructors keep students feeling what the BEETLES Project referred

to as "Inquiry Fever," with a strong desire to glean new information through investigation

and question-asking (The Regents of the University of California, 2015a). The methods

that instructors use to bring out Inquiry Fever in students will be covered later in this

section. Instilling this curiosity is one of the ways to keep students motivated and engaged in environmental participation.

Motivations toward and commitments to the environment and its associated problems. According to Thomas and Hoffman (2003), excellent EE programs promote a sense of commitment to help create a healthier environment. Hungerford and Volk (1990) elaborated on this sense of commitment, stating that a major goal of EE is to produce citizens that participate in environmental maintenance and remediation. Much of this participation comes passively, in the form of continual development of one's environmental literacy, allowing citizens to make more informed decisions (Carter & Simmons, 2010; EPA, 2018). This type of environmental commitment and active participation stem mainly from place-based education, which will be described more in-depth later in this chapter.

Although these principles provide a basis for the creation of successful environmental education programs, they can also be used to assess the success of environmental education. In Chapter Three, this project takes these principles into account by viewing them as learner outcomes and measuring the effectiveness of rewilding and slow pedagogy on those outcomes. Better Environmental Education, Teaching, Learning, and Expertise Sharing (BEETLES), a project created by the Lawrence Hall of Science at the University of California Berkeley, provides environmental educators with resources reflecting these principles. These resources coalesce as an effective research-backed pedagogy that will be used to construct the curriculum for this project. It is important for one to understand this pedagogy and the literature that support its use.

BEETLES

The BEETLES Project designed their resources around five main principles but the three that apply most to this project are as follows:

1)   Engage directly with nature

2)   Think like a scientist

3)   Experience instruction based on how people learn. (The Regents of the University of California, n.d.)

This first listed principle applies well to the sub-themes of place-based education and rewilding. This principle and its connections to those sub-themes will be expanded upon in those sections.

Think like a scientist. This part of BEETLES pedagogy is where the aforementioned term "Inquiry Fever" comes into play. The BEETLES Project believed that teaching outdoor science by simply delivering information leads to the suppression of young students' innate sense of curiosity (The Regents of the University of California, 2015b). Although the rewilding class is not a science course, thinking like a scientist brings out the undermentioned wild emotion of curiosity. In order to bring out that curiosity and instill Inquiry Fever in students, the BEETLES Project provides environmental educators with teaching and questioning strategies that push students to make objective observations and use those observations to create tentative evidence-based explanations in response to an instructor's question/prompt (The Regents of the University of California, 2015a; The Regents of the University of California, 2015b). Some examples of strategies to prod observations are having students make "I wonder…" and "it looks like... " statements in regards to items they observe (The

Regents of the University of California, 2015b). By implementing these observation-related prompts and questions, students then begin to compile evidence, objective or subjective, that they can use to propose solid explanations behind what they observe (The Regents of the University of California, 2015a). These teaching and questioning strategies lead to the implementation of the principle "experience instruction based on how people learn" (The Regents of the University of California, n.d.).

Culturally Responsive Teaching. Zaretta Hammond (2018) stated that creating an intellectual environment where students are able to be investigators and essentially think like scientists is at the heart of culturally responsive teaching. As stated above, these kinds of environments promote curiosity in students. She cited the component of "I belong to this academic community" that Farrington et al. (2012) listed as part of a student's academic mindset to support her previous statement. By allowing students to take authority over their own learning, they begin to feel like they play an important role in their classroom community, especially if that learning happens alongside their classmates (Hammond, 2018). This kind of community building is a vital component of culturally responsive learning (Hollie 2017).

Experience instruction based on how people learn. The teaching and questioning strategies that originate from the principle of "think like a scientist" lead to the implementation of this principle. A large part of the BEETLES Project pedagogy is dependent on instructors using a teaching system that BEETLES terms the Learning Cycle. This research-based instructional model is very student-driven, involves many discussions between students, and made up of five stages that usually happen consecutively: invitation, exploration, concept invention, application, and reflection (The

Regents of the University of California, 2015c). The explanations of these stages will provide examples of what that stage may look like in a class about fungus, with the main concept of the class being "fungus plays the role of decomposer in an ecosystem."

Invitation. This stage consists of getting students interested and gauging their prior knowledge on the topic at hand (The Regents of the University of California, 2015c). For example, an instructor could provide dried out fungus samples and ask the students to construct a mind map based on those samples and their prior knowledge. Ideally, they do not yet know the class's main concept.

Exploration. This stage is typically the longest stage, where students, largely independent from their instructor, explore their natural surroundings in response to an exploration prompt from their instructor (The Regents of the University of California, 2015c). For example, an instructor might ask students to focus on what fungus predominantly grows on and try determining what fungus is doing to the substrate it is growing on.

Concept invention. This stage is the most important stage of the Learning Cycle and relates to the above principle better than the other stages. Here, ideally in a collaborative setting, students use their prior knowledge and what they found during exploration to make connections and construct new meanings of the class's theme (The Regents of the University of California, 2015c). This can be viewed as the "aha!" moment that students reach on their own, with supplemental questions and information from their instructor. For example, students conclude that fungus predominantly grows on dead things (e.g. broken branches, dead mice) and breaks down/decomposes the substrate they grow on based on their observations from exploration. This method of learning

natural concepts or phenomena sticks with students much better than if they were simply told about them (The Regents of the University of California, 2015c).

Application. This stage consists of students solidifying and deepening their understanding of the concept they invented by applying it to a different context (The Regents of the University of California, 2015c). For example, students observe how people take advantage of fungus' ability to decompose natural materials via the processing and use of compost.

Reflection. This stage applies well to the principle of "experience instruction based on how people learn" because students reflect on how they learned what they learned. From here, students ideally leave the class wanting to learn more about what they just learned about and with the mental toolkit to do so (The Regents of the University of California, 2015c). For example, students discuss what they did to learn the role fungus plays in the environment and how they can expand their knowledge on fungus outside of the classroom.

Understanding the history of EE is helpful in better understanding the principles that brought the field to prevalence, which are still very applicable today. The development of the methods in Chapter three partly relied on these principles and the pedagogies that guide them. Place-based education played more of an important role in methodological development.

Place-based Education

Place-based education (PBE) revolves around the idea that students create a better understanding of concepts when they learn in settings where they can observe subject matter in a real-world natural and social context, allowing them to also better understand

the roles they play in and the interconnectedness they have with their environment and communities (Anderson S.K., 2017; Cottonwood School of Civics and Sciences, 2020; Getting Smart, n.d.; Sobel, 2004). With the majority of the learning in formal education happening in a classroom setting, PBE infrequently happens. However, formal education institutions do sometimes utilize this pedagogy, like when schools go on field trips to Washington D.C. to better understand how America's political system operates or when an ornithology professor has their students survey bird numbers at a nearby migration resting site. Civic engagement is also utilized by formal schools as a form of PBE (Anderson S.K., 2017).

Informal education institutions, such as the environmental learning center where this project was created, heavily utilize PBE, with EE being one of PBE's derivative pedagogies (Anderson S.K., 2017; Payne & Wattchow, 2008; Science School, 2019). Due to this project being created at an environmental learning center where PBE is part of its foundation, this paper will focus more on the environmental aspect of PBE as opposed to the aspects of economics, governance, and culture (Anderson S.K., 2017).

Since individuals have always learned within the context of their families, their communities, and the places they live, there is no clear dawn of place-based education in the topic's literature and this section will not delve into its history like how the previous section looked at EE's history (Smith, 2016). Instead, this section will start by describing the connection between EE and PBE, the rationale for the use of PBE, and the role that time plays in place-based learning.

Place-based Education and Environmental Education

As stated above, EE is a derivative pedagogy of PBE, meaning that much of EE's

principles are founded in the principles of PBE. One major connection between the two is the emphasis put on student-driven and learner-centered teaching. This means that students have more freedom in how they learn, with instructors acting more as facilitators, and topics taught are relevant to students (Thomas & Hoffman, 2003). Some formal education institutions have increased class relevancy by letting students construct class curriculums to reflect their cultures and values (Paris et al., 2017). EE achieves learner-centered teaching by putting topics in real-world context and through the use of the Learning Cycle described above (The Regents of the University of California, 2015c; NAAEE, 2009).

Another big connection between EE and PBE is the focus placed on the roles students play in different settings. PBE's focus here is much broader, emphasizing the roles students play in their classrooms, which eventually expands to show their roles in their communities, home, region, and nation, among other things (Teton Science School, 2021). EE's focus is more specific, emphasizing the roles students play in environmental health through explanation of our interdependence with Earth (Carter & Simmons, 2010).

With responsible environmental action and remediation being a major goal of EE, developing a positive sense of place for natural areas is of major importance. With the word "place" in both terms, PBE also helps students develop a sense of place, which describes people's relationships with and perception of places (Kudryavtsev, 2018). By promoting positive place-based experiences in natural settings, students create more of an attachment with that place and ones similar to it. Furthermore, learning about natural concepts and phenomena in natural places helps develop ecological place meanings (Kudryavtsev, 2018).

Finally, Teton Science School (2021) described PBE as inquiry-based, meaning that learning comes best when students create relevant questions and curiosities about topics based on independent observations they have made. This connection is best displayed by the first principle of the BEETLES Project above, engage directly with nature (BEETLES Project, 2018).

Engage directly with nature. To consider EE as learning about nature and natural concepts, engaging directly with nature is the most fitting name that connects EE and PBE. To learn about natural concepts and phenomena, children learn best when they are intrinsically curious about those concepts and phenomena. When given the opportunity to engage directly with nature, students develop that sense of curiosity. When coupled with a teacher that is skilled in techniques that keep classes student-centered, this curiosity can turn into the aforementioned Inquiry Fever (The Regents of the University of California, 2015a). Much of this direct engagement with nature comes in the form of prompted exploration, the second stage of the Learning Cycle described above (The Regents of the University of California, 2015c).

Why Place-based Education?

Nabhan and Trimble (1994), in *The Geography of Childhood: Why Children Need Wild Places,* argued that education has moved away from the old-fashioned method of learning about the land through direct engagement with the land, or being "in the thick of it," and has moved towards placing more value on an instructor's "pre-digested images" of a topic (p. 106). For example, teachers telling students what indicates a healthy and unhealthy environment is more of a norm than having them find those indicators themselves. One notable novel that agrees with Nabhan and Trimble's sentiment is

Louv's *Last Child in the Woods* (2006) wherein Louv described his self-coined term "nature deficit disorder," an unofficial condition characterized by the development of diagnosable behavioral problems due to children not spending as much time outside. This stems from factors such as more fearful parents and the advancements of entertainment technology (e.g. video games, smart devices) (Louv, 2006). Making education more place-based, which usually is accompanied by children getting outside more, can help solve this issue.

Other than preventing the development of nature deficit disorder, reviewing the literature and research on PBE shows that students benefit from it in multiple ways. In benefit of individual students, schools that implement place-based curricula have shown increased school attendance and graduation rates, higher testing scores, and reduced punitive actions (Sobel, 2004; Akkaya Yilmaz & Karakuş, 2018). From a social standpoint, students become much more involved in and connected to their communities following PBE, promoting a sense of responsibility in students to contribute to the health of their community with communities reciprocating by assisting their local schools in various ways (Getting Smart, n.d.).

These benefits are major positive influences for teachers to implement PBE. In an ideal world, formal education institutions implement high-quality PBE and bring students to EE organizations, such as the one where this project took place, leading to immense student benefits. However, considering students spend relatively much more of their educational lives in their schools, PBE at their schools also has a much larger impact on them relative to the impact they receive from spending time learning at an EE institution.

Time and Place-based Education

Payne and Wattchow (2008) stated that environmental and outdoor education's established importance on place and PBE takes away from the importance of time relative to place. Furthermore, they also mention that a problematic aspect of environmental and outdoor education is the field's desire for students to undergo a return to wilderness given that there is not much time spent by students at EE organizations (Payne & Wattchow, 2008). No matter how little time students spend at EE organizations like the one where this project occurred, PBE and EE remain vital in rewilding students. With "time [remaining] under-theorised in environmental education" (Payne & Wattchow, 2008, p. 30), perhaps this project helped contribute to that minimized aspect. Understanding rewilding and how to effectively enact it plays a vital role in this contribution.

Rewilding

Frumkin (2001) put human's long-standing connection with nature in perspective, stating that "if the last 2 million years of our species' history were scaled to a single human lifetime of 70 years, then the first humans would not have begun settling into villages until 8 months after the 69th birthday" (p. 235). He used this analogy to introduce his idea that for people to keep themselves healthy from a holistic standpoint, they must keep their connection or reconnect with nature (Frumkin, 2001). Through this connection, wilderness is a part of human identity, fulfilling our desire to belong (McCallum et al., 2013). In reviewing the literature and research on this topic, there are not many reliable sources available. This shows all the more reason for this project to have taken place.

For the sake of this project, the term rewilding should not be viewed as the reversion of humans back to their primitive selves, like only hunting and gathering food, becoming completely nomadic, etc. Instead, it should be viewed as the rewilding of the mind. Hafford (2015) stated that rewilding of the mind means moving away from our domesticated selves, characterizing domestication as viewing nature as separate from humans. McCallum et al. (2013) supported this notion, stating that this separation is inherently unsustainable considering humans survived evolutionary pressures via their wild nature and living alongside wild nature. Now that biological evolution in humans is much more of a nonfactor, McCallum et al. (2013) believe taking control of psychological evolution and reorienting human nature away from individualism and towards relationships, both human and nonhuman. Hafford's (2015) ideas are also very similar to Louv's (2004) ideas on nature deficit disorder. An organization known as ReWild University, which offers online classes in how to rewild your mind, characterizes domesticized humans and our modern society as "violent, immoral, and selfish" (ReWild University, n.d.).

In order to return to a wild mind, one must replace our worldly judgments with curiosity, apathy with passion, ignorance with awareness, along with learning how to live with and take advantage of boredom and utilizing our underused senses more (Rewild University, n.d.). Much of this can be accomplished through the use of EE and PBE practices. For example, in a class about signs that animals leave behind, a student's thoughts of a coyote print may ignore everything else around the print and just focus on what kind of animal left those prints. Through the use of proper questioning techniques, those thoughts could change to figuring out why the coyote was traveling the way it was

or if it was with any other coyotes, among others. However, EE and PBE cannot fully accomplish all of the above goals of rewilding the mind. Although scarce, the literature and research on rewilding the mind show that there are activities, in correspondence with EE and PBE, that can help achieve a rewilding of the mind.

Rewilding Activities

For starters, on par with the BEETLES Project principle of "engage directly with nature," rewilding must obviously happen outside (The Regents of the University of California, n.d.). Unlike standard EE classes, in which engagement with nature has a focus on one or more concepts relating to natural science and/or history, this engagement with nature can happen less formally, as long as students are immersed in the outdoors and a general curiosity and wonder about nature arises (Sahn & Monbiot, 2014). Engagement can also be passive in the form of meditation or quiet walks (ReWild University, n.d.).

A more active way to revert students back to their wild psychological state is any form of play. Although nonspecific about what kind of play, McCallum et al. (2013) stated that play between children is a "prerequisite for the building, reinforcing, and restructuring of relationships, hierarchies, and alliances" (p. 146). He also stated that it is impossible to separate play from imagination and problem solving (McCallum et al., 2013). Hammond (2018) supported this statement, saying that play can be used as learning because that is what the young mind wants due to its stimulating effects. The residential environmental learning center where this rewilding curriculum was developed used many games and activities from an already established and heavily implemented curriculum that was developed as part of Hamline University's Master's program in

Natural Science and Environmental Education. In his capstone paper, Anderson B. (2017) utilizes these games and activities as a means for helping students connect with nature, citing Dr. Howard Gardner's Theory of Multiple Intelligences (Gardner, 1984).

Other activities were described in a dissertation by Thomas (2020), where she referred to rewilding of the mind as elemental rewilding, researching how the revival of innate emotional needs can contribute to helping those with mental health issues. Through her research, she found that some beneficial activities include sensory experiences, such as walking barefoot on grass or looking up at clouds (Thomas, 2020). This connects well to the idea from ReWild University (n.d.) that rewilding comes through the use of all senses. Looking up at clouds and thinking about what they look like brings up another theme of the activities she used: thinking creatively. She suggests the creation of music and dance brings "rewilding full circle" (Thomas 2020). One final activity she used is the telling of stories as a means for individuals to connect to other people, ancestors, or nature itself (Thomas, 2020).

Summary

Through the collection and analysis of various sources, having a better understanding of environmental education, place-based education, and the lesser known topic of rewilding provides a solid foundation for the creation of a rewilding class based out of an environmental education institution. Through the combination of the principles and practices of PBE and EE and what is known so far about rewilding, one can better answer the question: *how can outdoor educators use "rewilding" to promote place meaning and attachment and in turn set up their students for improved learning and a positive outdoor experience?* Chapter three provides a description and methods of the

class that can hopefully answer this question, including the goals of the class, the

rationale behind these goals, the audiences it could be implemented with, the educational

framework used to design it, a description of the class flow with various activities, and

how it can be assessed when it is eventually implemented.

CHAPTER THREE

Project Description

Environmental learning and natures centers across the world offer very short-term

learning and/or adventure opportunities for their users. The environmental learning center

where this project was framed around is no different. Due to the limited length of these

opportunities, one may wonder how effective this programming is at connecting

individuals to nature, promoting a sense of place and, in turn, promoting broader

environmental responsibility. Speaking from personal experience, I believe that

short-term environmental education does not do everything it can to set up students for

connection with nature and positively impactful experiences. I have seen and been hurt

by students with a strong desire to leave at the end of their trip to our environmental

learning center. I would not be surprised if these students received little meaning from

their trip, distracted by their discomfort in new and/or natural settings. I set out to figure

out if there was a way to set students up for success in short-term outdoor learning

environments as a means for increasing the impact of environmental learning and nature

centers.

Based on the literature reviewed, this chapter overviews the project used to

answer my research question: *how can outdoor educators use "rewilding" to promote*

place meaning and attachment and in turn set up their students for improved learning

and a positive outdoor experience? To set the scene for the rest of the project, I first must

describe the goal of the project, the setting where it takes place and the audience.

Following that, this chapter describes the research that this project utilized in its design,

the educational framework used to create the curriculum, a description of the project and

how it was implemented and evaluated.

Goal, Setting, and Audience

The goals of this project were to increase learning productivity and deepen connections students have with nature, each other, and themselves while immersed in short-term, intensive learning environments, such as the organization where this project was created. The setting of this project was a residential environmental learning center (RELC) in Southeastern, Minnesota. This RELC is found on a 250-acre campus made up of mixed hardwood forests and restored prairies with hundreds more acres of surrounding state forest land. The staff here usually consists of 14 seasonal educators and 7 permanent education staff. The large majority of the programming that occurs at this RELC happens in the form of school groups visiting for field trips, with a pre-COVID yearly attendance of ~13,000 students, teachers, and adult chaperones visiting from a variety of community types (urban, suburban, rural) in the Tri-state area (MN, IA, and WI). These visits usually last three days and two nights, with students taking four different three-hour classes and attending two different "naturalist programs." In the three-hour classes, students spend most of their time outdoors, learning about the subject of their class through direct engagement with nature that is facilitated by an outdoor educator trained in BEETLES teaching techniques and strategies.

The intended audience for this project was a visiting school group of fifth and/or sixth grade students. Ideally, these students would be from an urban or suburban area, considering that, from personal experience, rural students are more comfortable in a natural outdoor setting and more readily develop place meaning and attachment to this kind of setting. Even more ideally, this class would be implemented with a school/schools

where a majority of the student population come from underserved populations and/or communities of color. This is because according to a report from The Trust for Public Lands (2020) stated that parks serving nonwhite populations are, on average, about half the size of parks serving white populations, and parks in low-income areas are, on average, four times smaller and four times more overcrowded than parks in high-income areas. This means that students with these backgrounds will most likely feel much more uncomfortable with open natural spaces. However, the curriculum for this project will be designed for implementation for students of any age or background.

The setting of this project directly relates to the research question in that students usually only spend a few days at the RELC, limiting the time they have to build a sense of place, which includes place meaning and attachment. The concept of time influencing the development of place meaning and attachment is an under researched one and this project hopefully expands on the work done by Payne and Wattchow (2008).

Rationale

Payne and Wattchow (2008) brought up the poorly misunderstood importance of time in relation to place in experiential education, stating that outdoor education puts too much emphasis on measuring the quality of its programming via time-dependent factors, or such as distance hiked or the difficulty of a climb. This has led to the field placing much of its focus on developing a sense of place within students through "fast pedagogy," which includes participation in adventurous and challenging outdoor experiences (Payne & Wattchow, 2008). With this idea in mind, Payne and Wattchow (2008) aimed to develop what they referred to as a "'slow pedagogy in 'placing' education" (p. 25). They did so by developing a case study in which they facilitated a

class named "Experiencing the Australian Landscape" for Australian university students close to earning their degrees in outdoor education or a related field (Payne & Wattchow, 2008).

The class consisted of a) students reflecting on past outdoor experiences, using various readings and discussions to help reflect on the significance or insignificance of those experiences and what potentially contributed to their sentiments, and b) two three-day camping trips to a coastal part of Australia where students participated in various experiences such as beachcombing and snorkeling. During these camping trips, students were given time and space for reflection and discussion on their experiences (Payne & Wattchow, 2008). The use of human-made outdoor tools (e.g. kayaks, climbing gear) for these trips was minimal with the belief that it would anthropomorphize and therefore diminish the perceived human-nature relationship (Payne & Wattchow, 2008). By substituting activities touted as challenging or adventurous (fast pedagogy) with explorative, sensual, and imaginative activities (slow pedagogy), the overall experiences were shaped more by "nature's places, time and space and their affordances and constraints or limits" (Payne & Wattchow, 2008, p. 35). This slow pedagogy or "ecopedagogy, allows us to pause or dwell in spaces for more than a fleeting moment and, therefore, encourages us to attach and receive meaning from that place" (Payne & Wattchow, 2009, p. 15). This definition aligns well with the main concepts of rewilding described in the literature review.

Much of the criticism of fast pedagogy applies to the RELC where this project was created, with the most popular classes involving adventurous and/or challenging experiences, such as Group Challenges, Rock Climbing, Winter Survival, and a High

Ropes Course. There are classes offered that align more with the slow pedagogy described by Payne and Wattchow, but none of these classes involve rewilding experiences and are not offered to all students as their first class. This prevents students from immediately building comfortability and establishing place attachment and meaning, potentially leading to a less impactful overall experience. This project aimed to look further into Payne and Wattchow's case study and the potential benefits of rewilding and slow pedagogy on developing a positive sense of place in students that visit RELCs. To successfully do so, this project used the well researched educational framework known as the Learning Cycle from the BEETLES Project.

Educational Framework and Curriculum Overview

The BEETLES Project developed the Learning Cycle for environmental educators to frame their classes around (The Regents of the University of California, 2015c). This framework is made up of mostly consecutive phases of invitation, exploration, concept invention, application, and reflection. Backed by research, the Learning Cycle is used for all curricula at the RELC where this project took place.

Although the Learning Cycle was developed mainly for the grasping of natural science concepts, this Rewilding class still used the Learning Cycle but in a looser framework. By this, I mean that I planned to reveal the concept of "connection" to the students at the start of class as opposed to students inventing the entirety of the concept themselves. However, through activities and more informal post-activity debriefs, students would come to a deeper understanding of their connections to themselves, each other, and nature. As a means for comparison, my RELC's fungus class (AKA Fungus AmongUs) follows a tighter Learning Cycle framework. Through specifically prompted

explorations and carefully ordered guiding questions, most students are able to figure out the role of decomposer that fungi play in our biosphere.

Here is a brief synopsis of each part of the Learning Cycle for this class along with some example activities and questions. Since this class was not implemented, the following Learning Cycle descriptions are written in a format to show what the class would look like. The activities are written how they appear in the class's corresponding lesson plan.

- Invitation: At the start of class students would be asked to recall past outdoor experiences and how those experiences made them feel. Students would also be asked to discuss with each other what influences them to go outside and what influences them to stay inside. These prompts can help the instructor gauge the comfort level of their students in the outdoors.

- Exploration: In answering the question about what influences students to go outside, some students may provide "their friends" as an answer. Playing games with each other outside is a great way to deepen students' connections with each other and can make them more comfortable in a new environment. Since the students would be in a group designated by their teachers, students can "break the ice" with each other and deepen their connections with each other by participating in various group games and activities. Some of the games and activities found in the lesson plan are described below.

  a. Camouflage: One student is selected as prey and the rest are predators. In an area with plenty of places to hide (preferably a forest or a prairie in the late spring/summer), the predators are told to hide while the prey counts

down from 30. The prey can then open their eyes and, without moving

from their position, point out as many predators they can see. Once they

cannot see any more predators, the prey must close their eyes again and

count down from 10. The predators must move closer to the prey during

this countdown but cannot yet "eat" (tag) the prey. Again, the prey opens

their eyes and points out as many predators they can see. Once they cannot

see any more predators, they must again countdown from 10. The

predators can now "eat" (tag) the prey during this countdown. The

predator that eats the prey becomes the prey for the next round.

b. Park Ranger: This is a modified version of sharks and minnows. One

student is selected as park ranger and the rest are asked to think of (but not

share) an animal. Find a fairly open area and ask parent/teacher

chaperones to stand in designated border spots. The park ranger starts in

the middle of the area while the rest of the students stand in a

shoulder-to-shoulder line on one side of the play area. The park ranger

then says a characteristic that an animal may have (e.g., has four legs, can

fly, is warm blooded). If the characteristic stated matches any of the

animals selected by the lined-up students, they must run to the other end of

the border area, avoiding getting tagged by the park ranger. Tagged

students become trees in the play area and can tag students while

remaining stationary, turning other students into trees as well. The park

ranger keeps repeating animal characteristics until only one student

remains. The last student then becomes the park ranger.

c. Bat Moth: This is a modified version of marco polo. A few students and parent/teacher chaperones are asked to represent the border of the play area. The size of the area of play is determined by how many students there are. One student is selected as a bat and blindfolded while the remaining students are moths. Using "echolocation," the bat yells "bat" and the moths must respond with "moth." The bat must then tag as many moths as possible. The students and chaperones on the border tap the shoulders of the bat and moths if they get too close to leaving the play area. As moths get tagged, have them switch spots with students on the border of the play area.

d. Shelter building: in smaller groups, students are given 20 minutes to build a shelter that they can all fit in with natural materials. At the end of the 20 minutes, the class does a "shelter tour" together.

Games and group activities are a great way to get to know each other and build comfort in the outdoors. The students would be asked how they can get to know and deepen their connection with nature and themselves. After sharing their answers, students would be told that they would do some activities that hopefully would deepen their connection with nature and themselves.

● Exploration and Concept Invention: Students would develop a more tangible connection with the outdoors and themselves and become more comfortable with the RELC's campus by participating in various sensory activities. The activities in the curriculum would be scaffolded by student comfortability with instructors advised to start with activities in the "low comfortability" range. Some of these

"low comfortability" sensory activities found in the lesson plan are described below.

a. Color hunt: Students find as many different colored nature items as possible. You can lay out some paint chips and have students match their collected items to the paint chip colors.

b. Texture hunt: Students find as many different natural textures as possible.

c. Silent sits: Students find a private spot and listen for as many different nature noises as possible. Let them know that closing their eyes helps. If they are unsure about a particular noise, the instructor has the student recreate it. This is a great activity to do by the river.

d. Animal sign hunt: Students find as many different signs of animals as possible. If you find signs from different animals near each other, have the students come up with a story based on those signs.

e. Scattervations- Similar to Scattegories, students make as many observations about a nature object as possible in an allotted time, with a point earned for each observation. If students came up with the same observation, they had to cross them out, encouraging unique answers. Students can use multiple senses.

f. Cloud watching- Students think of things that the clouds looked like. This can be done in combination with the silent sit.

These activities would also promote curiosity in the students, pushing them to find/hear/feel things that they were unfamiliar with. The instructor would withhold from the students what those things were and ask probing questions to lead them towards a

potential answer.

Once students complete some of these "low comfortability" activities, they would be asked which of the activities they enjoyed the most and why they enjoyed those activities. They would also be asked how these activities made them feel towards nature and why being in natural spaces gives us those feelings.

Through those discussions, students would begin to relate their positive experiences and emotions to being immersed in nature and experiencing it through multiple senses. They also could begin to realize how these emotions and feelings were unique to their times in nature. From there more connections could be made via activities that fall under the scaffolded categories of "moderate comfortability" and "high comfortability."

- Exploration and Application: Students would participate in more immersive sensory nature activities to see if the feelings they generated from previous sensory activities could be continued and perhaps even enhanced. Some examples of these activities in the lesson plan are described below.

   a. Hug-a-tree: Students split into pairs with one student blindfolded and the other student guiding them. The guider brings the blindfolded student to an off-trail tree where they must create a mental image of the tree using their senses of touch and smell. The guider brings the blindfolded student back to the start point and lets them know that they can take their blindfold off. The formerly blindfolded student must then find the tree based on the mental image they created.

   b. Our natural world- Students find objects in nature, come up with ways

they are similar to that item, and how that item helps them.

    c.   Nature jam- Students find various nature items that they think will produce some stellar music. Once they all come back with their "instruments," take the role of conductor and let them jam out!

    d.   Get Muddy- Down at the river, give the students time to get their hands in the mud! They can make structures with the mud, smear it on their faces, or just get their arms deep in it.

    e.   Goldenrod Gall Eating- Find some goldenrod galls, cut them open, and see if any students are willing to eat the gall worms inside. Have the students that eat them describe the taste. This may convince some more students to try and eat them!

    f.   Create a story- Students find a nature object and come up with a story about their object. This can be done towards the end of class and can summarize their experiences from class. (Beginning of "reflection" stage)

- Reflection- Students would reflect on how they felt from their experiences in class and ways they can continue to connect with themselves, others, and nature back at home.

    a.   Whiparound: What emotions did you feel during this class? Which activity today was your favorite? What was one thing that you did today that you have never done before?

    b.   Think-Pair-Share: How can you continue to connect with each other while at Eagle Bluff? Yourselves? The outdoors? How can you continue to connect with nature after your trip at Eagle Bluff?

      c.   Group Discussion: If you don't have too many natural places around your house, what are some creative ways you can still rewild yourself?

Project Description

This class would have been implemented as a three hour class for a visiting school group at an RELC. It can be done with one or two instructors. The class is ideal for groups anywhere between 10 and 25 students. Having adult chaperones present is helpful for assisting with behavior management. They would also be allowed to participate in activities with the students if they wish. The format of the curriculum reflects the Learning Cycle described above, providing activities and questions for each part of the cycle. More than enough activities are provided for the instructor to use and they are given the discretion to pick which ones they find best suited to the students. Furthermore, they can run multiple activities at once and allow students to participate in the activities they want to do. The lesson plan also provides instructors with an approximate amount of time they should spend on each part of class in order to keep it within the three hour period. A quick disclaimer about the lesson plan is that it is unique to the campus where this project took place, listing specific places on this campus for instructors to facilitate certain activities.

Assessment

A qualitative assessment was created for this curriculum in order to determine its effectiveness at answering the research question. First, the rewilding class would be observed and implemented multiple times by me and the RELC's Outdoor School Manager to see how effectively the class could be implemented and how students would respond to the various activities. After that, the Outdoor School Manager and I planned to

observe the students in their following classes at the RELC to look for signs of how the rewilding class affected their learning, their general experiences being outside, and their comfort level on the RELC's outdoor campus. We also planned to observe groups that decided to not take rewilding in order to have some information to compare to those that did take rewilding.

Instructors at this RELC tend to start their classes by asking students about their experiences from earlier in their visit. To make sure assessment would be done, instructors with these groups would be told to take five to ten minutes to specifically ask about their experiences with rewilding and record their responses via writing or voice recording. The Outdoor School Manager or I would not be present during this part to make sure that students' answers would not be biased from us being in the room. Questions from this part of the assessment would include "how did rewilding make you feel about Eagle Bluff?" and "which parts of rewilding did you enjoy the most? Which did you enjoy the least?"

I also planned to use teachers and parent chaperones as part of the assessment, specifically teachers and parent chaperones that have been to this RELC with the same school group from years prior. This RELC heavily relies on feedback from Lead Teacher Interviews and Adult Feedback forms. In the Lead Teacher Interview, the Outdoor School Manager sits down with the teacher that organized the trip for the school toward the end of their visit. For assessment of this class, the Outdoor School Manager would ask how positive the students' overall experiences were, how student comfortability was compared to prior years and if they believed rewilding played a role in any differences between this year's trip and prior years' trips. For the rest of the adults on the trip, both

teachers and parents, I would make sure that on the Adult Feedback form, they comment on the effect rewilding had on the rest of their trip.

Summary

Describing the goals and rationale, ideal audiences, description and assessment of my rewilding class will allow for successful implementation following any tweaks that I or others deem necessary. By using the Learning Cycle as a framework for the class and mixing in Payne and Wattchow's slow pedagogy, students could create a stronger place meaning and attachment at environmental education institutions, allowing for more productive learning and a deeper connection with themselves, each other, and nature.Through the eventual implementation of this curriculum, a clearer answer to the research question could be developed: *how can outdoor educators use "rewilding" to promote place meaning and attachment and in turn set up their students for improved learning and a positive outdoor experience?*

Chapter four reflects on the major learnings I gained from trying to answer this research question, along with the sources that provided me with those learnings and how this project can beneficially inform those in the field of education, such as teachers, environmental educators, and future graduate students studying education. Chapter four also includes an explanation of the factors that got in the way of my further advancement of this project and my vision for the future implementation of the rewilding class I created, including how I plan on expanding the use of rewilding to the benefit of other educational organizations.

CHAPTER FOUR

Project Reflection

I began my capstone project journey with the intent to answer my main research question: *how can outdoor educators use "rewilding" to promote place meaning and attachment and in turn set up their students for improved learning and a positive outdoor experience?* Although I was unable to successfully implement the rewilding class that I created, the process provided me with plenty of personal benefits. The following chapter will cover these personal benefits, specifically the major learnings I had from the process, along with the sources that provided me with those learnings and how this project can beneficially inform those in the field of education, such as teachers, environmental educators, and future graduate students studying education. I will end the chapter by explaining the factors that got in the way of my further advancement of this project and my vision for the future implementation of the rewilding class I created, including how I plan on expanding the use of rewilding to the benefit of other educational organizations.

Major Learnings

While reflecting on my capstone project during a recent sleepless night, I began to think about the staggering amount of information I gleaned from the entire capstone creation process. At the forefront of this thought, I never realized I could learn so much about my field as a whole from researching a such a specific topic such as rewilding. As I thought about it more in depth, it began to make more sense that I could learn so much. I did learn much about the niche field of rewilding from Hafford (2014), McCallum et al. (2013), Sahn and Monbiot (2014), and Thomas (2020). During this research, I found many parallels between rewilding and environmental education. In writing my capstone

for it to make sense not just for environmental educators but all readers, it forced me to take a deeper look into and explain the field of environmental education as a whole, including the history of the field and the guiding principles, the established educational frameworks, and the research that went into establishing these principles and frameworks. I got much of this information from the North American Association of Environmental Education (2009, 2019), The Regents of the University of California (2015a, 2015b, 2015c), UNCESCO (1978), and UNEP (1972).

I greatly appreciated learning about such things as in my future, it will allow me to explain the field more in depth to those that wish to learn more about it, such as family members or close friends. Furthermore, it allowed me to learn much more about the field and importance of place-based education. An important factor of place-based education is developing students' sense of place, which includes place meaning and place attachment. I found the development of place meaning and place attachment vital to my project and included the terms in my research question because students, and everybody, are more comfortable and readily learn in environments that they are attached to and have meaning (Payne &Wattchow, 2008).

Much of the principles and educational framework of place-based education are similar to those of environmental education. However, place-based education can be used more broadly than environmental education in that it is more based in local communities and does not always require the presence of natural space. Learning about place-based education and sense of place gave me confidence that if I choose to pursue a career in formal education, I can translate some of the teaching techniques and strategies I have learned from environmental education. The most important information I found on

place-based education and sense of place came from Anderson S.K. (2017), Teton Science Schools (2021), Kudryavtsev (2018), and Payne and Wattchow (2008). From these sources, I learned about the importance of teachers of incorporating and taking advantage of their surrounding natural spaces and communities as a means for helping students gain a sense of ownership over their education.

By covering background information on rewilding, environmental education, and place based education, it allowed me to provide a clear rationale for the issue in the field that I hope my project will help eliminate. I found that Payne and Wattchow (2008, 2009) described this issue best, declaring that short-term environmental education experiences put too much emphasis on measuring the effectiveness on these experiences on physically measurable factors, such as the length of a backpacking excursion, or how physically challenging experiences are, such as climbing a difficult rock wall or traversing a high grade whitewater rafting river. Their statements felt incredibly relevant to my experiences in working in environmental education, and gave me solace that there are scholars that share these sentiments.

Payne and Wattchow (2008, 2009) termed this issue "fast pedagogy in environmental education," in which environmental educators do not allow their students to "slow down" and dwell in nature. This fast pedagogy disallows students of environmental education from taking advantage of the benefits humans can receive from observing the natural world around them and how intertwined it is with human life. Although they never state the term "rewilding" in their works, Payne and Wattchow (2008, 2009) mention their "slow pedagogy" that they implemented with a group of college students, which had many parallels to the information I found on rewilding. Just

as Payne and Wattchow provided me with information beneficial to my project, I hope that my project will prove beneficial for those in the field of education.

Implications

I believe that a major implication of my rewilding class is that it can help create a more equitable learning experience for students of underserved and marginalized communities. I believe that there is quite a discrepancy when it comes to comfortability in natural spaces between white students and students of color. Although this is based on my personal experience in working with students of different ethnic and racial backgrounds, The Trust for Public Lands (2020) performed a study that provided evidence to support my belief, with one part of the study stating that parks serving nonwhite populations are, on average, about half the size of parks serving white populations. Introducing students of underserved and marginalized populations to a rewilding class at the beginning of their trips to residential environmental learning centers could help shrink the gap between them and white students when it comes to comfortability in natural spaces.

To further support the relevance of this implication, I also found parallels between the elements of environmental education I included in my rewilding class and culturally responsive teaching. To be more specific, The Regents of the University of California (2015c) stated that students learn well when teaching is student-centered as opposed to teacher-centered, meaning they are more responsible for their learning through independent and/or group explorations and investigations that spark their curiosity. Hammond (2018) stated that this kind of authority given to students is at the heart of culturally responsive teaching. With schools in America tending to center on white

cultural history and values, students of color tend to feel left out, unable to fit in in settings that do not reflect or sustain their cultural values (Hollie, 2017). By giving students more authority in creating their learning environment, it allows students to feel more like a part of their community, specifically their classroom community (Hammond, 2018).

In using rewilding at environmental learning centers, it can also make instructors at these organizations more comfortable working with students that undergo rewilding. Behavior management for instructors at environmental learning centers can be challenging considering they work with students that they have just met and do not have much rapport built with them. Introducing them to a new environment on top of that can overwhelm students, making behavior management even more difficult. By eliminating this comfortability factor with rewilding, and supplementing this by training instructors in cultural sustainability teaching practices, instructors can have an easier time with behavior management.

In addition to the use of rewilding potentially leading to more equitable classrooms and more manageable classrooms for environmental educators, I hope that it could have a positive impact on all students, especially considering how the COVID pandemic has led to social isolation among kids and the inhibition for them to connect with nature and in turn, themselves. I have heard many stories about families getting outdoors since COVID does not spread as easily outdoors. However, as schools have started to visit my place or work again, many of the teachers and parents that come on school led trips here are grateful for the opportunity to get their kids outdoors and create memorable experiences. In talking with these teachers and parents, they are so grateful

because COVID has had major negative effects on their students' mental health, most of them citing less time spent outside as a major contributor. As we start to see the light at the end of this pandemic tunnel, I hope that environmental educators, and even teachers, utilize elements of rewilding in order to help reestablish students' love for the outdoors and in turn, a sense of normalcy in their lives. I also welcome adults to rewild themselves. I have been fortunate enough to have access to natural spaces throughout the pandemic and it has proved priceless in supporting my mental health through the pandemic. With COVID keeping more students indoors and isolated, the pandemic was also the main limitation to this project.

Limitations

At the beginning of my writing process, I hoped to implement my rewilding class. To get the most robust results possible, I hoped to implement it with school groups that have a majority underserved/marginalized student population because, as stated above, these groups have less access to natural spaces. Unfortunately, as the pandemic has revealed many racial disparities, access to residential environmental learning centers can be added to the list. All of our scheduled school groups with large minority student populations had to cancel their trips, preventing me from implementing it with these students.

I could have implemented this class with other visiting school groups but another limitation got in the way: lack of time. Eagle Bluff Environmental Learning Center and our staff hold our programming to a high standard, especially in the implementation of curriculum in our Outdoor School Program. Even just editing our current curricula takes quite a bit of time. Although I did not have ample time to bring this class to the standards

that Eagle Bluff wishes to provide to its students, I hope to continue working on it and implement it sometime in the near future. Another possible method of implementation could be through the sharing of my learnings and ideas with other educators, both in formal and informal teaching institutions.

Communicating Results

Through the eventual implementation of this class at Eagle Bluff ELC, I hope that visiting school groups take the lessons and benefits from rewilding and it inspires them to at least put some forms of experiential outdoor education into place at their schools. I feel like the hidden silver lining of the pandemic is how it has pushed people outside since COVID does not spread as easily in the outdoors. This may help my hopes that visiting school groups at Eagle Bluff take home rewilding themes and do more to immerse their students in nature. In getting this class and its themes to informal education institutions, particularly other environmental education organizations, I believe my best hope is leading a seminar at a conference. The Minnesota Naturalist Association (MNA) hosts a conference every November and I would love the opportunity to share my project at this conference or any other conference. My project can also be shared over virtual conferences/seminars and virtual meetings with other environmental education institutions, which I can also thank COVID for since virtual informational sessions are now much more prevalent.

Another group that I hope expands on my project are future capstone/thesis writers in post graduate education programs. By completing this project and making it viewable for others, others can use my work as a starting point for the improvement of rewilding.

Conclusion

By continually improving the quality of this class through implementation assessment and spreading its themes and messages to other educators and education organizations, I believe that it could be of great benefit to the field as a whole. Having more organizations get on board the rewilding train could create a new subdivision of environmental education where visitors can better connect with nature, an outcome commonly toted in environmental education. My research and creation of a rewilding class has given me valuable information on how students best learn in the outdoors and ways to make outdoor education more equitable for those that do not have access to the outdoors relative to more privileged groups. My research and creation of this class has also only scratched the surface of answering my research question: *how can outdoor educators use "rewilding" to promote place meaning and attachment and in turn set up their students for improved learning and a positive outdoor experience?* There is plenty of room for improvement and I look forward to seeing what the future of rewilding holds.

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