

## ABSTRACT

HEIGHT, TATIANA CHERELLE. Examining Multicultural Environmental Education: Toward a Unified Understanding. (Under the direction of Drs. Sarah D. Kirby, Maru Gonzalez, and Jamie Alexander).

Given the persistent environmental injustice in the United States, it is paramount to adequately prepare the next generation of advocates, activists, scholars, and professionals to address environmental injustice in their communities. Given that environmental injustice affects predominantly low-income and Black, Indigenous, and People of Color (BIPOC) communities, centering diverse voices from these communities is especially important in dismantling the false narratives that BIPOC or low-income communities do not care about environmental problems. Nevertheless, the environmental education field has historically served predominantly White male middle class students. One proposed method of responding to the educational needs of students from ethnoracially and socioeconomically diverse audiences is the use of Multicultural Environmental Education (MEE) (Runninggrass, 1994). This cross-sectional study explored environmental educators' conceptualization of cultural relevance in environmental education, the pedagogical theories and practices environmental educators use when working with students from racially, culturally, and socioeconomically diverse populations, the ways in which the concepts of MEE are being incorporated by environmental educators, and how environmental educators value MEE. Findings revealed no significant difference between racial identity groups' stated willingness to differentiate instruction with diverse audiences. Few of those who stated willingness to differentiate instruction were actually doing so and even fewer were doing so with pedagogies geared toward socioeconomically or ethnoracially diverse audiences.

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Examining Multicultural Environmental Education: Toward a Unified Understanding

by  
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A dissertation submitted to the Graduate Faculty of  
North Carolina State University  
in partial fulfillment of the  
requirements for the degree of  
Doctor of Education

Agricultural and Extension Education

Raleigh, North Carolina  
2022

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## **DEDICATION**

This dissertation is dedicated to the faculty, family, friends, sista scholars, and committee members who encouraged me to go on when I no longer felt the personal motivation to do so.

## BIOGRAPHY

I am a native of Chicago, an environmentalist, a hood feminist, and a scholar-activist. As a Black person from Chicago, I had very few opportunities to engage with nature as a part of my K-12 experience. It was not until I graduated from high school and went to college for Environmental Studies that I started to do things like hike, canoe, and rock climb. My sorority sisters in Sigma Alpha Professional Agriculture sorority, who were all from rural communities, were surprised that before college I had never built a bonfire, carved pumpkins, or been on a farm. It's not to say that by virtue of my Blackness I would inherently not do these things, rather, there was an unspoken expectation that urban Black students did not have a desire to do these sorts of activities. Therefore, they were not offered in my school or extracurricular settings.

During my sophomore year of my undergraduate studies, I had an internship experience in Washington State where I lived in a cabin and taught 5<sup>th</sup> and 6<sup>th</sup> grade students about ecology. In Washington, an environmental education program is required in elementary school. I observed that most of the students that I worked with were White children from affluent families. As I continued into my undergraduate education, and further pursued environmental education as a potential career track, I realized that affluent White people usually made up the student, parent, volunteer, and staff population. For instance, I was the only Black person on staff. I was also the only person who did not own a pair of Chacos, a brand of hiking sandals. Stated plainly, I was the only one who was unaware of the "environmental uniform" that I will describe later in the introduction. A pair of Chacos cost about \$100 and I could not afford them at the time. As I continued to be an environmental educator, I pined after these shoes. Finally, in 2019, when I took a role as an Outdoor Instructor for the summer, I purchased a pair of Chacos. When I showed up for my first day of work, I fit in with all of the White staff who sported their Chacos

as well. However, for some, they may take that unconscious signal as a sign not to be in environmental education spaces. During my time as an Outdoor Instructor, I was disappointed to see that I was the only Black employee on the entire Adventure Programs staff. Literature has explicitly stated the importance of recruiting an ethnically diverse staff and volunteer base that is reflective of the community (Johnston & Shimada, 2004). According to Stern et al. (2021), students reported greater satisfaction among majority Latine student groups when they had non-White instructors for their environmental education field trips in comparison to White students. Diverse student groups expressed higher degrees of satisfaction when there was at least one non-White instructor and highest degrees of satisfaction when there were no White instructors present. However, the majority (78%) of the field excursions analyzed for their study had only White environmental educators on staff (Stern et al., 2021).

During my time working at a nature camp in Michigan, there were only two times when groups of Black students came for an environmental education experience. Both times I enjoyed the comfort of speaking in African American Vernacular English (AAVE) and incorporating hip hop and dance into our lessons. Though it is important to note that the Black community is not monolithic and thus not all Black students may feel this way, the literature supports the importance of connecting the arts with the environment into a form of cultural expression in environmental education for communities of color (Cross, 2013; Johnston & Shimada, 2004).

I have also seen time and time again that Black people are not expected to engage in outdoor adventure sports. The Black Graduate Student Association at North Carolina (NC) State University, of which I previously served as communications chair hosted a block of events around stereotypes of activities in which Black people do not participate. One of the events was to take a hike at a State Park and have an [anti] picnic. This event was meant to break down the

generalizations around how Black people do or do not partake in outdoor leisure. I must admit that there have been times when I have engaged in outdoor activities such as white-water rafting or zip lining when I felt uncomfortable or scared, due to my lack of exposure to these sorts of things growing up, but I pushed through it. Even now, as an avid hiker, I will never go on a hike by myself in uncharted territory. I tend to go on group hikes only or take my dogs on paths that look easily navigable, where I can retrace my steps to the exit. The culmination of these experiences is but a part of what has fed into my current research interest.

During my junior year of undergraduate school I learned about the term *environmental injustice*. Since learning about environmental injustice, I have completed several research projects on the topic, acted as an advocate for change, and gotten involved with organizations that counter environmental injustices. environmental justice can be thought of as the marriage of the environmental movement with the civil rights movement. The components from the environmental movement center around ensuring a healthy natural environment. The civil rights component deals with the environmental burdens inequitably placed on marginalized communities and the unequal access to environmental benefits. For this reason, in academic spaces, environmental justice research can be found in science departments like Epidemiology, Atmospheric Science, Soil Science, Environmental Science, or others. However, research on the topic may also be found within departments such as Sociology, Environmental Education, Political Science, or other social sciences.

During my research I was somewhat shocked to learn that the city where I went to high school has perpetually been named as a textbook case of environmental injustice. This is due to the heavy pollution of the steel mill in a community where White Flight has left the population at over 80% African American. When I was in that area, we had always thought of the steel mill as

a prime location for well-paid employment, but my community never discussed that the mill was a public health issue. Throughout my engagement with the natural environment, I have wondered what might have changed if environmental education had been a required part of my elementary school experience, like it is for affluent White children in Washington. I have wondered if giving BIPOC students opportunities to connect with nature will make them more inclined to act to protect it. I wonder if environmental justice was a part of the conversation in more inner cities, what that can or will do to inspire youth to be activists on such issues. Thus, I focused my dissertation on examining how offering experiential environmental education programs to urban Black youth could develop their environmental consciousness.

This research idea was refined through my doctoral program coursework in courses such as: Climate Change Communication and Theory to Practice in Teaching Diverse Populations. Hearing about race and culture-based teaching pedagogies made me wonder how much more influential such a program could be if I used the same teaching strategies in the Black community. This led me on a research journey that led to me learning more about Afrocentric Pedagogy, Multicultural Environmental Education (MEE), and other critical pedagogies. However, MEE stood out the most. Though as I read, I noticed inconsistencies in the ways scholars understand and operationalize Multicultural Environmental Education. This led me to wonder if the same disconnect is occurring with environmental educators in the field. Therefore, I realized that before I could implement an experiential program, I needed to deepen my understanding of how other environmental educators conceptualize working with diverse populations. The short-term goal is for this work is to lay the groundwork for expansion of MEE in environmental education settings with a long-term goal of diversifying the pipeline of

conservation/environmental professionals. The following study is a result of this life's work and thought process.

## ACKNOWLEDGMENTS

I would like to acknowledge Drs. Dominiqua Griffin and Indira Turney for creating Black Women PhDs and the Black Women PhDs Women of Color Writing Accountability Group respectively, as a space for collective writing, support, and camaraderie. I would also like to acknowledge the colleague-friends that I made because of that group: Drs. Olivia Ngadjui, Jasmine A. Dillon, and Fushcia-Ann Hoover. Lastly, in the words of the great Snoop Dogg “I want to thank me for believing in me. I want to thank me for doing all this hard work. I wanna thank me for having no days off. I wanna thank me for never quitting. I wanna thank me for always being a giver and trying to give more than I receive. I wanna thank me for trying to do more right than wrong. I wanna thank me for just being me at all times, [Tots] you a bad motherf\*\*ker.”

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## LIST OF DEFINITIONS

1. **AGRICULTURAL EDUCATION** - Teaching students about “agriculture, food, and natural resources” (American Association for Agricultural Education, n.d.).
2. **BIPOC** - An acronym that stands for Black, Indigenous, or Person of Color.
3. **BLACK** - Black refers to both African people and people of the African Diaspora.
4. **CRITICAL ENVIRONMENTAL JUSTICE** - A concept that addresses modern phenomena such as intersectionality that were missing in past environmental justice studies thus closing gaps and questioning previously held assumptions (Pellow, 2016).
5. **CULTURE** - The rituals, traditions, practices, or adornments associated with an aspect of one’s identity such as race, nationality, religion, or ethnicity.
6. **CULTURAL COMPETENCE** - Being deeply rooted in one’s own culture and fluent in one or more other cultures (Ladson-Billings, 2009).
7. **CULTURAL RELEVANCE** - Having some significance relative to the culture of the consumer.
8. **CULTURALLY RELEVANT PEDAGOGY** - An instructional technique that embodies (a) A belief in the ability of all students to succeed academically; (b) Working with students to develop cultural competence; and (c) Cultivating sociopolitical consciousness with their students (Ladson-Billings, 2009).
9. **ENVIRONMENTAL EDUCATION** - “A process that helps individuals, communities, and organizations learn more about the environment, and develop skills and understanding about how to address global challenges” (North American Association for Environmental Education, n.d.) or “A multi-discipline line of teaching and learning that educates individuals to become more knowledgeable about their environment and to

develop responsible environmental behavior and skills in order to work for improved environmental quality” (Nordström, 2008, p. 133).

10. ENVIRONMENTAL JUSTICE - The activist movement and practice principles that have resulted from an inequitable distribution of power over land use decisions in marginalized communities.
11. ENVIRONMENTAL RACISM - The reality that racially minoritized people are more likely to shoulder an inequitable amount of environmental burden, reap few environmental benefits, and have little power over land use decisions in their communities (Bullard, 1990).
12. ETHNICITY - The cultural practices, such as customs, language, or values, of a group of people (Helms, 2007).
13. MULTICULTURAL ENVIRONMENTAL EDUCATION - A pedagogy that hopes to reignite a relationship between humans and the earth, and bridges global and local environmental issues, by incorporating cultural consciousness into environmental education (Martin, 2007).
14. PEDAGOGY - The method and practice of teaching, especially as an academic subject or theoretical concept (Oxford, n.d).
15. SYSTEMIC RACISM - Not the conscious dislike of other races but rather the ways in which the dominant group can deny rights to the other groups as a whole. This occurs when racial prejudice is backed by legal authorities and institutional control (DiAngelo, 2018).
16. WHITE - White refers to people of European Descent (American Psychological Society, n.d).

## CHAPTER 1: INTRODUCTION

### Background

My story, described in my biography, is not the only one of a Black person entering the environmental sphere and noticing the abundant Whiteness. Black environmentalist and writer Rasheena Fountain describes growing up on Chicago's West Side and experiencing punctuated exposure to environmentalism through a small garden in her grandmother's backyard. She also tells a story of a Black explorer adventuring to the North Pole but seeing Black people erased from environmental narratives (Fountain, 2020a; Fountain, 2021). Fountain's story has clear parallels to my own as she describes learning about environmental injustice on Chicago's West Side, for the first time, as a graduate student in Seattle. Alexis Cureton, a Black energy professional, describes the culture shock of being one of only three Black students pursuing the energy concentration within the Public Policy and Environmental Affairs master's program at Indiana University. He saw underrepresentation of Black students in the classroom and witnessed the underrepresentation of ethnoracially minoritized voices in the curriculum. He also noticed White classmates had the opportunity to engage in energy work much sooner in life as teens (Fountain, 2020b). In an interview with VoyageATL (2020), Black Millennials for Flint's Founder, President, and CEO, LaTricea Adams, recounts being moved to the environmental justice space as a result of the Flint water crisis and being enlightened about childhood lead poisoning of Freddie Gray (police murder victim). Upon entering the environmental realm, she was taken aback at the Whiteness and noted that while White allyship is important, Black and Latine folks must be at the center. Meanwhile, Black outdoors enthusiasts have to counter-narratives that Black folks have an aversion to being outside (Stewart, 2021).

There is a tremendous lack of every metric of equity (such as sharing power, resources, and decision-making authority with communities and organizations of color) and diversity (such as the proportion of women or BIPOC staff or board members) in the field of conservation (Bonta & Jordan, 2007). Taylor (2014a) published a report of findings surrounding the current state of diversity in the environmental field, based on surveys and interviews within almost 300 environmental non-government organizations, foundations, and government units. The study indicated that (a) more than 70% of presidents and chairs of environmental organizations are male, (b) BIPOC people make up less than 12% of leadership positions (compared to 38% living in the US overall) and are concentrated in low-ranking positions, (c) BIPOC people have low volunteer and membership rates in the environmental field, (d) few organizations have a diversity manager or diversity committee, (e) staff recruitment techniques foster unconscious bias, (f) BIPOC interns are rarely offered staff positions once their internship is complete, and (g) the dominant culture of conservation organizations is alienating to BIPOC, low-income, the lesbian, gay, bisexual, transgender/two-spirit, queer, intersex, asexual, and beyond (LGBTQIA+) community, and others outside the mainstream (Taylor, 2014a). Weintraub et al. (2011) suggested recruiting high school students who score highly on environmental science aptitude tests as a potential strategy for diversifying the environmental conservation sector. The lack of diversity in this sector has permeated fields adjacent to conservation, including environmental education (Martin, 2007; Roberts & Drogin, 1993; Russell, 2001). Due to this systemic problem, environmental education has a challenging time addressing the needs of BIPOC people and other underrepresented groups. Environmental education comprises a predominantly White participant base and Eurocentric curricula (Russell, 2001). If environmental education does not diversify its programs, this continues to perpetuate the lack of diversity in the conservation field. The

implications of this lack of diversity include culturally irrelevant programming, such as the exclusion or under inclusion of environmental justice from the curricula.

More needs to be done in environmental education to diversify the field. It is essential to recognize environmental issues as relevant to BIPOC communities (Bonta & Jordan, 2007). Given the ongoing environmental racism plaguing such communities, environmental issues, such as climate change and pollution, have relevance to BIPOC communities (Taylor, 2014b). This is especially important given that “the environmental crisis is more social than ecological in nature” (González-Gaudiano, 2006, p. 298). Environmental injustice describes the lack of political power that marginalized people tend to have over land-use decisions in their communities (Taylor, 2014b). For instance, the acronym NIMBY or “not in my backyard” describes how affluent White communities have the power and influence to keep environmental hazards from their backyards while tacitly pushing said hazards into Black and brown communities. Environmental racism describes the reality that racially minoritized people are more likely to shoulder an inequitable amount of environmental burden (e.g., exposure to hazard sites), reap few environmental benefits (e.g., adequate access to parks and greenspace), and have little power over land-use decisions in their communities (Batra, 2014; Bullard, 1990).

Darkwa (2011) asserts that “there is a need to empower people, especially the youth living in areas where [environmental injustices] are ongoing... only through such means can strong communities of resistance and planning be developed to address issues of injustice” (p. 317). However, Black mothers must keep their children from outdoor recreation, such as environmental education, because there is a perception that such programs perpetuate racism or tokenism and discriminate against Black children (Hallmon et al., 2020). To address this under-participation, some researchers have suggested environmental education projects for schools and

youth groups as a part of a long-term strategy of education and information (Johnston & Shimada, 2004). It is also important that any such program be relevant to the involved students' cultures.

Culture and ethnicity are concepts that many people find difficult to define or understand (DeCuir-Gunby & Schutz, 2017; Helms, 1992; Helms, 2007). Given that educational settings reflect the broader society, the nebulosity of the understanding of culture has also permeated learning environments. For example, classrooms and other learning spaces have perpetuated only dominant White ideals such as meritocracy and individualism (Hollett, 2020; Liu, 2011; Mijs, 2016; Sundquist, 2002). Ford (2017) warned that culturally incompetent educators run the risk of impairing the educational experiences of Black students. Thus, consistent and meaningful professional development about cultural differences that includes defining and understanding cultural differences without deficit ideologies is critical (Ford, 2017). Many scholars in the field of education have studied the best practices for merging culture and classroom, producing such pedagogies as culturally relevant pedagogy (Ladson-Billings, 2009), culturally responsive pedagogy (Gay, 2002), and culturally sustaining pedagogy (Paris, 2012). While these pedagogies thrived in certain educational circles, they were vastly underutilized in *environmental* education circles. This cross-sectional (aka point in time) study examined how environmental educators, including those who have self-identified as understanding or delivering programs that cater to diverse audiences, understand and conceptualize cultural relevance.

### **Purpose**

This study aims to gain a better understanding of how Multicultural Environmental Education is understood and used by environmental educators. With that in mind, the following

research questions were produced, guided by the dimensions of Multicultural Environmental Education (MEE).

### **Research Questions**

1. RQ #1: How do environmental educators conceptualize cultural relevance in Environmental Education?
2. RQ #2: What pedagogical theories and practices do environmental educators use when working with students from racially, culturally, or socioeconomically diverse populations?
3. RQ #3: How are the concepts of Multicultural Environmental Education incorporated by environmental educators, if at all?
4. RQ #4: How do environmental educators value Multicultural Environmental Education?

### **Significance**

As shown in the literature review portion of the current study, there is little literature on MEE. The literature that does exist demonstrates that there is an uneven understanding of the proper way to implement MEE programs. The existing literature suggests a need for further research, training, and education on MEE. This study illuminates areas of agreement and disagreement regarding best practices for environmental education of diverse audiences. It also sets the foundation for building consensus about how to practice MEE as an environmental educator. Marouli (2002) conducted a comprehensive study of nonprofit organizations that do MEE to understand what activities these organizations did and which audiences they served. However, this study is now twenty years old and only addressed organizational-level MEE work rather than individual-level MEE work. Currently, no study has addressed building a unified understanding of MEE. This study fills a gap in the literature in that it reports point-in-time data

regarding the understanding and use of MEE among environmental educators in North America. While point-in-time data does not show historical changes in the field, nor can it account for the potential for future changes in the landscape, it is valuable for understanding current conditions.

### **Study Assumptions**

This study assumed that participants were truthful in their responses to the survey questions. It also assumed that MEE is an appropriate pedagogical technique for educating diverse audiences about the environment and that it would be a useful approach for amplifying diverse perspectives in environmental education.

### **Environmental Racism and Justice**

As noted earlier, environmental racism describes the reality that racially minoritized people are more likely to shoulder an inequitable amount of environmental burden (e.g., exposure to hazard sites), reap few environmental benefits (e.g., adequate access to parks and greenspace), and have little power over land-use decisions in their communities (Batra, 2014; Bullard, 1990). This occurrence is common in BIPOC communities. *In No Ashes in the Fire: Coming of Age Black & Free in America*, Moore (2018) talks about the horrid stench coming from a trash incinerator while growing up in the 94% BIPOC city of Camden, New Jersey. Further, Hill (2016) describes the water crisis in a predominantly Black city, Flint, Michigan. Residents in Flint have gone years without access to safe drinking water because of poor decision-making by a representative appointed by the state and an apathetic governor (Hill, 2016). Environmental racism is a subcategory of the broader systemic racism in the United States and many other parts of the world. It encompasses a variety of natural resource and land use concerns (Martinez, 2020). Climate change is a prime example of one of the environmental burdens that are most harmful to BIPOC people. While the climate crisis is a global problem

affecting people of all races and socioeconomic statuses, the level to which the problem impacts different groups is not identical (Acton & Saxe, 2020).

In Mary Robinson's (2018) book, *Climate Justice: Hope, Resilience, and the Fight for A Sustainable Future*, she stated that "the fight against climate change is fundamentally about human rights and securing justice for those suffering from its impact – vulnerable countries and communities that are the least culpable for the problem" (p. x). Robinson further makes the case that "to deal with climate change, we must simultaneously address the underlying injustice in our world and work to eradicate poverty, exclusion, and inequality" (2018, p. 8). While Robinson specifically refers to a sub-issue of environmental racism, climate injustice, the same principles apply to environmental injustice more broadly. While environmental racism speaks specifically to the environmental harms to BIPOC communities, environmental injustice describes the environmental damages that occur to communities that are marginalized not only due to race, socioeconomic status, and nationality. Environmental injustice leads to problems such as the government siting hazardous waste plants in Black or Latine communities, industries the United States exporting their waste and dumping it in Southeast Asia, fossil fuel companies laying pipelines through indigenous lands, and county and municipal parks departments placing an inadequate amount parks and green space in low-income communities.

The examples in the previous paragraph illustrate environmental injustice. Environmental injustice is broad and encompasses how human impacts on natural resources can cause marginalized groups to be disadvantaged. On the other hand, environmental justice is the activist movement aimed at dismantling this oppressive system of using the environment as a weapon against poor brown people (Taylor, 2014b). For example, BIPOC people tend to make up the majority of communities near toxic release sites (Bullard, 1990; Taylor, 2014b). Further, Black

and Latine households have higher rates of food insecurity than the national average, and almost 37 million Americans suffer from energy poverty (Center for Sustainable Systems, University of Michigan, 2021). As a response to environmental injustices such as these, the environmental justice movement was born.

The environmental justice movement calls for equal participation in environmental decision-making by all people (Center for Sustainable Systems, University of Michigan, 2021). Dr. Robert Bullard originally coined the term in the 1990 book *Dumping in Dixie*. Due to his long-standing work on the issue and his seminal text, Dr. Bullard is known as the Father of Environmental Justice. Environmental justice can be thought of as the intersection of the environmental movement and the civil rights movement. The modern environmental justice movement in the United States began in Warren County, North Carolina when a majority Black community became the site of excessive toxic dumping (Bullard, 1990). Still, environmental injustices have continued across the country. The need for the movement is palpable but unfortunately represents a niche within the environmental community. Many environmental studies programs only minimally address the topic of environmental justice, lack BIPOC students, and do not create inclusive environments for learning (Ruffin, 1996). In response to the thought-to-be limited scope of environmental justice, Pellow (2016) proposed the concept of *critical* environmental justice to address adding breadth and depth to the scholarly environmental justice space. Traditional environmental justice has made an unbreakable link between environmental protection and social justice (Pellow, 2016). Critical environmental justice proposes “embracing interdisciplinarity and methodologies and epistemologies including and beyond the social sciences” (Pellow, 2016, p. 223).

## CHAPTER 2: LITERATURE REVIEW

To ignore how oppression operates in environmental education may be to deny a fundamental understanding of identity in environmental education and ultimately prevent cultural relevance (i.e., having some significance to the audience's culture) from being achieved. Standpoint theory recognizes that a person's worldview and perspective differs based on their social positionality and that the perspectives of European Americans and Americans of Color can often be at odds (Kinefuchi & Orbe, 2008). Standpoint theory is based on three premises: (a) social locations such as race, class, or gender shape people's worldviews; (b) racial standpoints differ from racial locations in that standpoints are earned through critical reflection and the creation of a political stance that is in opposition to the dominant culture; and (c) a person can develop a multitude of standpoints as a result of membership in multiple marginalized identity groups (e.g., disability or sexuality status) (Kinefuchi & Orbe, 2008). Standpoint theory further asserts that people from the upper class or dominant racial identity groups tend to accept their perceived place at the higher rungs of society and rationalize the capitalist systems that oppress those at the margins (Wylie & Sismondo, 2015). Standpoint theory has historically appeared in studies of race, gender, and indigeneity (Choy & Woodlock, 2007; Foley, 2003; Kourany, 2009; Swigonski, 1994). Stapleton (2020) used standpoint theory to argue that dominant groups tend to overlook the struggles of marginalized groups. He suggests critical environmental education as a means of acknowledging and seeking to dismantle power imbalances within the environmental sphere. This dismantling of power requires understanding the historical and cultural positionality of various groups in relation to the environment and critiquing larger societal narratives which have shaped the environmental field. Environmental educators must understand that environmental issues tend to intersect with other social issues and widen their perspectives about

what 'the environment' even means. This widening can occur by creating environmental education programs that are relevant to the audience, critically examining environmental education curricula, using texts that represent multiple and diverse environmental viewpoints, hiring environmental educators who hold non-dominant identities, and highlighting BIPOC environmental leaders. The following section provides an overview of agricultural and environmental education. Next, there is a review of pedagogical frameworks for working with diverse populations in agricultural and environmental education. Lastly, I review the literature regarding environmental justice and MEE.

### **Problematizing Status Quo Agricultural and Environmental Education**

The National Association for Agricultural Educators defines agricultural education as teaching students about “agriculture, food, and natural resources” (National Association of Agricultural Educators, n.d., para. 1). Aspects of agricultural education have taken place in the United States for centuries, even including the American Philosophical Society founded in 1744, which published many agricultural articles. Early leaders in agricultural education include Elkanah Watson (1758-1842), Johann Heinrich Pestalozzi (1746-1827), Johann Bernhard Basedow (1723-1790), Rufus Stimson (1858-1947), and others. Teachers deliver agricultural education content through a mix of classroom instruction, field instruction, and youth leadership organization participation. Given that natural resources are one of the components of agricultural education, there is space for environmental education within agricultural education (Vahoviak & Etling, 1994). The environmental education theme of the 1994 edition of *The Agricultural Education Magazine* and Tennessee State University's inclusion of environmental education in its agricultural education degree program illustrates environmental education as an area of agricultural education (Smith, 2012). Further, highlighting the negative results of careless

environmental behavior on agriculture and a sustainable future is vital for future farmers (Green, 2012). The North American Association of Environmental Educators (NAAEE) defines environmental education as “a process that helps individuals, communities, and organizations learn more about the environment, and develop skills and understanding about how to address global challenges” (n.d., para. 1).

Despite the noble goal of addressing global environmental challenges, the field of environmental education is lacking in many ways. Blumstein and Saylan (2007) called attention to the insufficiencies of how educators conduct environmental education and the materials included in the curriculum. Their critique emphasized the lack of an “evidence-based” approach to ensuring that environmental education produces environmental citizens (Blumstein & Saylan, 2007). Still, they did not mention diversity considerations such as cultural competence, equity, inclusion, justice, or Ladson-Billings' (2009) culturally relevant pedagogy. Nordström (2008) describes environmental education as “a multi-discipline line of teaching and learning that educates individuals to become more knowledgeable about their environment and to develop responsible environmental behavior and skills to work for improved environmental quality” (p. 133). Nordström goes on to argue for environmental education to adjust to the cultural context and how multicultural education must take a student's environment into account. Student identity is a salient aspect of multicultural education and both forms of education seek to empower students (Nordström, 2008). Another scholar, Thomashow (1996), states that one of the goals of environmental education ought to be to 'integrate content,' one of the five methods of multicultural education (Banks, 2004).

In recent years, agricultural education, and the adjacent field of environmental education, have been calling for considerations of diversity, equity, and inclusion. For instance, in 2020, the

National Association of Agricultural Education held a series called “Agricultural Education for All,” in which they addressed diversity issues. The series included segments on microaggressions, culturally responsive teaching, implicit bias, critical conversations, cultural humility, and power and privilege. This series speaks to the need for this type of training for agricultural educators. Similarly, there is a need for the affluent White environmental movement.

The affluent White environmental movement can be traced back to Rachel Carson's (1962) *Silent Spring*. The book was a startling narrative of the effects of environmental contaminants on health. Since then, environmental education has covered a breadth of topics, including ecology, conservation, citizen science, and the moral or ethical dimensions of the environment (González-Gaudiano, 2006). Nonetheless, environmental educators tend to teach from predominantly affluent White points of view (i.e., lacking an intersectional lens), which presents challenges when working with BIPOC children (Grass, 1994). The teaching approaches that environmental educators use can either be very helpful or detrimental to student outcomes (Bruening, 1994).

In the mainstream environmental movement and in environmental studies in higher education programs, much of the population is "politically illiterate" as it relates to social justice dimensions of the environment (Chase, 1996; Fountain, 2019). Even how environment is defined differs among traditional environmentalists and environmental justice advocates (Lee, 1996). According to Running Grass (1994), environmental education “has overlooked the connection between the oppression of nature and the oppression of humans” (p. 6). Yet, to ignore how oppression operates in environmental education may deny a key understanding of identity in environmental education and ultimately prevent cultural relevance from being achieved.

The NAAEE, as a part of The National Project for Excellence in Environmental Education, has published *K-12 Guidelines for Environmental Education*. The guidelines focus on environmental literacy but lack the inclusion of sociopolitical consciousness and cultural competence required of culturally relevant teachers (Ladson-Billings, 2009). Instead, NAAEE (2010) organized the guidelines into four “strands,” shown in Figure 1, which describe aspects of environmental education that teachers should include at various grade levels. The first strand is questioning, analysis, and interpretation skills (NAAEE, 2010). This strand describes a learner's ability to engage in inquiry, develop hypotheses, and synthesize information. The second strand is knowledge of environmental processes and systems (NAAEE, 2010). This strand describes a learner's knowledge of the earth's physical system, the biotic or living environment, humans' interplay with the environment, and environmental influences on society.

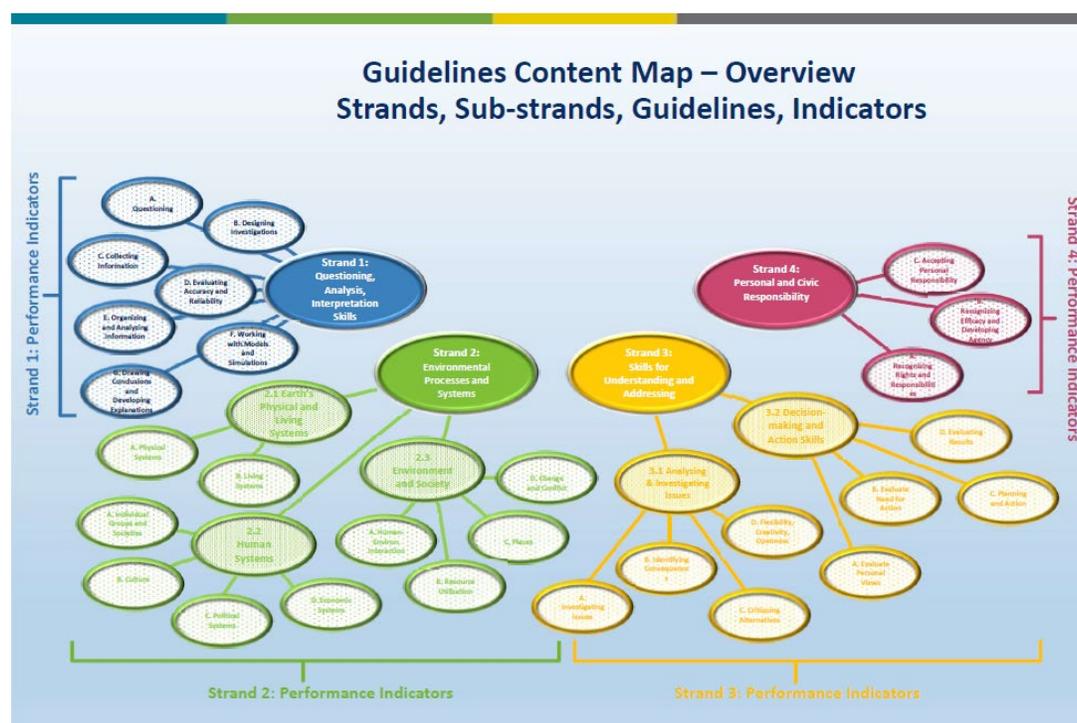
The third strand focuses on skills for understanding and addressing environmental issues (NAAEE, 2010). This strand describes using skills and knowledge to address real-world environmental issues and solve environmental problems. The fourth and final strand is personal and civic responsibility (NAAEE, 2010). This strand describes a learner's ability to draw on their own knowledge to determine what is needed to foster good environmental quality.

No strand directly calls for cultural knowledge, behaviors, or interpersonal skills; however, the guide includes some lessons that address culture across the strands on a superficial level. For instance, in an activity about culture, the guide suggests asking students to describe their favorite place in their community, role play historical events, and compare how people live in various climates (NAAEE, 2010). A deeper cultural activity might ask students to analyze and critique the systems that led to their favorite place being present in their communities but missing in some other communities. In other activities, the guide suggests having students “identify ways in

which governments and economic systems work to protect the environment and distribute natural resources” (NAAEE, 2010, p. 39). This definition assumes that laws unequivocally protect the environment and distribute natural resources. A deeper dive would critique that assumption and analyze the ways governments have failed to distribute natural resources to *all* groups.

**Figure 1**

*Environmental Education Guidelines, Content Map*



Note. (Pyle, 2020)

Although the Guidelines minimally address culture *for Excellence in K-12 Environmental Education*, social justice or environmental justice accounts for it much more. No strand directly incorporates an examination of environmental injustice. Justice is mentioned only minimally in the 131-page document stating that one of the actions that demonstrate leadership is “making decisions based on beneficence, justice, stewardship, prudence, cooperation, and compassion” (NAAEE, 2010, p. 103). The concept is mentioned again to state that education for a sustainable future ought to value “a concern for disparities and injustices, a commitment to human rights,

and to the peaceful resolution of conflict” (NAAEE, 2010, p. 107). Further, while this guide does not go far enough into culture and justice, it represents what many environmental educators consider the gold standard. For instance, this guide is used for training purposes by the Environmental Educators of North Carolina but is still merely a guide and not a requirement (Pyle, 2020). Thus, these standards may not inform an educator's work. Therefore, traditional environmental education is lacking in some critical areas.

### **A Step Beyond Status Quo Environmental Education**

Some environmental educators have adopted more tailored pedagogical practices to do more than the status quo. These practices may include centering instruction on the locations in which the instruction takes place, such as is the case with place-based learning or centering instruction on addressing a real-world environmental issue, such as is the case with problem-based learning (PBL).

#### **Problem-Based Learning**

According to Savery et al. (2006), PBL is an instructional approach that was born out of medical education in the 1960s. The goals of PBL are to be student-centric, multidisciplinary, and encourage lifelong learning. The multi- or interdisciplinary nature of PBL is that it engages students with complex problems with multiple dimensions to think through and attempt to solve. This approach fosters critical thinking skills and encourages students to ask questions, read original texts instead of excerpts, and use innovative thought processes to address real-world issues. Further, PBL lends itself to experiential learning (i.e., learning by doing) and engagement. Under this approach, students have agency in their learning, but it must also be a well-guided and facilitated learning process. Given the experiential nature of PBL, a number of environmental education programs have adapted the approach.

## **Place-Based Learning**

Place-based Learning is involves implementing educational programming such that the curriculum and lessons within the context of the site of instruction. Smith (2002) highlights that the purpose of place-based instruction is to center instruction on “local phenomenon and students' lived experiences” (p. 586). Smith also purports that place-based education has success in nature education and educating for culture, among other avenues, due to connecting abstract concepts to students' lives. Then there is critical place-based learning which blends place-based learning with critical theory. Critical theory arose from the work of Karl Marx as a means of acknowledging different theoretical structures for different social classes (Horkheimer & Turetzky, 1972). Moreover, critical theory has three objectives (a) to examine class struggle as theoretically productive; (b) to examine capitalism as the context within which class struggles take place; and (c) to encourage a communist future (Benanav & Clegg, 2018). Johnson (2012) advocates for critical place-based learning as a strategy for social change, asserting that our pedagogical practice must recognize a community’s histories, stories, challenges, and political landscape. Davidson-Hunt & O’Flaherty (2007) also found that place-based learning communities can help provide space for dialogue and building trust with Indigenous communities to address community problems. Similarly, Reetz & Quackenbush (2016) utilized place-based learning with First Nations youth in archeology-centered environmental education. Despite the benefits of Place-based Learning, Goodlad & Leonard (2018) found that some educators avoid its use due to either a perception that it is not helpful or a lack of support from their institution.

## Theories of Teaching Diverse Audiences

Scholars have proposed several instructional techniques for working with diverse audiences. Carter G. Woodson (1933) proposed teaching in a way that catered to the strengths of Black students, rather than focusing on the weaknesses (or what is “wrong”) of Black students. Woodson’s notion, in some ways, could be thought of as the foundation for Ladson-Billings’ (2009) culturally relevant pedagogy. Culturally relevant pedagogy studied what teachers have done right when educating Black students. Culturally relevant teachers show their students by example that they can succeed and genuinely believe that all students possess the ability to excel academically (Ladson-Billings, 2009). Culturally relevant teachers also allow space for students’ learning experience to be deeply rooted in their own culture while helping them become fluent in at least one different culture (Ladson-Billings, 2009). Lastly, culturally relevant teachers invite students to critique the sociopolitical climate of the school and the broader community (Ladson-Billings, 2009). Culturally relevant pedagogy has associations with positive academic outcomes and racial identity development among sixth to twelfth grade students (Byrd, 2016). Similar to cultural relevance, Gay (2002) proposes cultural responsiveness. Culturally responsive pedagogy proposes that teachers who do not share the cultural identity of their students must be prepared to respond to the needs of BIPOC students (Gay, 2002). Culturally responsive teachers make themselves knowledgeable about the language, values, learning style, and other characteristics of the students’ cultures in their classroom (Gay, 2002). This approach goes beyond having a basic awareness and respect for “the fact that different ethnic groups have different values” and calls for teachers to “acquire detailed factual information about the cultural particularities of specific ethnic groups” to “make schooling more interesting and stimulating for, representative of, and responsive to ethnically diverse students” (Gay, 2002, p. 107).

While culturally relevant pedagogy is aimed at all ethnically diverse students, Afrocentric pedagogy centers Black students while potentially benefiting all students. Asante (1991) proposed Afrocentric pedagogy as a way of centering Afro Diasporic people and their experiences in educational settings. While Afrocentric pedagogy teaches from a deeply rooted practice in Afro diasporic experiences, any student can partake in this type of instruction. Afrocentric pedagogy presents an alternative to the Eurocentric ways of teaching that have dominated our schools and provides a path to social change (George & Dei, 1994). Figure 2 shows the differences between Afrocentrism and Eurocentrism. Afrocentricity, as an alternative, includes doing things such as amplifying African voices in curricula and teaching with the “African sense of wholeness of relationships, compassion, hospitality, and generosity” (George & Dei, 1994, p.9). As it relates to environmental education, Afrocentric Pedagogy asserts that “The African humanness as a value system speaks to the importance of relating to, rather than mastery over, nature and the environment” (George & Dei, 1994, p.9). While there is no specific link to environmental education, multicultural education is another pedagogy that can successfully provide inclusive and affirming spaces for diverse audiences. Banks (1993) describes multicultural education as a field that proposed reforming schools and educational settings to foster equality for underrepresented students by preparing all students to navigate a diverse world. There are five dimensions of multicultural education: (a) content integration, (b) knowledge construction, (c) equity pedagogy, (d) empowering school and social structures, and (e) prejudice reduction (Banks, 1993). Content integration uses examples, data, and resources from a variety of cultures (Banks, 1993). Prejudice reduction is helping students to foster more democratic racial attitudes (Banks, 1993). Equity pedagogy uses educational techniques that help students from diverse backgrounds succeed academically (Banks, 1993). Knowledge

construction is helping students to understand the process of knowledge creation (Banks, 1993). Empowering school culture is restructuring the culture and organization of an educational environment to meet the needs of diverse students (Banks, 1993). Scholars have proposed other teaching approaches and conceptual frameworks to meet the needs of diverse students, including teaching the exceptional and culturally different (Grant & Sleeter, 2006), social justice education (Carlisle et al., 2006), and culturally sustaining pedagogy (Paris, 2012). However, these are all general, and other scholars have suggested theories specific to agricultural and environmental education.

## Figure 2

### *Comparison of Afrocentricity and Eurocentricity*

Comparison of Afrocentricity and Eurocentricity	
<b>Afrocentrism</b> <ul style="list-style-type: none"> <li>•Empowering children through their culture</li> <li>•Afrodiasporic people are placed at the center</li> <li>•Combatting the dislocated values and traditions of Africa for those physically moved to America or other western nations</li> <li>•The student's world and classroom are made congruent</li> <li>•Collective responsibility is valued over individualism</li> <li>•Connectedness to nature</li> </ul>	<b>Eurocentrism</b> <ul style="list-style-type: none"> <li>•Cultures other than Western culture are placed at the periphery</li> <li>•White people are the predestined masters of the world</li> <li>•Nature is meant to be conquered and exploited</li> <li>•Individualism is valued over community</li> <li>•People are perceived to succeed or fail based on merit rather than structural privilege or oppression</li> </ul>

*Note.* Content derived from George & Dei (1994), Gram (2007), and Matias & Mackey (2016).

## Preservice and In-Service Teacher Perceptions

While there is a breadth of pedagogical options for working with students from diverse audiences, the extent to which educators use these options depends on their perceptions. The

following studies highlight preservice and in-service teacher perceptions of multicultural education and putting environmental education within the multicultural context. Barry and Lechner (1995) examined the attitudes and awareness of 73 preservice teachers of multicultural education. They sought to understand whether preservice teachers were aware of multicultural issues in education their coursework provided adequate preparation for addressing multicultural approaches to education, they are interested in further training on multicultural education, their views on multicultural education practice align with current research, they anticipated using multicultural education in their classrooms, and their personal attitudes affect their ability to effectively implement multicultural education. Results indicated that most preservice teachers are aware of the diversity of the school-aged student body and are interested in further multicultural education training. Preservice teachers' ideas on appropriate multicultural education practices were inconsistent with current research. However, most agreed that there is a need to know about cultures different than one's own and anticipated having minority students in their classrooms.

Building upon the work of Barry and Lechner, Sharma (2005) describes the inadequate level of diversity among school teachers, the reluctance of White teachers to acknowledge and address racial injustice, and the under-education of White teachers on the cultures of their students from diverse backgrounds. However, given that the student body of schools is tending in more diverse patterns, it is important to have teachers who are prepared to work with students from diverse audiences. Doing so requires teaching practices that are responsive to said students' needs a moral imperative. This study only examined Escambia County, Florida, so a wider-scale study would be prudent. The study found that teachers felt underprepared to work with diverse students and wanted to see more training, infusion of this training in their university curricula,

workshops and seminars for in-service teachers, and more coursework on multicultural education. Some also suggested that teachers study abroad in developing countries. Sharma noted that teachers responded differently to the closed-ended and open-ended questions on the questionnaire. Teachers' level of self-awareness and desire to leave a favorable impression on the research team influenced their responses. As the sample consisted primarily of White women, it is possible that men or BIPOC people could think differently. While Sharma called for better training, the next study examined the reaction to training that teachers at a different university were already receiving.

Ndemanu (2018) studied preservice teachers at a large midwestern university to understand their comfort level with multicultural education courses. The author points to the fact that roughly half of the school-aged student body are students of color, while over 80% of the teachers of school-aged students are White. The author begs the question of how prepared these teachers are to work with *all* learners, including those who are ethnoracially diverse. Ndemanu sought to determine how preservice teachers experience multicultural education courses, how well said courses prepare these teachers for working in urban communities, and what challenges exist with the course content. Their findings concluded that preservice teachers were reluctant to learn the material partly because they did not picture themselves working with diverse learners in the future but instead envisioned themselves working in White, middle-class, suburban schools such as the ones they attended. They also feared adverse reactions to introducing concepts learned in their multicultural education courses by parents or others in racially homogenous towns. Participants reported that religious affiliation is a major barrier in addition to conservative values and a notion that raising LGBTQ issues is too controversial. Participants also expressed a

fear of having to learn about many new cultures to teach effectively in urban schools. Lastly, they reported stereotypes about students and parents as unruly and functionally-impaired.

Similar to the Sharma and Ndemanu studies, Chisholm (1994) found that one class on multicultural education will not be enough to prepare teachers; it must be infused throughout their coursework. Further, ethn racially diverse teachers will have a foundation of knowledge/understanding generally lacking among White teachers, but there are measures that White teachers can take to be more prepared. Such measures include: having meaningful direct experiences with diverse audiences, exploring issues of gender, race, ethnicity, family, language, culture, and age, training to acknowledge bias in instructional materials, and being aware of federal/state legislation that affects diverse populations of learners, etc.

However, training and instructional materials must be consistent enough to aid in understanding and implementing multicultural education. Zimmerman (2006) found that most K-12 teachers agree on the high importance of multicultural education but disagree about the meaning of multicultural education, how to teach multiculturally, and what implementation looks like in classrooms. Most participants (ages from 24-54 and most were White except for one Asian- Indian) viewed multicultural education as useful for celebrating diversity and accepting other cultures. Few mentioned notions of critical pedagogy/critical perspectives. They further did not see themselves as change agents with the ability to critique and transform society.

In a similar study of South Texas educators, Jimenez et al. (2014) found that teachers perceived multicultural education as teaching students from varied cultural backgrounds within the same classroom, teaching about diverse cultures, and fostering diversity within the classroom and broader community. These teachers saw the purpose of multicultural education as preparing students for the diverse world that they would encounter outside of the classroom. Teachers

believed that they should implement multicultural education daily and that many strategies could constitute multicultural education. Some strategies deployed by the teachers included classroom discussions, having parents share their cultural traditions with the class, teaching with different materials and languages, enabling students to use their native language in the classroom, and educators understanding the cultures of their students. Further, participants saw multicultural education as perpetuating respect, appreciation, and tolerance of other cultures. They also believed multicultural education fosters a safe space for students. Teachers can only create a safe space when they make themselves aware of the cultural backgrounds represented in their classrooms. If they are not aware, they may stereotype their students and limit their ability to succeed.

In contrast to the findings of the Jimenez study, in a study of preservice teachers in Georgia, researchers found that less than half (44%) of the 85% White participant group believed that it was important to explore cultures other than their own. In comparison, 49% foresaw no problems working with cultures other than their own (Taylor et al., 2016). This study highlighted a mismatch in the understanding and use of multicultural education in the broader field of education even though most education programs require a multicultural education class. Since environmental education does not require a multicultural education class, it makes sense that there is an even greater discrepancy between the literature and practice in the field.

### **Theories for Agricultural and Environmental Education with Diverse Audiences**

Lombard (2010) asserts that learners have varied environmental education needs stemming from their socioeconomic, racial, cultural, and national identities. Lombard states that when environmental education is placed within a multicultural context, it has the potential to raise awareness and understanding of other cultures. Several instructional theories and

frameworks have discussed how to address the needs of diverse audiences within agricultural and environmental education. A Black agricultural education scholar responded to said needs by creating a set of five approaches to agricultural education that “assist in the establishment of cultural respect and connectivity with African American students” (Parham & Vincent, 2018, p. 16). These approaches are (a) awareness of differences; (b) positive recognition of differences; (c) immersion into the uncomfortable; (d) acceptance through empathy and; (e) self-reflection and action. Another Black agricultural education scholar and professor proposed using the Culturally Meaningful Framework in agricultural education (Larke & Larke, 2006). The Culturally Meaningful Framework consists of a commitment to learning, effective communication, viewing education as a shared responsibility, cultural understanding, and courage to transform one's teaching style to the needs of the students.

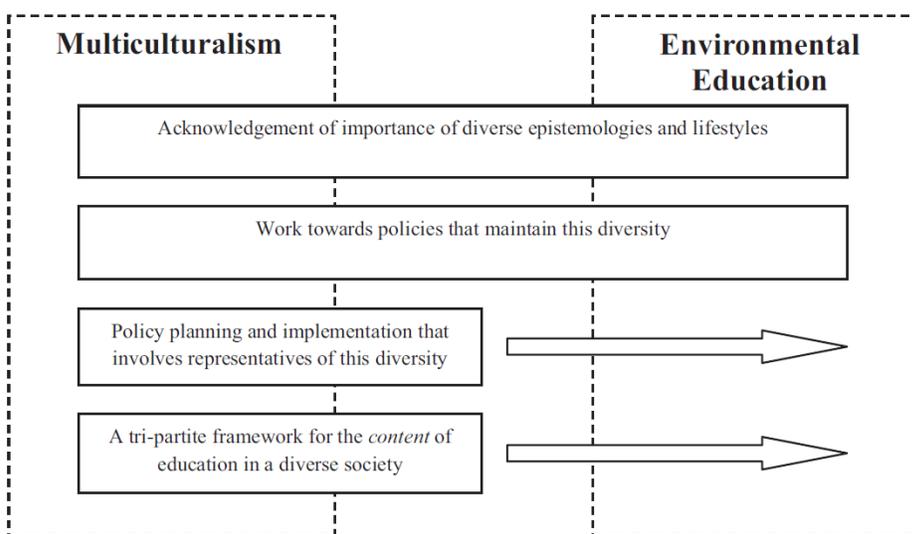
Through focus groups with classroom teachers regarding their perceptions of environmental education in multicultural contexts, Blanchet-Cohen and Reilly (2013) found that: strategies for implementing environmental education within multicultural audiences should include experiential learning and critical thinking. Further, bringing student and teacher experiences into the classroom and fostering intergenerational learning with parents is important. Barriers to implementing environmental education within multicultural contexts include lack of common lived experiences, perceived clash with environmental values between teachers and students, the perceived need to be delicate with language, deficit ideologies of instructors, a perceived need for more prep time, lack of support or resources, and inconsistent approaches to implementation.

The lack of consistency in environmental and agricultural education for diverse audiences reflects the contradictions that often arise in emerging fields (González-Gaudiano, 2006). Some

scholars have proclaimed the importance of linking environmental education and multiculturalism (Agyeman, 2003; Martin, 2007). Nordström (2008) wrote eloquently about how environmental education and multicultural education are, in essence, two sides of the same coin. Negev and Garb (2014, illustrate this relationship in Figure 3).

### Figure 3

#### *Similarities Between Multiculturalism and Environmental Education*



*Note.* (Negev & Garb, 2014).

Blanchet-Cohen and Reilly (2016) posit that culturally relevant environmental education can provide space for democracy, knowledge creation, and knowledge integration. Their conceptualization of cultural relevance includes allowing students to serve as co-curricular collaborators and making space for students to learn as a bridge between their schools and households or broader communities (i.e., intergenerational learning) by funneling environmental knowledge gained in schools into promoting environmental care outside of school, in particular with immigrant children. Blanchet-Cohen and Reilly encourage thinking about the ways that schools relate to communities and rethinking learning as being one-directional to being

multidirectional. Agyeman (2002) proposes that culturing environmental education must be geared toward challenging the dominant White, male, heterosexual power paradigm. Further, he calls for teachers and learners to acknowledge and challenge assumptions in ideologies and discourses in environmental education. Bengston et al. (2012) conceptualize “culturally appropriate” environmental education as informed by members of the cultural community being served, tailoring educational materials that reflect the context of the cultural community being served, and being delivered in a format that mirrors the traditions of the cultural community being served.

### **Connecting Environmental Justice to Pedagogy**

Stewart (2014) indicated that racism, marginalization based on ethnicity, and environmentalism, among other social justice issues, can be addressed in the context of leisure. For this reason, how race, ethnicity, and culture are addressed in non-formal environmental education must be considered. While status quo environmental education tends to favor light topics such as merely going green, dissenters in the field cover complex social issues, such as the links between environmental quality, human quality, human rights, and peace and underpinning politics. (González-Gaudiano, 2006, p. 296)

Warren (1996) proposes integrating environmental justice into experiential environmental education by providing White students with environmental justice field experiences, environmental racism simulations, and opportunities to engage in environmental justice activism. Peloso (2007) also proposed merging environmental justice with social justice education into environmental justice education. Running Grass also developed MEE on the foundations of both environmental justice and critical pedagogy. Critical pedagogy studies the role schools play in maintaining society's social structure and schools as a potential site of social change (McLaren,

2016). A primary function of critical pedagogy is to “critique, expose, and challenge the manner in which schools impact upon the political and cultural life of students” (McLaren, 2016, p.2).

Therefore, I used MEE as the theoretical framework of this dissertation study.

### **Multicultural Environmental Education**

Running Grass (1994) is the originator of MEE, which purports that (a) children may have different needs based upon and shaped by their places of residence; (b) a multicultural environmental education illuminates the essential idea that all cultures have a relationship with the natural world which they and all others can draw upon for understanding and inspiration; (c) multicultural environmental educators use the opportunities to help children become aware of, understand, accept, and celebrate other cultures and their environmental traditions; (d) a multicultural environmental education critiques the forces which have oppressed people as well as nature; (e) MEE envisions a multicultural society at peace with the natural world and itself, and (f) families and communities need to be directly and significantly involved in the development and implementation of environmental education curricula and programs. Within MEE practice, there is room to address critical environmental justice as well. Critical environmental justice has pillars that are not necessarily inherent to traditional environmental justice. Firstly, there is the pillar of intersectionality (Murphy et al., 2021), which describes how multiple marginalized identities can come together to create a unique condition of oppression. Kimberlé Crenshaw (1991) introduced the term to describe the positionality of Black women and the violence against them in the criminal justice system. Scholars have since adapted intersectionality to address other identity groups as well. The second pillar is multi scalarity, which describes “using methodologies and theoretical approaches that are multiscalar” (p. 396). The pillar of Horizontality (anarchism) and indispensability describes social hierarchies as being

entrenched in society, reinforced by the state, and needing to be undone to make space for true and direct democracy (Murphy et al., 2021). How researchers have understood, utilized, and applied components of MEE has varied.

Sleight (2017) invited exploration of identity and culture through their perception of MEE. They also invited participants to share their understanding of what multicultural education is and, by doing so, demonstrated that the concept was not seen as separate from the environment more broadly. They also posited that environmental education ought to be accessible and that we can celebrate cultural diversity through environmental education. In a study of nonprofits doing MEE, Marouli (2002) found that five of the 14 programs studied focus on community environmental issues, and seven of the 14 explicitly work with urban groups. Further, Marouli found that programs in the study varied from classroom education to outdoor education to activist activities. In the study, activities undertaken by nonprofits included educational activities, activities for promoting people of color, activist practices, diversity activities, hands-on service such as constructing houses or gardens or distributing food, community partnerships or involvement, and pedagogy. Community partnerships and activism were especially present.

While the Marouli (2002) study focused on the U.S. and Canada, Negev and Garb (2014) conducted a case study of MEE with two minority groups in Israel. The study used a mixed-methods approach to “explore the dynamics of environmental education in each sector [secular-Jewish and Arab] and especially those aspects specific to the particular social world of each and to identify barriers and opportunities to further promoting environmental education” (Negev & Garb, 2014, p. 149). The results suggested that there are ample opportunities for cultural integration within environmental education programs in Arab schools. For instance, the Quran and Islamic laws have various environmental topics. Negev and Garb (2014) connected the

traditional Arab lifestyle to agriculture, water use, local consumption, medicinal herbs, and a connection to environment and place. There is also room for cultural connection with environmental education in ultraorthodox schools on topics from philosophy and literature to history and law (Negev & Garb, 2014). Negev and Garb's (2014) work revealed that environmental education in Israel lacks representation of Arab and secular-Jewish people, infrastructure to sustain environmental education programs, resources to offer environmental education programs, and content addressing the traditions of the sectors studied, among other concerns. To implement environmental education in community settings, such issues must be addressed from a multicultural perspective.

Environmental education has also had levels of success with BIPOC students in urban middle schools, high schools, and universities (Wardhani et al., 2020). Cutter-Mackenzie (2009) explored Australian children's environmental education through a multicultural school garden. Cutter-Mackenzie (2009) evaluated the effects of the multicultural school gardens program, created by an environmental education organization, to offer gardening resources to disadvantaged schools. The program had objectives to celebrate cultural diversity, cook multicultural dishes using ingredients from the garden, strengthen local and school communities, and encourage healthy eating habits (Cutter-Mackenzie, 2009). While these were noble goals, they are inconsistent with certain aspects of MEE, namely environmental justice, critical pedagogy, and dimensions of multicultural education other than content integration and, in some cases, prejudice reduction.

Just as the above research study examined blending culture into environmental education, another organization called Latino Outdoors has been doing the same with Latine students since 2013. However, instead of utilizing a gardening program, Latino Outdoors encourages

storytelling in outdoor programming while also creating personal and professional connections (Flores & Kuhn, 2018). Other instructors have incorporated music in environmental education. For instance, in a 2012 study, Cermak discussed what they refer to as “green hip hop,” i.e., hip hop songs that have environmental themes. The researcher conducted a four-year examination of several iterations of a two-week program. As a part of the program, urban high school students took part in a curriculum in which traditional environmental topics were swapped for urban environmental injustice discussions, with green hip hop as the backdrop. Cermak asserts that incorporating themes of race and social justice via hip-hop into an environmental curriculum is necessary on two fronts: to balance out historical inequalities of who speaks for the environmental movement and to increase student engagement in environmental classrooms (Cermak, 2012). This assertion is consistent with MEE's goal of helping students critique oppressive societal forces. Cermak also found that when students produce texts as a part of their green hip-hop experience, those texts can become a valuable teaching tool for future groups. Hip hop is but one form of artistic expression that has been used in environmental education with ethnoracially diverse audiences. The above studies highlight that researchers have different interpretations of the operationalization of MEE, and certain researchers seem to incorporate some aspects of MEE while ignoring others. Incorporating only some aspects of MEE could result in students not reaping the full benefits they could have had their teacher properly integrated MEE into the curriculum.

### **Importance of Multiculturalism in Environmental Education**

According to Running Grass (1994), “from a demographic perspective, environmental education, like the environmental advocacy movement, is largely monoracial, monocultural, and middle to upper class in its values and orientation” (p. 5). A recent report found that in many

environmental organizations, there is a tremendous lack of diversity (Taylor, 2014a). This lack of diversity stems from a legacy of whiteness in the environmental sector. For instance, many environmental organizations did not accept female members until the 1930s or 40s and did not accept Black members until the 1970s (Rami, 2019). In STEM, women and girls are underrepresented (Heybach & Pickup, 2017; Meadows, 2016) and Black girls even more (Farinde & Lewis, 2012). For some agricultural educators, the importance of diversity is rooted in the notion that not including ethnic minorities is synonymous with not taking advantage of a resource because of notions that ethnic minorities should be hired to bring new ideas to the workplace rather than because they are qualified and have a right to exist (Cano & Tyler, 2011). However, this view encourages diversity only to benefit the dominant group rather than for the sake of acknowledging a group's right to hold space.

Unfortunately, over the years, diversity has become somewhat of a buzzword (Penkler et al., 2020). When scholars, educators, and practitioners purport to be doing diversity work, what is it that they really mean? That is a somewhat hotly debated issue, but for this study, I define diversity as acceptance and respect of the unique qualities that make individuals different (Queensborough Community College, n.d). These unique characteristics may be related to sexual orientation, gender, ethnicity, race, culture, socioeconomic status, nationality, religion, ability status, and other social identity categories. Therefore, doing diversity work involves enhancing the representation, acceptance, relevance, or respect of/for others regarding one or more of the identity areas mentioned above. There are many other areas under the realm of diversity to be explored. For instance, cultural competence has arisen as an important area of attention in many fields (Angotti et al., 2011; Campinha-Bacote, 1999; Kirmayer, 2012; McKoy, 2009; Meyer et al., 2016). Cross (2012) defined cultural competence as “a set of congruent behaviors, attitudes

and policies that come together in a system, agency, or professional and enable that system, agency, or professional to work effectively in cross-cultural situations” (p. 83). Indeed, some have critiqued diversity work as not doing enough to address or acknowledge systemic oppression and have called for methods that address this gap (Chavez & Weisinger, 2008; Puritty et al., 2017).

In developing the framework for MEE, Running Grass (1994) proposed a clear link between the environmental justice movement and the need for environmental education programs. In traditional environmental education curricula, there is a notable gap in subject matter related to environmental health hazards and conditions in urban communities (Grass, 1994). Previous attempts at addressing diversity in environmental education only engaged a small number of BIPOC students and made only peripheral changes to the curriculum (Dkhar, 2019). Further, they have been entirely too rigid even though it may require building the curriculum as the course progresses and being flexible on teaching strategies to accommodate students' interests (Henry, 1996).

A critical element of MEE is for students to experience teachers from diverse backgrounds (Grass, 1994). Furthermore, while MEE begins in a student's home community, it should not be limited to that community. Teachers should expose students to natural environments and wilderness, but environmental education must not be *limited to* those settings. With this in mind, students who experience MEE will learn about the environment in ways that are rooted in their own cultural experience while also being exposed to wilderness environments that are different from their home communities. Dkhar (2019) highlighted MEE as not only a means of passing on environmental consciousness but also using traditional knowledge and centering the voices of the community. A central theme of MEE is “reconnecting people to their

natural environment, representation of voices from all sections of society with regards to environmental knowledge, and recognizing cultural heterogeneity” (Dkhar, 2019, p. 635). This idea contrasts with the traditional roots of environmental education, which “originated from nature and conservation studies and was originally conceived as science education regarding the environment” (Dkhar, 2019, p. 635).

The above literature indicates that there have been a plethora of proposed frameworks for working with diverse populations, not only in agricultural and environmental education (such as place-based learning or Problem-based Learning) but in the educational field more broadly (such as culturally relevant pedagogy, culturally responsive pedagogy, and culturally sustaining pedagogy to name a few). These theories and practices emphasize several strategies, such as helping students critique oppressive forces, respecting one's own and others' cultures, and conducting environmental programs in various settings. The above studies also highlight the uneven application of the dimensions of MEE. This uneven application points to a need to further understand how environmental educators conceptualize and value MEE. This study seeks to address that need through a mixed-methods approach.

## CHAPTER 3: METHODOLOGY

In this chapter, I present the purpose of the study followed by the guiding research questions and hypotheses, recruitment procedures, instrumentation, the rationale for cross-sectional study design, data collection procedures, key measures, data analysis procedures, reliability and validity, and study significance.

### **Purpose and Study Overview**

This study aimed to better understand how environmental educators understand and use MEE. Given the expansive nature of the environmental education field, I developed a survey and distributed it electronically to environmental educators across North America, with the largest response rate in the United States. Using a cross-sectional survey design, this study explored environmental educators' conceptualization of cultural relevance in environmental education, the pedagogical theories and practices environmental educators use when working with students from racially, culturally, and socioeconomically diverse populations, the ways environmental educators incorporate the concepts of MEE, and how environmental educators value MEE. I used Running Grass' (1996) tenets of MEE— environmental justice, multicultural education, and critical pedagogy—to guide the survey instrument's development and thematically code the qualitative portions of the data. I developed the codes using in vivo coding strategies, meaning that I retained the exact wording of the participants (Saldaña, 2014). Refer to table 1 for the research questions and hypotheses. The survey was cross-sectional, meaning that it represents the attitudes, understandings, and perceptions of the participants when the survey was disseminated (Sedgwick, 2014). The researcher deemed this design most appropriate to assess the present understanding in the field. Further, survey participants had the opportunity to refer colleagues or friends to take the survey (i.e., snowball sampling) (Biernacki & Waldorf, 1981).

**Table 1***Research Questions and Hypotheses*

	Question	Hypothesis
Research Question 1	How do environmental educators conceptualize cultural relevance in environmental education?	N/A - Exploratory due to lack of sufficient literature to form a hypothesis
Research Question 2	What pedagogical theories and practices do environmental educators use when working with students from racially, culturally, or socioeconomically diverse populations?	Environmental educators from underrepresented groups are more likely to use pedagogical theories and practices catered to diverse audiences.
Research Question 3	How do environmental educators incorporate the concepts of MEE, if at all?	N/A - Exploratory due to lack of sufficient literature to form a hypothesis
Research Question 4	How do environmental educators value MEE?	Environmental educators from underrepresented groups will value MEE differently from dominant groups.

**Population, Selection, and Procedures**

The target population for this study was environmental educators in North America. I estimated the population size based on the membership amounts of key environmental education organizations included in the distribution: Environmental Educators of NC (~8,037 members), the North American Association of Environmental Educators newsletter (~20,000 members), the National Association of Agricultural Educators (~9,000 members), and Children and Nature (~600 individual or organizational members). Utilizing organizational member databases constitutes a form of convenience sampling methods (drawing participants from easy to access groups) (Sedgwick, 2013). Based on data from Zippia (n.d.), a career analytics firm, the demographic makeup of these organizations generally aligns with those in the environmental education field.

## Recruitment

Professional organizations contacted for recruitment included the North American Association of Environmental Education and each of its state affiliates and several other organizations with a focus on nature education, outdoor education, or environmental education. I selected these organizations because I expected they would have members of the target population. Many organizations agreed to distribute the recruitment materials to their members, though some declined. Recruitment materials consisted of a virtual flier with an electronic survey invitation and survey link. As noted previously, the target population included environmental educators in North America. The researcher based the term environmental educator on the participants' understanding and self-identification. This decision was deemed appropriate given that the researcher only distributed the survey to participants with membership at the previously described organizations. Therefore, would likely understand or resonate with the field. However, in very few instances, potential survey respondents emailed the researcher to ask whether they qualified as an environmental educator (i.e., they asked what an "environmental educator" was). In such cases, the response that participants provided to those who made such an inquiry was:

"This survey is for those who would self-identify as environmental educators. The environmental educator definition that I am using is 'An environmental educator is defined as someone who, as a part of their profession, helps individuals, communities, and organizations learn more about the environment or natural resources, and develop skills and understanding about how to address global challenges. This can include formal classroom educators, non-formal educators, or outdoor instructors.'"

Reminder emails for the online survey were sent two weeks after the initial survey distribution. Refer to Table 2 for information regarding the demographics of survey participants.

**Table 2***Demographics of Study Participants Who Self-reported their Information*

Demographic Identifier	n	Percentage
<b>Residency</b>		
United States Resident	133	93%
Canada Resident	8	6%
Mexico Resident	2	1%
<b>Gender</b>		
Male	47	33%
Female	89	62%
Gender fluid, non-binary, or other gender	7	5%
<b>Educational Attainment</b>		
No post-secondary degree	20	7%
Post-secondary degree	189	93%
<b>Race</b>		
BIPOC	77	42%
White/European/Caucasian	104	56%
Other race or Prefer not to share	4	2%

*Note.* While other demographic data was collected, it is not reported because it was not deemed relevant for the study's analyses.

**Instrumentation**

A thorough review of the literature found no other study examining individual environmental educators' understanding and use of MEE existed at the time of data collection; therefore, the instrument for this survey has not been used in prior studies and was developed solely for the purpose of this study. The structure for many questions included in the survey was

formulated based on the instruments used by Peffer et al. (2013) and Dobrinski and Uptis (2008).

Questions in the survey were written to assess the following metrics, which were based upon aspects of the five dimensions of multicultural education and the 17 principles of environmental justice (EJ):

1. Content Integration (Multicultural Education Dimension One)
2. Knowledge Construction (Multicultural Education Dimension Two)
3. Prejudice Reduction (Multicultural Education Dimension Three)
4. Equity Pedagogy (Multicultural Education Dimension Four)
5. Empowering School Culture and Social Structure (Multicultural Education Dimension Five)
6. Affirmation of the sacredness of mother earth and the interdependence of all species (EJ Principle 1)
7. Mutual respect, justice, and freedom from discrimination or bias (EJ Principle 2)
8. Political, economic, cultural, and environmental self-determination (EJ Principle 5)
9. Accountability (EJ Principle 6)
10. Safe and healthy environment (EJ Principle 8)
11. Reparations (EJ Principle 9)
12. Ethics (EJ Principle 3)
13. Human rights (EJ Principle 10)
14. Affirming sovereignty and self-determination of Indigenous people (EJ Principle 11)
15. Cultural integrity of urban and rural communities (EJ Principle 12)
16. Fair access (EJ Principle 12)
17. Opposition to destructive operations and multinational corporations. (EJ Principle 14)

18. Opposition to military, repression, and exploitation (EJ Principle 15)
19. Centering environmental and social issues on the experiences of BIPOC people (EJ Principle 16)
20. Encouraging personal/consumer choices to consume minimal natural resources (EJ Principle 17)

Next, I used feedback from two associate professors, and one assistant professor with expertise in environmental education to content validate the instrument. More specifically, I shared a draft version of the instrument with the aforementioned faculty members, who provided comments on the instrument. I used their comments to revise the questions and question ordering. Lastly, I piloted the instrument with four environmental educators to test whether the questions made sense. These environmental educators included one Black male, one Black female, one White female, and one White gender-fluid person. The researcher reached out to these four environmental educators through their own professional networks and invited them to participate in the pilot, assuring them that it was for test purposes only and their responses would not be included in the data used for analysis. The researcher set up individual video calls with each of the four environmental educators. The educators walked through the survey and named any questions or comments they had aloud. The researcher recorded the calls with permission and took written notes of their questions and comments. I used their feedback to modify the survey.

### **Rationale for Cross-Sectional Design**

Unlike longitudinal studies, which document changes over time, cross-sectional studies provide a picture of the study topic at a certain point in time (Connelly, 2016). This design was most appropriate for the current study, given that the goal was to examine the environmental

educators' understanding and use of MEE at a particular point in time. Cross-sectional studies are also quick and inexpensive in comparison to other data collection methods. The attrition rate is less in cross-sectional studies than in longitudinal studies (Connelly, 2016). The quick and inexpensive benefits were appropriate for the current study since there was no funding to support this research. However, some of the study's drawbacks included respondents not completing every question on the survey, a low response rate, the use of self-reported data so respondents may feel they must provide a certain response regarding socially-acceptable behavior, and there is a potential for non-response bias (Connelly, 2016; Sedgwick, 2015). Bose (2001) described nonresponse bias as the phenomenon in which respondents who participate in the study differ significantly from those who do not participate. For example, environmental educators who completed the survey may have already been most interested in addressing the needs of diverse audiences of students. In this study, respondents may have included people who were particularly opinionated about instructional strategies with ethnoracially or socioeconomically diverse audiences.

### **Data Collection**

Participants completed an 86-item survey about their instructional practices and beliefs. At the end of the survey, participants had the option to opt-in to a one-hour semi-structured zoom interview to get a deeper understanding of their practices. Participants who opted-in were invited to be entered into a drawing for one of four \$25 gift cards. Participants who did not opt-in could not be entered into the drawing because their names and contact information would be unknown. Only participants who opted-in to all parts of the research study were eligible for the drawing. The reason for this was so that educators could maintain their anonymity if they chose to. However, the researcher did not contact participants who elected to remain anonymous for a

follow-up interview. Participants did not have to participate in a follow-up interview to be entered into a drawing; they merely had to be willing to be interviewed. Ultimately, an insufficient number of interviews were conducted due to a shortage of participants who were eligible for an interview or willing to participate. Eligibility criteria for an interview were as follows: North American environmental educators ages 18 years of age or older who agree to participate in the research, who completed the survey, who self-identify as multicultural environmental educators, or who inadvertently use MEE tenets, as indicated in their surveys, and agree to have their interview recorded. Of the 390 survey participants, only 14 were deemed eligible for an interview, and nine of them opted into being considered for an interview. Of those nine, five responded to the email request to participate and were ultimately interviewed. The survey was reopened and redistributed three times to recruit additional study participants. Each round garnered additional participants but did not increase the share of participants who were eligible for an interview. As such, the researcher excluded interviews from the data analyzed and reported in this study. The online survey, which was administered using Qualtrics, took approximately 30 minutes to complete. Three hundred ninety surveys were submitted. After removing the respondents who did not meaningfully complete the survey (e.g., writing meaningless letters in open-ended survey fields), the final sample consisted of 360 environmental educators. The researcher asked participants to read an informed consent statement based upon the template provided by the NC State University Institutional Review Board (IRB) prior to completing the survey.

The NC State University IRB approved all study procedures. Individuals who indicated active consent advanced to the electronic pages that followed the study description and consent form. Survey responses were anonymous. The settings of the Qualtrics survey were such that a

person was not able to revise prior answers during the survey or complete the survey twice from the same device. The researcher used the settings to reduce participants' potential to revise prior answers based on information learned through the survey and to minimize duplicate responses. The participants' IP address information was not shared with the research team.

### **Key Measures**

I assessed Race/ethnicity with the following single closed-ended item: With what racial or ethnic group(s) do you identify? Response options included Black/African/Afro-Latino, Latina/o/x/e, White/European/Caucasian, Indigenous, Central Asian, East Asian, South Asian, Western Asian, Pacific Islander, Middle Eastern, prefer not to share, or other.

I measured participants' use of culturally relevant pedagogical theory by asking participants: Do you change the *pedagogical theories* you utilize when working with racially, culturally or socioeconomically diverse audiences? If the participant marked yes, they were prompted to respond to the following question: Which theories do you utilize in your environmental education Practice for racially, culturally, or socioeconomically diverse audiences?

I measured participants' use of culturally relevant teaching practices by asking participants: Do you change the *techniques* you utilize when working with racially, culturally or socioeconomically diverse audiences? If the participant marked yes, they were prompted to explain which *techniques* they used in their environmental education practice with racially, culturally, or socioeconomically diverse audiences.

MEE-related practices were measured by 13 items that assessed how environmental educators implemented each of the MEE tenets: multicultural education, critical pedagogy, and environmental justice. I analyzed the tenets as a sum score for this section of questions which

was deemed reliable based upon a .904 Cronbach's alpha for the scales included. Below are sample items and response scales:

S1: As a part of my environmental education practice, I center environmental and social issues on the experiences of BIPOC people.

S2: As a part of my Environmental Education practice, I educate students about providing compensation to communities who have been inequitably burdened environmentally.

Agree, neither agree nor disagree, or disagree were the scales of responses for the above two sample items from the survey. The frequency of MEE-related practices was measured by asking how frequently participants do the things listed in questions 23-35 on the survey instrument.

### **Data Analysis**

The study's first research question was, "how do environmental educators conceptualize cultural relevance in environmental education?" The researcher analyzed the qualitative data from the survey thematically. Thematic analysis identifies and describes the themes that emerged from participants' responses regarding how environmental educators conceptualize cultural relevance in environmental education. The researcher loaded survey responses into a software called QDA Miner Lite to assist with coding. During the first round of coding, I analyzed participant responses for evidence of MEE behaviors in participants. Next, I attempted to categorize the responses into three groups based on MEE tenets (environmental justice, multicultural education, and critical pedagogy). Responses, however, proved to be too dissimilar, and as such, those codes were thrown out. In the second round of coding, the researcher analyzed responses not by participants' particular behaviors but by what their behaviors pertained to. In the next chapter, I describe the codes. Since the exact language of participants was retained, there could be instances in which their responses were relevant to multiple categories of codes, but the

researcher coded responses within the category that they felt best reflected the essence of the participant's response.

Research question two was “what pedagogical theories and practices do environmental educators use when working with students from racially, culturally, or socioeconomically diverse populations?” Hypothesis: Environmental educators from underrepresented groups (non-White and non-male) (i.e., yes, no) are more likely to use pedagogical theories that are catered to diverse audiences (i.e., yes, no). This hypothesis is supported by standpoint theory which argues that dominant groups tend to overlook the struggles of BIPOC people (Stapleton, 2020). The idea here is that environmental educators from marginalized identities, who are more cognizant of said struggles, will more likely use pedagogical practices that are catered to diverse audiences.

The researcher addressed this research question by assessing the frequency of selected pedagogical theories, reviewing the proportion of participants reporting that they differentiate their pedagogy, and by analyzing the theories identified and coding them as either catered to diverse audiences or not catered to diverse audiences.

Research question three was, “how do environmental educators incorporate the concepts of MEE incorporated, if at all?” The researcher analyzed the survey's qualitative data thematically. That is, themes that emerged from participants' responses regarding how environmental educators use MEE in environmental education were identified and described.

Research question four was “how do environmental educators value MEE?” Hypothesis: Environmental educators from racially minoritized groups (i.e., Black, Latine, Asian, Other) will value MEE differently than those with dominant identities. The researcher assessed this hypothesis using a t-test in SPSS. I used listwise deletion to handle missing data.

### **Reliability and Validity**

The researcher shared the instrument with a validity panel of environmental and multicultural educators and an environmental justice scholar-activists to assess content and construct validity. Further, the researcher calculated Cronbach's alpha score in SPSS to determine the reliability of the scale for survey items related to MEE valuation.

## CHAPTER 4: RESULTS

Research question one pertained to how environmental educators conceptualized cultural relevance in environmental education. Participants believed that cultural relevance in environmental education is demonstrated through teacher dispositions or behaviors, school social climate or learning environment, and the curriculum or course materials. In Tables 3, 4, and 5, below, I include some sample responses from each area.

The first code is teacher dispositions and behaviors. Items in this category pertained to how teachers felt their worldview, classroom behaviors, or way of thinking were important.

**Table 3**

***Participant Responses about Teacher Dispositions or Behaviors***

Not assuming what students do or do not know; not using a "cookie-cutter" approach to teaching; most of all, being INCLUSIVE.
Teaching all cultures how to appreciate the earth.
Taking the time to relate EE experiences to participants' everyday lives. Ask them what they know about where they live or come from, make experiences transferable to their experiences so the knowledge and ah-ha moments stick with them beyond the initial experience.
Exposing underserved audiences to the knowledge, skills.
It means to me that the new educational concept of reform can better cooperate with students.
Accessible outdoor education for all cultural audiences and knowing your audience
Welcoming different life experiences, being flexible and humble.
Emphasize the combination of emotion, attitude and cognition.

The second code that emerged from the study was the school's social climate or learning environment. Some of the items in this category included the culture of the school, the physical classroom or learning space, and the dynamics of the learning environment.

**Table 4**

***Participants Responses Pertaining to Social Climate of the School or Learning Environment***

Such changes combine a high degree of dynamism with globality, and revolutionary advances in the field of information and communication technologies have contributed powerfully to these changes.
As human society becomes more and more complicated and information flow becomes more and more developed, cultural renewal and transformation are also accelerating.
Structuring learning opportunities so that every student can make valuable contributions based on their experiences and perspective, and no one has to check their identity at the door to be successful
Rich and colorful life.
To me, it means a novel way of education, which can open the door of students' understanding of the mind more quickly.
It can let more people know about environmental protection.
Freedom and peace.
Students can get along with each other more harmoniously.

The third code is curriculum or course materials. Items in this category included the content of the curriculum or other materials used in the course or program.

The study's second research question asked, "what pedagogical theories and practices environmental educators use when working with students from racially, culturally, or socioeconomically diverse populations?" The researcher hypothesized that environmental educators from underrepresented groups (non-White and non-male) (i.e., yes, no) are more likely to use pedagogical theories that are catered to diverse audiences (i.e., yes, no).

**Table 5*****Participant Responses Pertaining to the Curriculum or Course Materials***

Including a wide range of experiences and techniques from scientists of multiple backgrounds and areas.
Incorporating different cultures/views/ideas into environmental education.
Using tactics to make the content relevant and accessible beyond the White dominant culture.
Integrating EE from different viewpoints.
Creating and delivering environmental education that provides inclusive messages and important and relevant activities across race/ethnicity/cultural identities.
That programming considers various learning styles, identities, and experiences of audiences.
Enhancing knowledge, new knowledge, or more knowledge.
Portraying multiple races in books/classes, talking about how different cultures appreciate nature (different art/outdoor practices), history of land use for different peoples.

The researcher tested this hypothesis by examining the frequency of participants who self-reported differentiated instruction. I also reviewed the pedagogical theories that participants reported using. Over half of the sample reported that they used Experiential Learning Theory in their practice. Some educators reported not using any pedagogical or andragogical theories to direct their practice. About 40% (144) of respondents reported using specific theories when working with racially, culturally, or socially diverse audiences. Of those, 8% (11) then identified using a theory or practice of teaching diverse populations, such as critical race theory, multicultural education, culturally relevant pedagogy, culturally responsive teaching, critical theory, Marxism, restorative justice, or anti-oppression theories.

The third research question asked, “how do environmental educators incorporate the concepts of MEE?” As a reminder, the concepts of MEE are multicultural education,

environmental justice, and critical pedagogy. Through a series of items in the survey (Appendix C), the researcher asked environmental educators whether they incorporated concepts from multicultural education, environmental justice, or critical pedagogy. The researcher also asked participants who indicated that they used a practice from MEE to share how and how often they incorporated the items. Tables 6-8 include a spectrum of samples of how environmental educators reported using the concepts of MEE (multicultural education, environmental justice, and critical pedagogy).

**Table 6**

***Participant Reports of how they Deliver Multicultural Education***

I don't just teach EE but other topics as well - using Teaching Tolerance resources.
Inclusion of multicultural perspectives, modeling, not prioritizing one world view over another.
Ensuring that the content I present is both representative and applicable to their learning. Creating space for open discussion.
By integrating content/conversations about environmental justice & local history that connect with the program
By welcoming and giving choices within the scope of the activity.
I am the "outsider" and, as such, work long and hard to address many points of view. In 2020 and 2021, that is tough to do.
Listening to my students.
Participant voice and choice in learning, respecting different perspectives and cultural approaches, and empowering participants to carry out and assess the effectiveness of their own proposed solutions whenever possible.

**Table 7*****Participant Reports of how they Taught Environmental Justice***

I relate environmental respect with human respect. Also, I talk about the interconnections of the land and people.
When appropriate, I discuss how resources are used and conserved both historically and presently. I discuss how resources are accessed and cared for differently in various communities. I try to connect environmental topics to their economic and political contexts.
I strive to tell the whole story with multiple sides of who may benefit or be burdened by xy or z bill, plan, law, decision. Then I offer comments and discussion periods after that so students can point out what they see in the story.
I teach that we all experience and conceptualize nature in different ways based on who we are, our life experiences, and social positionality.
I encourage students to create their own meanings of the environment and build relationships with nature in ways that are meaningful to them with respect to others' ways of connecting with and making meaning from nature.
We often talk with students about the responsibilities humans have in caring for the environment.
Break down data and statistics to an individual level so my kids can understand their personal impact
Role modeling restorative practices and positive behavior in the natural world, open discussion about human behavior so that we build common understandings

**Table 8****Participant Reports of how they used Critical Pedagogy**

<p>It is dangerous to assume that Australians are inherently fair. The hypothesis is that children are naturally good. We treat each other Reflects the way we have been taught to treat others. Misinformation and ignorance are major components of stereotypes and prejudices. An important part of the work of the Equal Opportunities Commission, the ongoing project, is to disseminate information to anti stereotype and encourage human rights standards behavior. HREOC's "Face the Facts" publication has eliminated myths about refugees and Aboriginal people. Our Voice of Australia Resources shares experiences, greater understanding between people of different ethnic backgrounds, cultures, and religions is encouraged.</p>
<p>Case studies; reflections on privilege and trauma; using sanctuary model in the classroom; using sociocracy and other rounds-based communication to create inclusion</p>
<p>When I present material, I ask students to evaluate it for bias and scientific accuracy. I present opposing views on topics. I incorporate environmentalists who are minorities. I discuss environmental justice.</p>
<p>By building cultural competence and making sure participants are aware of the oppressive systems at play</p>
<p>If presenting ideas that could be considered political, I ask students to evaluate for bias. I state that I am not trying to impose my own views, nor am I making judgments but am developing their content knowledge so they can make informed decisions. I do promote the idea of their civic duty and vote for those who align with their beliefs.</p>
<p>Encouraging all voices to take space, as well as make space for others. Challenging students to examine the ways they've been told to enjoy the outdoors vs. how they actually enjoy the outdoors and recognize that anything enjoyed outdoors is valid.</p>
<p>I establish an ethic of calling in and model this with other program leaders. I hold myself accountable and ask that others help me be accountable to respectful and anti-oppressive ways of leading EE programs and other aspects of my professional and personal life. I also try to model what calling in looks like, with the hope that it influences better behaviors and attitudes, but also for my own integrity so that I am not staying complicit.</p>
<p>Pay attention to politics, economy, culture, and environment.</p>

Thirty-two percent (115) of environmental educators reported that they include the perspectives of diverse communities and evaluate the accuracy and reliability of courses. 40% (144) reported reflecting on past experiences to improve their teaching practices in environmental education. Twenty-eight percent (100) reported that they critically evaluate existing environmental education programs to determine cultural appropriateness to their context. Forty-four percent (158) reported that they design and coordinate pedagogical activities

that use methods designed for diverse audiences. Fifty-two percent (187) of participants stated that they role model sociopolitical consciousness and cultural competence behaviors to their students. Fifty-five percent (198) underscored the complexity and interconnectedness of the natural environment with current or past society, technology, and the economy. Forty-five percent (162) build consensus/agreement from the different points of view that the students, parents, administrators, and community members hold regarding the teaching of environmental education.

The fourth research question explains how environmental educators value MEE. The researcher hypothesized that environmental educators from racially minoritized groups (i.e., Black, Latine, Asian, Other) would value MEE differently than those with dominant identities. Contrary to my hypothesis, an independent samples t-test indicated that White environmental educators ( $M=22.35$ ,  $SD = 4.33$ ,  $N=57$ ) did not significantly differ in their value of MEE when compared to that of non-White environmental educators ( $M=23.25$ ,  $SD= 4.25$ ,  $N=36$ ). The results did not support the hypothesis that White and non-White environmental educators value MEE differently.

## CHAPTER 5: CONCLUSION AND DISCUSSION

This study aimed to gain a better understanding of how environmental educators understand and use Running Grass' multicultural environmental education. The survey revealed that many environmental educators had a basic understanding of multicultural concepts in environmental education, but only 44% (158) had heard of MEE specifically. Most of those who had heard of MEE or reported using MEE did not use the required aspects of MEE, as shown in Table 9. Table 9 shows the items that Running Grass asserts must be true of MEE programs. The table also indicates whether these items were mentioned by environmental educators who participated in this study. There were two initial hypotheses in this study. One hypothesis states that environmental educators from underrepresented groups are more likely to use pedagogical theories and practices catered to diverse audiences. The second hypothesis stated that environmental educators from underrepresented groups are more likely to use pedagogical theories and practices catered to diverse audiences. However, the study results did not support either of these hypotheses. One explanation for these null findings is that sufficient statistical power was not achieved. Though the sample size was large, many participants did not respond to items regarding their demographic information, and the researcher included fewer participants in the analyses. The researcher placed demographic items at the end of the survey because best practices indicate that placing demographic questions at the end may encourage participants to complete the survey compared to surveys where researchers place sensitive demographic questions at the start (Pew Research Center, n.d.; Toor, 2020). However, in this case, placing the demographic questions at the end resulted in some participants choosing not to provide that data after completing the other portions of the survey.

**Table 9***Running Grass (1994) Requirements of MEE Compared to Participant Responses*

Requirements of MEE	Presence in Participant Responses	Number of Participants Who Mentioned the Concept
Educators recognize that children may have different needs based upon and shaped by their places of residence	Yes	7
Educators illuminate the essential idea that all cultures have a relationship with the natural world which they and all others can draw upon for understanding and inspiration	Yes	3
Educators use the opportunities to help children become aware of, understand, accept, and celebrate other cultures and their environmental traditions;	Yes	10
Educators facilitate students to critique the forces which have oppressed people as well as nature	Yes	16
Educators envision a multicultural society at peace with the natural world and itself	Yes	24
Educators include families and communities directly and significantly in the development and implementation of environmental education curricula and programs	Yes	11

At the time of this study, and based on a thorough review of the literature, there were no comprehensive studies measuring the understanding and use of MEE among individual environmental educators. For example, Marouli (2002) interviewed 14 MEE nonprofits in the United States to understand how educators understood MEE, their interpretations of the meaning of MEE, and some of the difficulties educators associated with MEE. The literature noted that organizations largely served urban students and partook in several activities, including educational programs, activist activities, services for communities of color, and partnerships with other organizations and communities.

While there is little research on the perceptions of MEE among environmental educators, there are several studies related to educators' perceptions of multicultural education more broadly. Sharma (2005) measured 150 K-12 teachers' perceptions of multicultural education in Florida and their preparation to educate students from diverse audiences. The current study supports Sharma's conclusion that there is little to no correlation between teacher perceptions and demographics. The current study also has various areas of cohesion or inconsistency with prior studies, as outlined in the following pages.

The first research question pertained to how environmental educators conceptualize cultural relevance in environmental education. Blanchet-Cohen and Reilly (2016) posited that culturally relevant environmental education, which is associated with MEE, can provide space for democracy, knowledge creation, and knowledge integration. Their conceptualization of cultural relevance included allowing students to serve as co-curricular collaborators and making space for students to learn as a bridge between their schools and households or broader communities (i.e., intergenerational learning) by funneling environmental knowledge gained in schools into promoting environmental care outside of school, in particular with immigrant children. The researchers also proposed that educators think about how schools relate to communities and rethink learning from being one-directional to being multi-directional. This research minimally supported Blanchet-Cohen and Reilly's conceptualization of cultural relevance as themes of multi-directional learning, intergenerational learning, and co-curricular collaboration did not emerge through the survey responses. There are two exceptions within the study data. One participant stated, "providing environmental education to diverse audiences and seeking their input in all stages of development." Another participant stated, "a primary aspect is interacting with families and communities and restoring damaged or disrupted habitats."

On the other hand, Agyeman (2002) proposed that culturing environmental education must be geared toward challenging the dominant White, male, heterosexual power paradigm. He called for teachers and learners to acknowledge and challenge assumptions in ideologies and discourses in environmental education. This study supports Agyeman's conceptualization of culturally relevant environmental education by challenging dominant paradigms and assumptions. Participants' conceptualizations included statements such as:

- “incorporating diverse perceptions from diverse cultures in planning and teaching EE”
- “it's a critique of systems that create inequality in the environment and teaching of ways to change the world.”
- “points of view, awareness of injustices across cultures,”
- “centered around issues/use/perceptions/solutions of the dominate (most often White) group/society, and how you can expand your teaching practice/programs to bring in more voices/experiences.”

Lastly, Bengston and colleagues (2012) conceptualized “culturally appropriate” environmental education as the cultural community having a role in informing the curriculum, teachers tailoring educational materials that reflect the context of students' cultural community, and teachers delivering material in a format that mirrors the traditions of students' cultural community. This study supports Bengston's conceptualization of culturally relevant environmental education as reflecting the culture of the community being served. Participants' conceptualizations included statements such as:

- “utilizing and validating the participant's prior knowledge of the content/experiences with it and incorporating that into their learning,”

- “It means that you use various cultural perspectives as a lens through which to consider environmental issues,”
- “Using the cultural background of all students to inform educational practices and make learning relevant to them,” and,
- “Acknowledging that everyone comes with a different background, experience, and comfort with the outdoors. Being able to tailor programming to suit. If we're learning about scientists or adventurers, incorporating people from diverse backgrounds and unique career paths into the lesson. (Not all dead White men who went to Ivy League) For me, it also means that I have to check my own privileges and make sure that if I make a reference to an experience that I think is common/easy...is it easy for my audience?”

The second research question pertained to the pedagogical theories and practices that environmental educators use when working with students from racially, culturally or socioeconomically diverse populations. Hypothesis: Environmental educators from underrepresented groups (non-White and non-male) (i.e., yes, no) are more likely to use pedagogical theories that are catered to diverse audiences (i.e., yes, no). I formed this hypothesis based on standpoint theory, which posits that White educators cannot see or understand marginalized groups' struggles in the same way that BIPOC educators can (Stapleton, 2020). Forty percent of participants in this study indicated that they use specific pedagogical theories when working with racially, culturally, or socioeconomically diverse audiences. Of these, eight participants indicated that they used a pedagogical theory catered to diverse audiences, such as culturally responsive teaching, critical race theory, and multicultural education. Among the eight participants who reported using a pedagogical theory that catered to diverse audiences, seven

self-identified as White, one preferred not to share their racial identity, and all but one identified as female. The sample size was too small to indicate the likelihood of using a pedagogical theory catered to diverse audiences. Therefore, the study did not support the hypothesis that environmental educators from underrepresented groups would be more likely to use pedagogical theories catered to diverse audiences. Further, the pedagogical theory used by the largest share (22%) of participants was experiential learning theory.

The third research question focused on how environmental educators use the concepts of MEE. This question was exploratory and did not have a hypothesis. Findings from this study were consistent with Barry and Lechner (1995), who found that preservice teachers were aware of multicultural issues in education, but whose ideas were inconsistent with the current research. Educators indicated that they use various techniques, including group discussions, journaling, role-play, group work, lecture, role modeling, and community service.

The fourth research question pertained to how White and non-White environmental educators valued the use of MEE. The hypothesis was that environmental educators from racially minoritized groups would value MEE more than those with dominant identities. There was no significant evidence to support the hypothesis for this research question. The results indicate that both White and non-White environmental educators self-reported a high valuation of MEE. While non-White participants had a slightly higher valuation of MEE, it was not a statistically significant difference. While there have been no prior studies that examine how individual environmental educators value MEE, there have been many studies regarding the perceptions of both preservice and in-service teachers of multicultural education. The findings of this study are consistent with Jimenez et al. (2014), who found that white teachers in South Texas understood and valued multicultural education and felt that schools should implement it daily in schools.

Conversely, this study contrasts with Taylor et al. (2016), who found that less than half (44%) of preservice teachers in their sample of white teachers from Georgia believed it was important to explore cultures other than their own (indicating a low valuation). Further, this study is consistent with Zimmerman (2006), who found that most K-12 teachers agree on the high importance of multicultural education but disagree on the meaning of multicultural education, how to teach it, and what implementation looks like in classrooms.

### **Strengths and Limitations**

The current study is an in-depth examination of how environmental educators understand and use Multicultural Environmental Education. The instrument is strong in that it measured MEE, the implementation of multicultural education, the inclusion of environmental justice in environmental education curricula, and the valuation of MEE. The research sought to understand whether environmental educators intentionally or inadvertently use MEE to get a fuller picture of MEE implementation. However, since the researcher used a convenience sample, responses may reflect only the ideals of those who felt comfortable sharing. While the survey gave participants a plethora of options for reporting their race and ethnicity, another limitation was categorizing all BIPOC people into one group for analysis and reporting. Unfortunately, racial and ethnic groups were not large enough to disaggregate them. The hypotheses were generalized to White-and non-White partly because the researcher did not anticipate that there would be large enough samples of each racial group, given the lack of diversity in the environmental education field. Additionally, given that the research used only certain recruitment platforms (i.e., newsletters and listservs), another limitation is that environmental educators who are not subscribed to these tools or acquainted with someone who is, may not have been aware of the study. Lastly, while the researcher acknowledged that diversity in the environmental field is lacking among several

identity groups, this study focused only on racial, ethnic, and gender demographics. Given that not all participants in the survey reported their racial identity, these results did not support the hypothesis that BIPOC environmental educators would value MEE more than White environmental educators. Of the 360 cleaned and analyzed surveys, 185 participants reported their racial identity. However, the researcher removed many additional surveys during the listwise deletion stage of SPSS analysis due to missing racial demographic information or missing MEE value responses. Therefore, I did not have sufficient power to determine group differences in the mean score of MEE (Faul et al., 2007). Additionally, research acknowledges that there are often vast inter-and intragroup differences among BIPOC people. I classify results only White and non-White racial groups for this study. Specifically, there were not large enough proportions of racially minoritized people to disaggregate groups, and the researcher wrote the hypotheses for BIPOC as a whole group rather than disaggregated group. Lastly, I attempted to run a chi-square test for hypothesis two, which stated, “environmental educators from underrepresented groups are more likely to use pedagogical theories and practices catered to diverse audiences.” Still, the results were not significant because the group sizes were too unequal to test whether there were significant associations. The chi-square test was not used for analysis and is not reported in the results section because there would have been a risk of accepting the null hypothesis when it is not true (meaning there is an effect in the true population, but it was not detectable).

### **Implications for Future Research**

This research adds to an otherwise underwhelming amount of scholarly literature on MEE. No prior study has sought to measure environmental educators’ knowledge, use, and valuation. This study lays the groundwork for understanding the extent to which environmental educators implement MEE and in what ways and if environmental educators’ use of MEE is in alignment with its principles. However, the open-ended survey items used in this study do not

provide context. Future research would benefit from expansive and in-depth interviews with people who practice Multicultural Environmental Education. Considering the missing voices of marginalized groups from environmental education research (Agyeman, 2003; James, 2003; Zandvliet et al., 2009), future research could also survey and interview larger audiences of environmental educators from ethnoracially minoritized groups to understand their experiences and practices more deeply. Future research could model Ndemanu (2018), who studied preservice teachers' comfort level with multicultural education. The researcher supplemented participants' self-reports with classroom observations and examinations of course materials. Using classroom observations and course material examinations would highlight inconsistencies between participants' perceptions and realities, as with the Ndemanu study.

### **Implications for Practice**

The results of this study indicate that there is a basic understanding of what MEE means but not an in-depth understanding. The results also highlight inconsistencies in the ways that teachers apply MEE. The majority of survey respondents (84% or n=302) were open to receiving additional training on MEE. Therefore, one recommended strategy for environmental education practitioners could be to offer training opportunities on MEE. This could involve subsidizing training on components of MEE such as environmental justice, multicultural education, or critical pedagogy. Practitioners could also attend comprehensive MEE training at facilities like the Three Circles Center for Multicultural Environmental Education in California. This training must include multiple in-depth sessions, given that existing research has indicated that one course is not sufficient to prepare educators (Chisholm 1994; Taylor et al., 2016). This study will inform teacher education programs by providing a basis for where instructors can build for the MEE or diversity-related courses. Furthermore, the results of this study can inform the

practice of environmental educators by giving them a working understanding of MEE and how to implement it in future interventions.

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**APPENDICES**

## **Appendix A**

### Request to Organizations

“Hi,

My name is Tatiana Height and I am a doctoral student in the Agricultural and Extension Education Program at NC State University. I am currently working on my dissertation, which focuses on multicultural environmental education, and would like to invite environmental educators who are associated with your organization to participate in my study by completing a brief survey. Would you be willing to share the study invitation with environmental educators via Qualtrics using this link? \*insert link here\* Please let me know if you have any questions.

What would be the procedure for that?

I look forward to hearing from you soon.

Thank you!”

## **Appendix B**

### Recruitment Flier Text

#### Volunteer Research Participants Needed!

My name is Tatiana Height and I am a doctoral candidate at North Carolina State University in the College of Agriculture and Life Sciences.

As a part of my research, I am conducting a study about how environmental educators understand, use, and operationalize pedagogical techniques for working with diverse audiences. As a part of this study, I am querying environmental educators about their teaching practices. As a fellow environmental educator, I am seeking your input for my research on a volunteer basis.

Participants will be asked to complete a 20-45 minute survey and will have the opportunity to opt-in to a follow-up interview of around one hour. Any input given as a part of this research will be reported with names and all directly identifiable information redacted. Re-identifiable data will be shared as a part of my dissertation, but will be published in aggregate or with quotes with names removed to protect the privacy of participants.

There is minimal risk associated with participation and no direct benefit to participants. Your participation is greatly appreciated! Those who complete all research activities will be entered into a drawing for a chance to win a \$25 electronic gift card.

To participate, please click the link to access the consent form and survey:

[https://ncsu.qualtrics.com/jfe/form/SV\\_3KmsAIRW7MknFNY](https://ncsu.qualtrics.com/jfe/form/SV_3KmsAIRW7MknFNY)

If you have questions about participating in this research study, contact the principal investigator or faculty advisor.

#### **Principal Investigator**

Tatiana Height, MCRP, CNP

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**Faculty Advisor**

Dr. Maru Gonzalez

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**Appendix C**  
Survey Instrument  
*Demographic Questions*

1. Gender
  - a. (Male) (female) (non-binary) (gender fluid) (Trans-masculine) (Trans-feminine)  
(Prefer not to share)
  - b. Other \_\_\_\_\_
2. Race (select all that apply)
  - a. (Black/African/Afro-Latino) (Latina/o/x/e) (White/European/Caucasian)  
(Indigenous) (Central Asian) (East Asian) (South Asian) (Western Asian) (Pacific Islander) (Middle Eastern) (prefer not to share)
  - b. Other \_\_\_\_\_
3. Age
  - a. (18-24) (25-35) (36-60) (61+)
4. In what settings have/do you deliver Environmental Education programs/curricula?
  - a. School
  - b. Outdoor Center
  - c. Museum
  - d. Camp
  - e. Park or Nature Area
  - f. Garen or Agricultural Setting
  - g. Recreational group or club
  - h. Other (please specify)
5. Please select the best category to describe your current position

- a. Supervisor
  - b. Administrator
  - c. Educator
  - d. Consultant
  - e. Volunteer
  - f. Student
  - g. Other, please specify
6. In what country do you practice Environmental Education?
- a. United States
  - b. Mexico
  - c. Canada
7. Select all of the identity groups that you actively serve as an environmental educator.
- a. (Black/African/Afro-Latino) (Latina/o/x/e) (White/European/Caucasian)  
(Indigenous) (Central Asian) (East Asian) (South Asian) (Southeast Asian)  
(Western Asian) (Pacific Islander) (Middle Eastern) (Male)
  - b. (female) (non-binary) (gender fluid) (Trans-masculine) (Trans-feminine)  
(Christian)
  - c. (Christan) (Muslim) (Buddhist) (Hindu) (Jehova's Witness) (Seventh Day  
Adventist) (Other) (Unknown)
  - d. (low-income) (moderate income) (high income) (Unknown)
  - e. (immigrant) (native-born)
  - f. (English-speaking) (Spanish-Speaking) (French-Speaking) (Multilingual)  
(English language learner) (other)

- g. Other \_\_\_\_\_ -
8. With what grade levels do you work with? (Select all that apply)
- a. Grades k-6
  - b. Grades 7-8
  - c. Grades 9-12
  - d. Post-secondary
9. For how many years have you been involved in teaching Environmental Education?
10. What is your educational background?
- a. Degree(s)
  - b. Major(s)
11. Do you possess any formal education or certification related specifically to Environmental Education?
- a. Yes
  - b. No

Pedagogy is defined as the method and practice of teaching children, while andragogy is defined as the method and practice of teaching adults.

12. Which *pedagogical theories* do you utilize in your Environmental Education Practice?
13. Do you change the *pedagogical theories* you utilize, when working with racially, culturally, or socioeconomically diverse audiences?
- a. Yes
    - i. Which theories do you utilize in your Environmental Education Practice of racially, culturally, or socioeconomically diverse audiences?
  - b. No
14. Which *techniques* do you utilize in your Environmental Education Practice?

15. Do you change the *techniques* you utilize, when working with racially, culturally, or socioeconomically diverse audiences?
  - a. Yes
    - i. Which *techniques* do you utilize in your Environmental Education Practice of racially, culturally, or socioeconomically diverse audiences?
16. Have you heard of the concept of Multicultural Environmental Education? (yes/no)
17. What does Multicultural Environmental Education mean to you?
18. Do you practice Multicultural Environmental Education?
19. Please share any challenges, which you perceive might apply to delivering Environmental Education to diverse audiences
20. It is important to have the ability to (select all that apply):
  - a. Continuously update environmental information to include the perspectives of diverse communities, while evaluating accuracy and reliability of sources
  - b. Reflect on past experiences to improve teaching practices in EE
  - c. Critically evaluate existing EE programs to determine cultural appropriateness to your context Engage learners (i.e. facilitate questions and encourage analysis and interpretation of content)
21. It is important to have the ability to (select all that apply):
  - a. Design and coordinate pedagogical activities that use methods designed for diverse audiences (i.e. scientific or social research experiments for students)
  - b. Role model sociopolitical consciousness and cultural competence behaviors to students
22. It is important to have the ability to (select all that apply) :
  - a. Teach EE from a holistic perspective by underscoring the complexity and interconnectedness of the natural environment with society, technology and the

economy ( i.e. include concepts such as systems dynamics, participatory democracy and the precautionary principle)

- b. Build consensus, from the different points of view that students, parents, administrators and community members hold, regarding the teaching of EE Add components of EE into multiple discipline areas (i.e. through simulation models or case studies)

Strongly disagree to strongly agree

23. As a part of my Environmental Education practice, I teach students about mutual respect, justice, and freedom from discrimination or bias.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree

23b. How do you do this?

23c. How frequently do you do this? (sliding scale 0-100% of the time)

24. As a part of my Environmental Education practice, I teach students to value political, economic, cultural, and environmental self-determination.

- a. How do you do this?
- b. How frequently do you do this?

25. As a part of my Environmental Education practice, I encourage students to hold themselves and others accountable.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree

25b. How do you do this?

25c. How frequently do you do this?

26. As a part of my Environmental Education practice, I foster a safe and healthy environment.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree

26b. How do you do this?

26c. How frequently do you do this?

27. As a part of my Environmental Education practice, I educate students about providing compensation to communities who have been inequitably burdened environmentally.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree

27b. How do you do this?

27c. How frequently do you do this?

28. As a part of my Environmental Education practice, I integrate ethics into the curriculum.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree

28b. How do you do this?

28c. How frequently do you do this?

29. As a part of my Environmental Education practice, I integrate human rights into the curriculum.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree

29b. How do you do this?

29c. How frequently do you do this?

30. As a part of my Environmental Education practice, I teach students the value of affirming sovereignty and self-determination of indigenous people.

- a. Strongly disagree
- b. Disagree

- c. Neither disagree or agree
  - d. Agree
  - e. Strongly agree
- 30b. How do you do this?
- 30c. How frequently do you do this?
31. As a part of my Environmental Education practice, I discuss cultural integrity of urban and rural communities.
- a. Strongly disagree
  - b. Disagree
  - c. Neither disagree or agree
  - d. Agree
  - e. Strongly agree
- 31b. How do you do this?
- 31c. How frequently do you do this?
32. As a part of my Environmental Education practice, I promote fair access.
- a. Strongly disagree
  - b. Disagree
  - c. Neither disagree or agree
  - d. Agree
  - e. Strongly agree
- 32b. How do you do this?
- 32c. How frequently do you do this?

33. As a part of my Environmental Education practice, I discuss opposition to military, repression, and exploitation.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree

33b. How do you do this?

33c. How frequently do you do this?

34. As a part of my Environmental Education practice, I center environmental and social issues on the experiences of BIPOC people.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree

34b. How do you do this?

34c. How frequently do you do this?

35. As a part of my Environmental Education practice, I encourage students to practice personal and consumer choices that consume minimal natural resources.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree

- d. Agree
- e. Strongly agree

35b. How do you do this?

35c. How frequently do you do this?

Multicultural Environmental Education is defined as a form of Culturally Relevant Pedagogy that hopes to reignite a relationship between humans and the earth, and bridges global and local environmental issues, by incorporating cultural consciousness into Environmental Education.

With that in mind, please answer the following questions.

36. Students from diverse populations learn more about the environment through the use of

Multicultural Environmental Education.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree

37. Integrating Multicultural Environmental Education and EE instructional methods would enhance my students' learning.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree

38. Integrating Multicultural Environmental Education and EE instructional methods can create engaging instruction.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree

39. Students can learn about their local environment by using instructional Multicultural Environmental Education.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree

40. Multicultural Environmental Education can help students comprehend complex environmental concepts.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree

41. I am comfortable using Multicultural Environmental Education as a teaching strategy.

42. Use of Multicultural Environmental Education requires more planning than traditional instructional methods.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree

43. If additional professional development or training would become available on the integration of Multicultural Environmental Education in EE, I would participate.

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree

44. I am comfortable using Multicultural Environmental Education in my job

- a. Strongly disagree
- b. Disagree
- c. Neither disagree or agree
- d. Agree
- e. Strongly agree